Attachment 9.7

Response to Draft Decision: Assessing Financeability for a Benchmark Regulated Business

A report by Incenta Economic Consulting

2016/17 to 2020/21 Access Arrangement Information Response to Draft Decision

Australian Gas Networks

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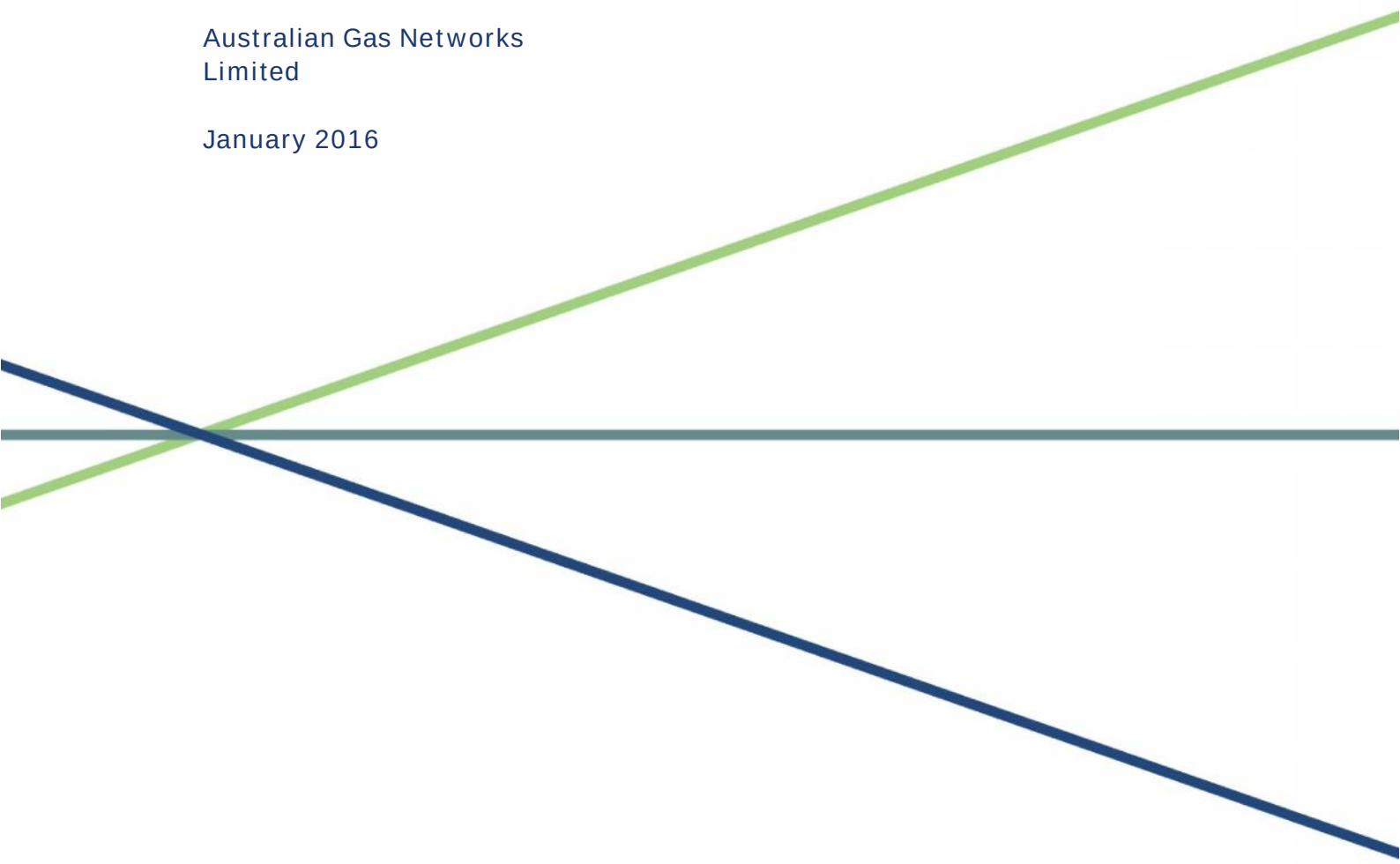
Assessing financeability for a benchmark regulated business: comment on the Draft Decision

Australian Gas Networks Limited

January 2016



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1. Introduction and summary

1.1 Purpose

1. I prepared a report in June 2015 for Australian Gas Networks Limited (AGN) that assessed whether the regulated cash flows to AGN for the next (2016/17 to 2020/21) regulatory period would be likely to support a BBB+/Baa1 credit rating if the AER applied its standard estimate of the weighted average cost of capital (WACC) and standard approach to regulatory depreciation.[1] In setting the benchmark cost of debt, the AER assumes that a benchmark regulated energy business could obtain and maintain a BBB+/Baa1 credit rating, and so this analysis was a test of whether such a decision would be internally consistent by providing cash flows that support the benchmark credit rating. I concluded for this latter scenario that the cash flows were not expected to sustain a BBB+/Baa1 credit rating for a benchmark firm, and indeed there was a material risk as to whether a BBB/Baa2 rating could be maintained.[2]

2. The AER has since released its Draft Decision in relation to AGN, and AGN has asked me to update my analysis to reflect the contents of the Draft Decision. In addition, the AER also levelled a number of criticisms at the analysis that I undertook, as well as the relevance of such an assessment of financeability more generally. AGN has also asked that I respond to these criticisms. My terms of reference are attached to this report at Appendix A.

3. I note that one of the AER's criticism was that the analysis I had undertaken – in which I compared projected financial indicators for a benchmark regulated energy network in AGN's position to thresholds for those indicators ascertained from credit rating reports for AGN – "misrepresents and oversimplifies the approach of credit rating agencies".[3] This criticism is considered in a separate report that the National Australia Bank has prepared for AGN (I have been provided with a draft of that report and refer to it where relevant in this report).

4. This report has been prepared by Jeffery John Balchin. I am the Managing Director of Incenta Economic Consulting, a firm that specialises in advising in relation to economic regulation issues in the infrastructure sector. I have 20 years of experience in relation to economic regulation and pricing issues across the electricity, gas, ports, airports and water sectors in Australia and New Zealand, having advised governments, regulators and major corporations on issues including the development of regulatory frameworks, regulatory price reviews and with respect to the negotiation of charges for unregulated infrastructure services. My full curriculum vitae was attached to my earlier report. I have read, understood and complied with the Guidelines for Expert Witnesses in Proceedings in the Federal Court of Australia (these guidelines were also appended to my earlier report).

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1 Incenta Economic Consulting (2015), Using the profile of prices during an access arrangement period and return of capital to improve financial metrics, report for Australian Gas Networks, June.

2 Incenta Economic Consulting (2015), Using the profile of prices during an access arrangement period and return of capital to improve financial metrics, report for Australian Gas Networks, June, p.4.

3 AER (2015), Draft Decision for AGN, November, Attachment 3, p.3-222.

1.2 Summary of conclusions

Financeability of a benchmark efficient entity in the position of AGN

5. In relation to the cash flow implied by the Draft Decision, I conclude from the analysis that I have performed that if no additional measures are applied to improve the financeability of the asset, then the credit metrics generated for a benchmark efficient regulated energy network would be substantially below the threshold to maintain a BBB+/Baa1 credit rating, with the projected "funds from operation to debt" ratio projected to be below 7 per cent for much of the period, materially below the threshold identified for BBB+/Baa1 of 9 per cent.[4] Indeed, the FFO to debt ratio is again sufficiently low that it is questionable whether the benchmark efficient regulated energy network could receive and retain a BBB (Baa2) credit rating. These conclusions are materially the same as those that I reached in my earlier report.

6. This outcome would not satisfy rule 89(1)(e) of the NGR as it would not provide sufficient cash flow to meet the service provider's legitimate cash flow needs (this provision is discussed further in section 3).

7. I recommend that AGN be permitted to advance its cash flow sufficient to meet the minimum credit metrics that would lead to the benchmark efficient entity being expected to maintain a BBB+/Baa1 credit rating. The mechanism that I propose to achieve this is by advancing regulatory depreciation, which I propose to be done by applying a fixed offset factor to the annual inflation indexation (revaluation) of the regulatory asset base (RAB). That is, rather than indexing the RAB by CPI, the RAB would be indexed by CPI-Z% (where Z% is the offset factor). This offset factor will determine the proportion of the compensation that AGN receives for CPI inflation in cash in the year in question, with the remainder being received via being capitalised into the RAB. I find that, based on the AER Draft Decision, an offset factor of **2 percentage points** would be the minimum required to ensure that the benchmark efficient regulated business would be expected to maintain a BBB+/Baa1 credit rating.[5] Note that for the avoidance of doubt this proposed approach does not change or shorten asset lives and is also NPV neutral.

8. The advancement of cash flow that I recommend is to improve financeability for the next regulatory period. It is possible that the credit metrics for a benchmark efficient entity in the position of AGN would naturally improve. This could, for example, occur if interest rates revert to levels more in line with historical averages and the WACC increases as a result. To the extent that the credit metrics naturally improve, it would be open for the AER to review the size of the revaluation offset factor (or remove it altogether), and quite appropriate for this to occur.

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4 FFO interest cover is also below the level that I identified in my previous report as required to maintain a BBB+/Baa1 credit rating (2.4x), although this indicator is redundant if the FFO/debt ratio is already binding.

5 This means that if CPI inflation is 2.5 per cent per annum (as forecast), the first 2 percentage points would be received by AGN in revenue in the year in question, and the remaining 0.5 percentage points would be capitalised into the RAB.

Assessment against the requirements of the NGL and NGR

9. The first reason for permitting an advancement of cash flow is to achieve internal consistency across all of the interlinked aspects of the determination that the AER makes in relation to AGN's reference tariffs. By internal consistency I mean that a firm that corresponds to the AER's description of a benchmark efficient entity would recover its efficient costs. Ensuring such internal consistency is fundamental to cost-based regulation and so the achievement of the revenue and pricing principles and the National Gas Objective. Specifically, the revenue and pricing principles provide that a service provider should be provided with a reasonable opportunity to recover at least its efficient costs.[6]However, if the hypothetical benchmark efficient entity would not recover its efficient costs (due to the actual cost of debt exceeding the benchmark), then there is a real prospect that real-life firms would be denied such an opportunity even if they are efficient.

10. The second reason for allowing cash flow to be advanced at a time when credit metrics are lower than normal is because this will make it easier for regulated businesses (such as AGN) to access the assumed low-cost pools of debt finance, and so promote efficient investment.[7] This outcome is consistent with the revenue and pricing principle that service providers be provided with effective incentives to promote economic efficiency, which includes efficient investment.[8] I also conclude in this report that providing cash flows that would permit a benchmark efficient entity to maintain a credit rating of BBB+/Baa1 would increase the prospect that the benchmark entity could continue to raise debt finance from these markets even if unexpected, adverse events occur. This in turn would increase the prospect that efficient investment would continue to occur even in these circumstances.

11. The third reason for permitting the advancement of depreciation in the next regulatory period is that this is likely to promote a flatter trajectory of prices over time compared to the Draft Decision method *if* the WACC is expected to increase in future regulatory periods (i.e., as interests rate revert to levels in line with historical averages).[9] In particular, by advancing depreciation through a fixed offset approach while the WACC reflects the very low interest rates, and then reducing or removing this offset as the WACC increases (which I argue would be appropriate in paragraph 7 above), I find that a reasonably flat trajectory of reference tariffs over time would be expected. In contrast, if the settings in the Draft Decision are maintained, a substantial upward "price shock" would be expected if such an increase in the WACC were to occur.

12. In my view, permitting the advancement of depreciation as I have proposed meets the requirements of the relevant criteria in the National Gas Rules (NGR). In particular:

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6 Section 24(2) of the National Gas Law.

7 I note that if service providers considered that access to low cost debt finance was is threat one potential response would be to pull back on investment in order to maintain investment grade credit ratings. I am aware that there is some precedent for this action that occurred during the GFC.

8 Section 24(3) of the National Gas Law.

9 This reason for permitting the advancement of depreciation was not included in my earlier report, but became apparent when I was considering the comments the AER made on my analysis in the Draft Decision.

a. *Reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services (rule 89(1)(a))* – this would be met by having a trajectory of reference tariffs over time that are flatter than otherwise (in real terms). I find that the options of advancing depreciation or not are neutral on this criterion if the WACC is expected to remain at current levels, but (for the reasons discussed in paragraph 10) if the WACC is expected to increase in the future to historical averages then advancing depreciation while the WACC remains low is expected to create a flatter time profile of reference tariffs.

b. *So as to allow for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs (rule 89(1)(e))* – in my view encourages precisely the actions that I advocate, namely for using regulatory depreciation to address financeability issues.

13. In my view, advancing regulatory depreciation will promote the long term interests of consumers and so the National Gas Objective.[10] At the outset, I observe that advancing regulatory depreciation should not be contrary to consumers' interests in minimising reference tariffs when considered over the long term. This is because altering regulatory depreciation merely changes the time profile of reference tariffs, but not the value of charges over time (adjusted for the time value of money) – thus, any short term detriment is offset precisely by a later benefit. However, in my view, advancing depreciation as proposed will promote the long term interests of consumers as:

a. It will improve the environment for investment, and so advance consumers' long term interests in ensuring a reliable gas supply, and

b. If the WACC is expected to increase over time, as discussed already above, advancing depreciation while the WACC is low will provide a mechanism for avoiding a material future "price shock" (as well as avoiding the prospect of encouraging consumers to make irreversible decisions based on a reference tariff that is only temporarily low), which I would expect to be one of the long term interests of consumers.

14. Lastly, as I noted above, creating a consistency across all elements of the AER's determination on reference tariffs is also necessary to ensure that the benchmark efficient regulated energy network has a reasonable opportunity to recover its cost, and hence is necessary to meet the first of the "revenue and pricing principles" in the National Gas Law.[11]

10 National Gas Law, section 23.
11 National Gas Law, section 24(2).

Response to the AER's comments

15. I have considered the comments that the AER made on my previous report, and have not been persuaded to change my findings. The summary of my response to the AER is as follows.[12]

    a. *The testing of credit metrics against targets oversimplifies the work of credit rating agencies* – this issue has been addressed in the report by NAB, which verifies the veracity of the analysis that I have undertaken.

    b. *The analysis amounted, in effect, to an indirect test of the adequacy of the return on equity provided in the Draft Decision, which the AER considered was adequately justified* – there is nothing in my analysis that amounted to a test of the return on equity, rather its effect is just to make the obvious point that if the return on equity is reduced substantially without any other change to the regulatory model, then credit metrics must suffer. In addition, I did not recommend an increase to the return on equity to address financeability issues. Rather, I recommended changes to other aspects of the regulatory regime (regulatory depreciation) so that the low return on equity could better be accommodated, and in a manner that could not affect the total charges to consumers (in present value terms) over time.

    c. *My projection of financial indicators assumed that the rate of return would remain constant into the future* – I acknowledge this and have taken this into account in this report. However, I note that the possibility that the WACC may increase in the future does not remedy financeability issues in the next access arrangement period.

    d. *I had not demonstrated that AGN would be unable to raise capital, nor recognised the substantial variation in credit ratings across businesses* – my focus was on the position of the benchmark efficient regulated energy network, for the reasons provided above. In addition, the intention behind using "benchmark" (hypothetical) assumptions when setting regulated prices is to permit firms to make their own decisions on the relevant matter (for example, gearing), but to bear the full consequences of their decisions. Thus, the fact that different credit ratings are observed across regulated firms is to be expected, but it says nothing about whether a determination as a whole is internally consistent nor whether the benchmark efficient regulated energy network would have a prudent degree of resilience against unforeseen adverse events.

1.3 Structure of this report

16. The remainder of this report is set out as follows:

    a. In Chapter 2 I provide my updated analysis of the credit metrics of a benchmark efficient energy network for the next access arrangement period.

[12] The AER also said that I had not explained by advancing regulatory depreciation would meet the relevant criteria in the National Gas Rules or advance the long term interests of consumers. My views in this regard are set out clearly in this report, as summarised already above.

b. In Chapter 3 I address the comments the AER made in the Draft Decision on the analysis in my previous report.

c. In Chapter 4 I provide more detail on how my proposed mechanism for advancing regulatory depreciation would be implemented.

2. Analysis of the credit metrics implied by the Draft Decision

2.1 Assumptions applied

17. I have applied the following assumptions when estimating the financial indicators for AGN:

    a. I have used the WACC, expenditure forecasts and demand forecasts that were used in the Draft Decision and have also applied the other changes (for example, to the starting RAB values) that the AER applied.

    b. In relation to the longer term forecasts:

        i. Consistent with my previous analysis, I have assumed that operating expenditure remains constant in real terms and that demand grows in line with the forecast rate of growth in the next access arrangement period.[13]

        ii. I have also assumed in the results presented here that the WACC remains constant over the 40 year forecast period, although I show the results of varying that assumption in section 3 below.

        iii. In the base case, I assume that the AER's proposed capital allowance for 2020/21 continues, which is very similar to the base case I applied in my previous analysis (my previous base case – reflecting the average spend in the last 10 years – was $72 million per annum, whereas the proposed allowance for 2020/21 is $76 million per annum). I also test the effect of a higher capital expenditure scenario in which capital expenditure is 50 per cent greater than the 2020/21 allowance (which is approximately half way between the average annual spend implied by AGN's proposal and the AER's allowance).

    c. When using the base case long term capital expenditure forecast, I derive price paths for each regulatory period (with the exception of the next regulatory period) on the assumption that an ongoing X factor of 1 per cent applies (with a "goal seek" performed to choose the X factor for the first year).[14] When I use the higher capital expenditure scenario, I apply an ongoing X factor of 0 per cent because this provides a flatter profile of revenue over the forecast period. In all cases, I have used the X factors in the Draft Decision for the next regulatory period.

18. In relation to the critical limits for the credit metrics, I have again assumed that:

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13 It is noted that this assumption affects only the forecast trajectory of reference tariffs in future access arrangement periods and not the financial ratios.

14 As I explained in my previous report, the choice of ongoing X factor does not have a material effect on the conclusions drawn (see Incenta Economic Consulting (2015), Using the profile of prices during an access arrangement period and return of capital to improve financial metrics, report for Australian Gas Networks, June, n.30).

a. If FFO/debt falls sustainably below 9 per cent then a benchmark efficient regulated energy network would not be able to maintain a BBB+/Baa1 credit rating (but suffer a downgrade to BBB/Baa2), and

b. If FFO/debt falls sustainably below 7 per cent, then a benchmark efficient regulated energy network would not be able to maintain a BBB/Baa2 credit rating (but suffer a downgrade to BBB-/Baa3).

19. I provided my reasons for adopting these critical limits in my previous report. I note that the report by the NAB supports using these values in the manner in which I used them in my previous report.[15]

20. In my previous report, I also showed the effect of two measures that could be employed to improve the financeability of the benchmark efficient firm during the next access arrangement period. The outcome of both of the measures was to advance the return of capital, but not change the value of revenue (in net present value terms). The two measures were:

a. To apply an annual rate of indexation (revaluation) to the RAB of less than CPI. The precise tool that I apply in this section is to index the RAB annually by "CPI – Z%" (rather than the full CPI), with a correspondingly lower indexation offset amount also used in the revenue requirement calculation. I refer to the Z% factor as the "revaluation offset" in the discussion below. The same revaluation offset would be applied when rolling forward the RAB at the end of the access arrangement period, albeit with forecast CPI being replaced with actual CPI. This model is discussed further in section 4.

b. To treat a certain proportion of capital expenditure as akin to operating expenditure for the purpose of setting reference tariffs (i.e., permitting full recovery in the year rather than spread over time).

21. In this report, I focus on the results of applying the "revaluation offset" option. In my previous report, I found that the effect on financial ratios of reclassifying expenditure was very sensitive to forecasts of capital expenditure, and so has a less predictable effect on financeability. For this reason, I do not consider this measure to be the most appropriate for addressing financeability issues. In addition, the application of a "revaluation offset" amounts to a change to the depreciation schedule, and this is the tool that the National Gas Rules (NGR) encourage as the mechanism for addressing financeability issues (I discuss the NGR in more detail in section 3).[16]

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15 I have used the 9% threshold on the basis that Moody's is clear in stating that the relevant threshold for a Baa1 (BBB+) credit rating is for the FFO/debt ratio to be 9 per cent.

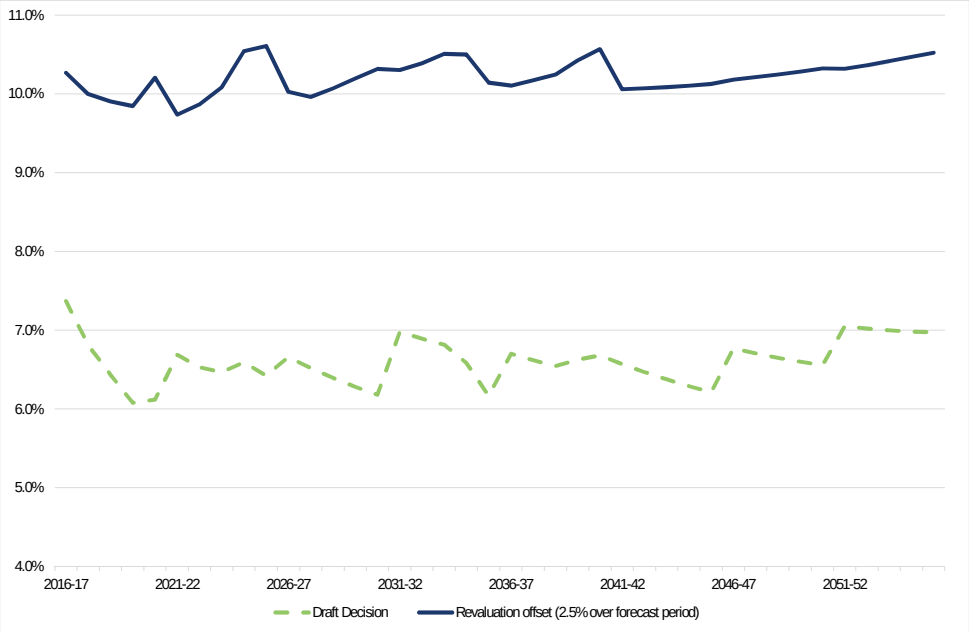
16 I observe for completeness, however, that an adjustment to the calculation of reference tariffs from what was contained in the Draft Decision is required, in my view, to meet the National Gas Objective and ensure consistency with the revenue and pricing principles, and hence its motivation extends beyond the specific requirements of rule 89.

2.2 Results

2.2.1 Projected financial ratios

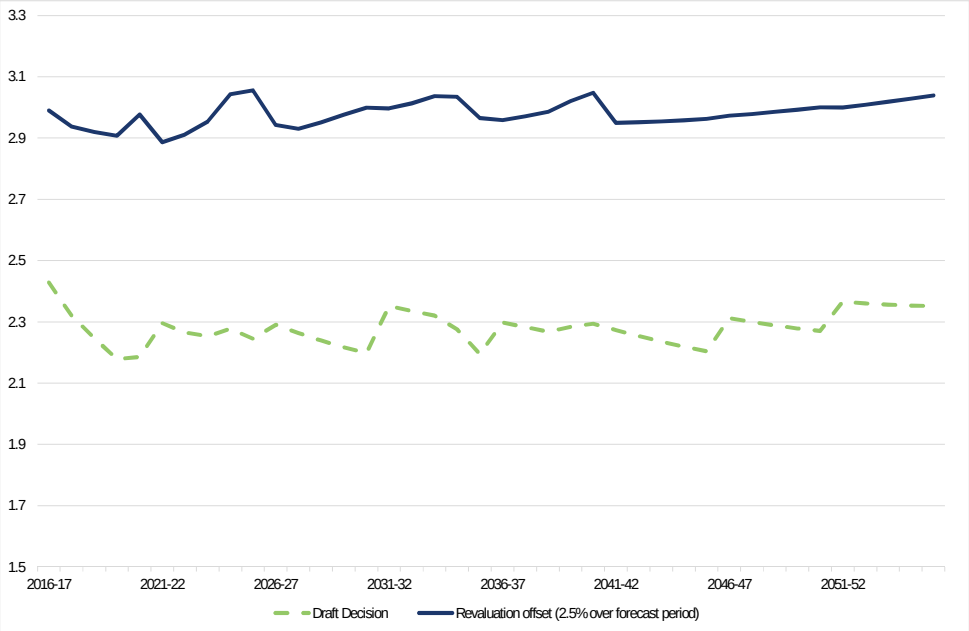
22. Figures 1 and 2 show the projected financial ratios under the assumptions described above over the 40 year forecast period. These figures are equivalent to figures 4 and 5 from my previous report, but with the assumptions updated to reflect the Draft Decision.[17]

Figure 1: FFO/Debt: Draft Decision and applying a "revaluation offset" to RAB indexation



[17] I have updated the label for the "revaluation offset" option to more clearly describe this option.

Figure 2: FFO Interest Cover: Draft Decision and applying a "revaluation offset" to RAB indexation



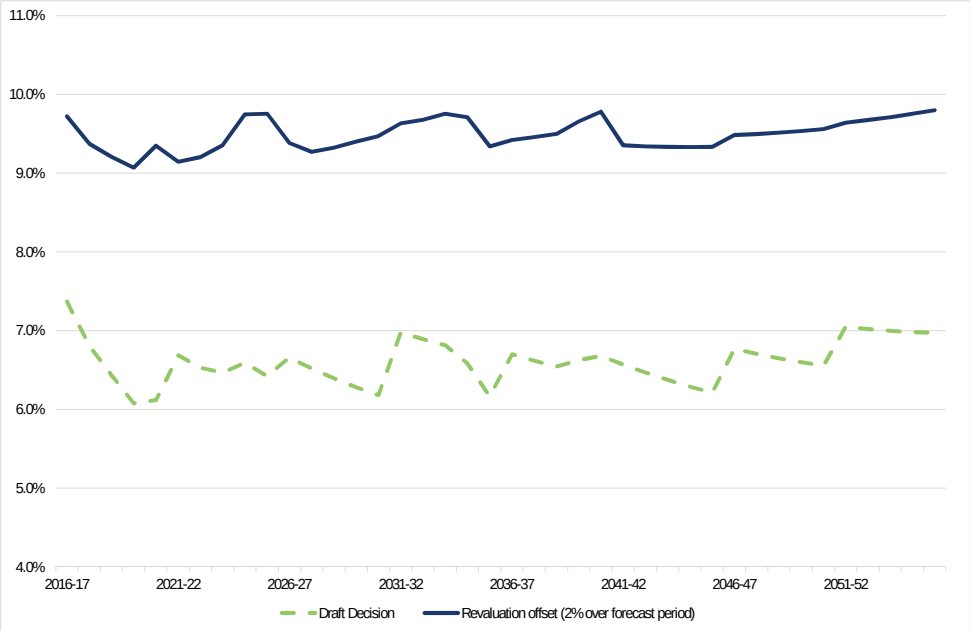
23. In relation to the cash flow implied by the Draft Decision, the conclusion that can be drawn from the above figures is materially the same as included in my previous report, namely that applying the current WACC and doing nothing else to improve the financeability of the asset, then the credit metrics generated for a benchmark efficient regulated energy network would be substantially below the threshold required to maintain a BBB+/Baa1 credit rating, with the projected "funds from operation to debt" ratio projected to be below 7 per cent for much of the period, materially below the threshold for BBB+/Baa1 of 9 per cent.[18] Indeed, the FFO to debt ratio is again sufficiently low that it is questionable whether the benchmark efficient regulated energy network could receive and retain a BBB (Baa2) credit rating.

24. This outcome would not satisfy rule 89(1)(e) of the NGR as it would not provide sufficient cash flow to meet the service provider's legitimate cash flow needs (this provision is discussed further in section 3).

25. The figures above also show the effect of indexing the RAB by CPI – 2.5% (i.e., a revaluation offset of 2.5 per cent), which means that no indexation of the RAB is forecast (given the Draft Decision inflation forecast of 2.5 per cent). The most important ratio – FFO to debt – is comfortably above the 9 per cent threshold for maintaining a BBB+/Baa1 credit rating, and so would be consistent with maintaining the benchmark credit rating. Indeed, as I found in my previous report, the target of 9 per cent FFO to debt ratio could be maintained with a slightly smaller revaluation offset of 2 per cent. The projected FFO to debt ratio under this option is shown below.

[18] FFO interest cover is also below the level that I identified in my previous report as required to maintain a BBB+/Baa1 credit rating (2.4x), although this indicator is redundant if the FFO/debt ratio is already binding.

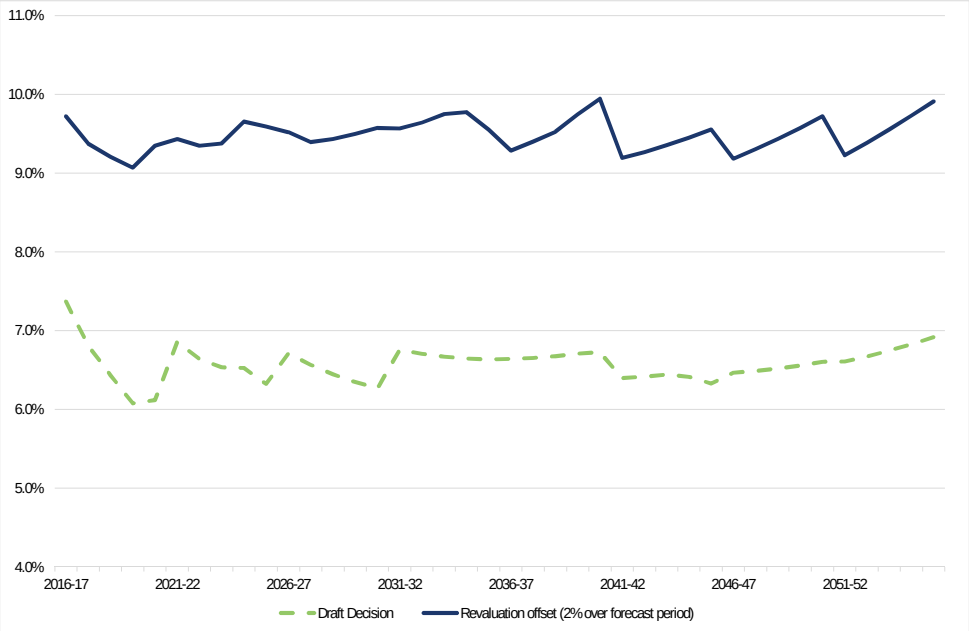
Figure 3: FFO/Debt: Draft Decision and applying the alternative "revaluation offset" to RAB indexation



26. Figure 4 repeats the previous figure (i.e., for the most relevant financial indicator and with a 2 per cent revaluation offset) for the higher capital expenditure scenario. It is apparent from the figure that the magnitude of future capital expenditure has little effect on projected financeability under either option.[19]

[19] What is apparent from this figure is that a different combination of X factors between the initial price change and the ongoing price change would be appropriate to smooth out the financial ratios during the regulatory period.

Figure 4: FFO/Debt: Draft Decision and applying the alternative "revaluation offset" to RAB indexation – Higher capex scenario



2.2.2 Projected prices

27. Figures 5 and 6 show the profile of prices over the forecast period, first for the base case scenario for capital expenditure and then for the "higher capital expenditure" scenario.

Figure 5: Real weighted average price under different RAB indexation – base case capital expenditure

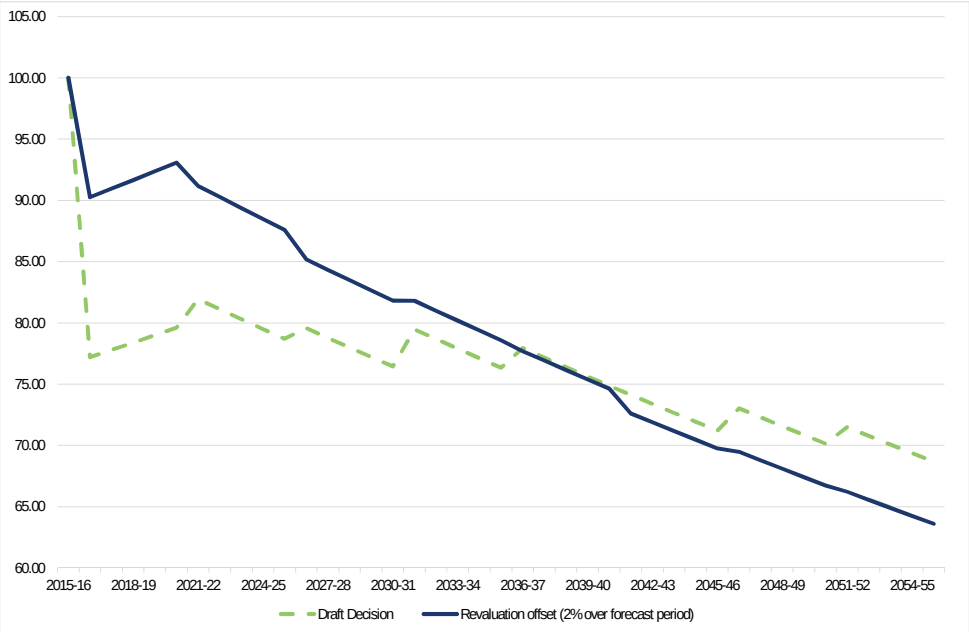


Figure 6: Real weighted average price under different RAB indexation – higher capital expenditure

28. These time profiles for prices are very similar to what I presented in the draft report. What they show is that the projected time profile for prices is again sensitive to the forecast of capital expenditure. That is:

    a. Under the base case capital expenditure forecast, prices under the Draft Decision setting fall more quickly initially than under the revaluation offset (of 2 per cent) option, but then fall at a slower rate (in real terms). However, there is little difference between the prices at the end of the forecast period (the Draft Decision prices are 8 per cent higher).

    b. Under the higher case for capital expenditure, prices under the Draft Decision fall initially but then are projected to increase in real terms over the forecast period. In contrast, the prices under the revaluation offset (of 2 per cent) option continue to fall – but at a modest rate – over the period. Again, there is only a small difference in the prices that are projected at the end of the forecast period (the Draft Decision prices are 5 per cent higher).

29. Again, as I concluded in my previous report, I do not think the difference in the price paths to be sufficiently large to consider that a material difference in economic (allocative) efficiency would flow from the choice of whether or not part of the compensation for inflation is paid out in a cash sense in the year in question (i.e., if the "revaluation offset" was applied).

30. However, as the AER indicated in its Draft Decision, one of the key assumptions that I have made is that the regulatory WACC remains at its current level for the full forecast period. I agree that this is a strong assumption, and that a more reasonable assumption would be that it will revert to a level that is more indicative of a long term average over time. Once the prospect of a change in the WACC is taken into account, I think that

accelerating the recovery of capital during the next access arrangement period will generate a time profile of prices that better promotes the long term interests of consumers. I discuss this further in section 3 below.

3. Response to the comments in the Draft Decision

3.1 Comments made in the Draft Decision

31. The principal comments made on my analysis in the Draft Decision were that:

    a. My "mechanistic" comparison of the projected financial ratios for the benchmark efficient regulated energy network in the position of AGN "misrepresents and oversimplifies the approach of credit rating agencies",[20] with the role of the qualitative factors applied by credit rating agencies emphasised. It was also commented that the application of credit metrics that were specific to AGN may not be able to be generalised to the benchmark efficient entity "as they may reflect characteristics or circumstances that are specific to AGN".[21]

    b. The analysis amounted, in effect, to an indirect test of the adequacy of the return on equity provided in the Draft Decision, and the AER considered that it had adequately justified this value.[22]

    c. My projection of financial indicators assumed that the rate of return would remain constant into the future, which was referred to as a "significant weakness".[23]

    d. I had not "engaged with the consequences" of advancing the recovery of capital (accelerating depreciation), demonstrated whether this approach would meet the requirements of the NGR nor why it would be in the long term interests of consumers.[24]

    e. I had not demonstrated that AGN would be unable to raise capital even if the determination caused a credit rating downgrade, and it was remarked that AGN's parent had been able to raise capital in the past even though its credit rating had been BBB-. It was also noted that there had been substantial variation across the actual credit ratings of regulated businesses notwithstanding the fact that a similar benchmark assumption had been applied in the past.

32. It is convenient to address this last comment first because it portrays a material misunderstanding with the analysis that I undertook and the conclusions that I reached.

33. The first argument that I advanced was that there should be internal consistency across all aspects of the determination that the AER makes in relation to AGN's reference tariffs. As part of this, I said that the cash flows that are generated by AGN's reference tariffs should be consistent with maintaining the credit rating that the AER considers to be an appropriate benchmark for setting the cost of debt for a benchmark efficient

20 AER (2015), Draft Decision for AGN, November, Attachment 3, p.3-222.
21 AER (2015), Draft Decision for AGN, November, Attachment 3, p.3-223.
22 AER (2015), Draft Decision for AGN, November, Attachment 3, p.3-222.
23 AER (2015), Draft Decision for AGN, November, Attachment 3, p.3-223.
24 AER (2015), Draft Decision for AGN, November, Attachment 3, p.3-222.

regulated energy network.[25] The reason for requiring internal consistency across all aspects of a determination is most easily explained by considering the outcome for a benchmark efficient firm under the Draft Decision:

a. Such a firm has been provided with a revenue stream that assumes it is able to maintain a BBB+/Baa1 credit rating; however

b. To the extent that the cash flows to the benchmark efficient firm would not sustain that credit rating, then the benchmark efficient firm's credit rating would be lower than the AER had assumed when deriving its reference tariffs, and

c. As a consequence, the benchmark efficient firm could not be said to have been afforded a "reasonable opportunity to recover at least the efficient costs" incurred in providing the service.[26]

34. I did not argue that AGN would have difficulties *in reality* with raising capital in the future. The focus of my analysis was on the situation of the benchmark firm. Similarly, it is irrelevant that firms in practice make decisions that result in credit ratings that differ to the benchmark. This is the intention of applying benchmarks when setting regulated prices – firms can decide to do different things (for example, to take on more gearing) and possibly be rewarded, but equally consumers are not exposed if decisions are made that turn out adverse. However, none of this provides any basis for not deriving reference tariffs such that a firm that made decisions consistent with those of a benchmark efficient firm was able to recover its (efficient) costs.[27]

35. I address the remainder of the comments in turn below.

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25 I also said that I supported the use of a BBB+/Baa1 credit rating for a benchmark efficient regulated energy network because it would leave the benchmark efficient regulated energy network with a degree of resilience to shocks, which I said was in the long term interests of customers (Incenta Economic Consulting (2015), Using the profile of prices during an access arrangement period and return of capital to improve financial metrics, report for Australian Gas Networks, June, p.7).

26 These words come out of the "revenue and pricing principles" (NGL, section 24(2)); however, the proposition that there should be internal consistency when applying benchmarks to regulation is fundamental to cost-based regulation and the pursuit of the long term interests of customers. I elaborate upon this further below.

27 Adjusting cash flow to ensure that the *hypothetical* benchmark efficient entity is able to maintain a BBB+/Baa1 credit rating would also be expected to improve the investment prospects of the *actual* regulated businesses. As noted earlier, it is expected that regulated businesses may target a different credit rating to the benchmark (for example, by taking on more or less debt than the benchmark assumption), and it is intended that the business should bear the risk associated with this departure from the benchmark. However, if the cash flow is sufficient for the *benchmark* firm to maintain a BBB+/Baa1 credit rating, then the credit rating that the *actual* firm will expect to maintain would also be predictable – that is, greater or lower than BBB+/Baa1 depending upon (for example) whether the entity has more or less debt than the benchmark assumption. In contrast, however, if there is no testing of whether the benchmark efficient entity could indeed maintain a BBB+/Baa1 credit rating – but instead the credit rating expected by the benchmark efficient entity is permitted to vary with such matters as the prevailing level of interest rates – then the variation in the credit rating of the *benchmark* efficient entity will translate into a similar unpredictability in the credit rating of the *actual* regulated firm.

3.1.1 Application of financial ratios

36. As noted above, the report from experts at the NAB for AGN applies a very similar exercise to what I did when advising on the likely credit rating of a benchmark efficient entity under the Draft Decision, and applies the same critical values for the relevant financial indicators. I take this as confirmation that I had validly replicated the analysis – and reached the conclusions – that the major ratings agencies would be expected to reach.[28]

3.1.2 Interaction with the return on equity

37. The AER is incorrect to interpret my assessment of the financeability of the benchmark efficient entity as any form of implied assessment of the return on equity that the AER has proposed to apply. I did not suggest in my report that the return on equity was wrong or that it should be adjusted in any way.

38. What is implied by my analysis, however, is that the return on equity the AER applies will have implications for the credit metrics that a benchmark efficient entity could maintain if no other changes are made to the method of setting regulated prices. Indeed, the comment in the same paragraph that a reduction in the return on equity "necessarily results in worse credit metrics" appears to concede this point. A further implication that can be taken from my earlier report is that advancing regulatory depreciation provides a mechanism for the AER to apply the return on equity that it considers appropriate in this low interest rate environment while still providing cash flow that would permit the benchmark efficient entity to maintain a BBB+/Baa1 credit rating.

3.1.3 Projection of long term financial ratios and the WACC

39. I accept the AER's comment that a weakness of my earlier analysis was the assumption of a constant WACC over the forecast period (40 years). My analysis in this report does not provide expert opinion on the appropriate WACC or its parameters, nor is this something I have been asked to do. However, I accept that as the AER implies, both the yield on government bonds and corporate borrowing rates are lower than their long term averages, and a reversion to the mean should be expected over the long term.[29]

40. Importantly, however, the fact that the WACC may return to a more normal value in the future does not affect the principal conclusion of my analysis. That is, my analysis showed (and still shows) that a benchmark efficient entity could not maintain a

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28 Indeed, it may be somewhat conservative to hold the qualitative analysis constant as I (and NAB) have assumed given that the extent to which the regulatory regime supports cost recovery is one of the qualitative factors that I would expect credit rating agencies to consider. For example, Moody's says that it will assess "a regulator's willingness to keep the volatility and the uncertainty associated with operating and financial costs with the companies or to pass these onto consumers" Moody's Global, 2009, Regulated Electric and Gas Networks, August, p.10).

29 Professor Lally has described both the yield on government bonds and the debt risk premium on corporate debt as "mean reverting processes": Lally, M., (2013), The Dividend Growth Model, March, p.5; Lally, M. (2015), Review of submissions on transition issues for the cost of debt, October, p.47.

BBB+/Baa1 credit rating over the next regulatory period unless there is a change to how reference tariffs are determined (such as by advancing the return of capital).[30]

41. Rather, if the WACC does increase in the future, it may not be necessary to advance the return of capital to the same extent (or at all) for a benchmark efficient entity to be able to maintain a BBB+/Baa1 credit rating. This means that it would be appropriate for the AER to review the method of regulatory depreciation at future access arrangement reviews in light of the WACC that is prevailing at the time. Indeed, my proposed method of advancing the return of capital – which is by applying an "offset" to the annual indexation of the RAB – is particularly suited to being fine-tuned at future regulatory periods if the extent of financeability issues abate (i.e., if a 2 per cent offset is applied in the next period, this could simply be reduced to a 1 per cent offset in a future period or indeed no offset at all). However, to underscore the previous point, the possibility that the WACC may increase in a future regulatory period does not resolve the financeability issue in the next period.

42. While noting I have not undertaken expert analysis of the WACC for AGN and its parameters as part of my analysis, I have undertaken some simulations to show how the reversion of the WACC to a long term average value may affect the projected financial ratios, and how this could be responded to in future reviews. In the simulations that I present below, I assume the following about the WACC:

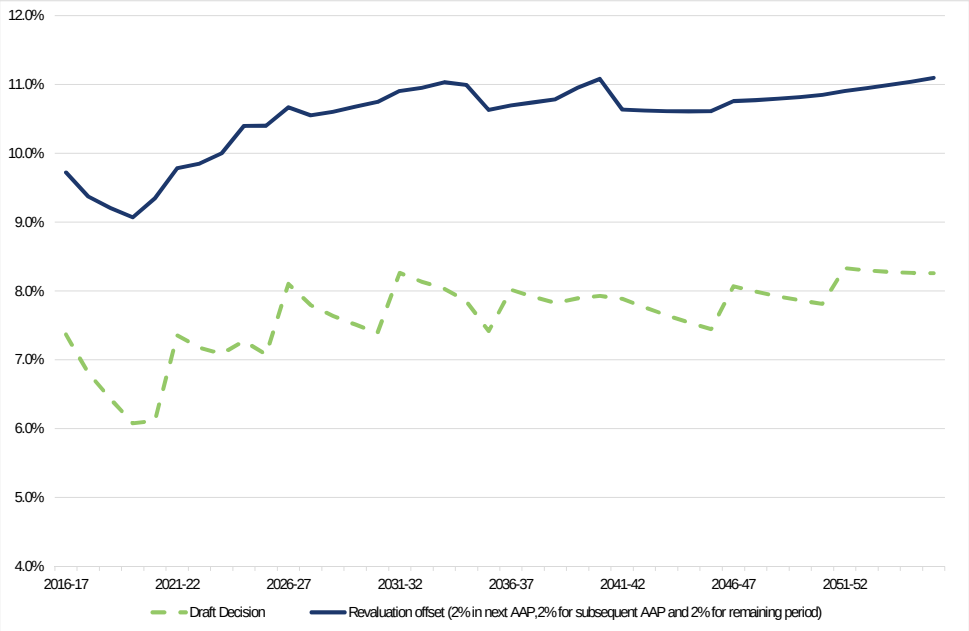
    a. A long term risk free rate of 5 per cent (for the cost of equity) and a cost of debt of 7 per cent, implying a long term WACC (post tax vanilla) of 8.02 per cent, and

    b. That the movement to this long term rate occurs over the next two access arrangement periods, so a WACC of 6.02 per cent applies for the next period, 7.02 per cent for the following period and 8.02 per cent from the following period onwards.

43. Figure 7 shows the effect on the FFO/debt financial ratio as the WACC increases over time if a revaluation offset of 2 per cent continues to be applied. This figure illustrates the AER's concern – the financial indicators become much stronger in the following periods than required to maintain a BBB+/Baa1 credit rating.

[30] My reason for providing forecasts for financial indicators over the long term was to (i) assess whether fixing a financeability issue in the next access arrangement period may create a worse problem in future periods (which it does not), and (ii) to assess how changes to regulatory depreciation would be likely to affect the time path of prices.

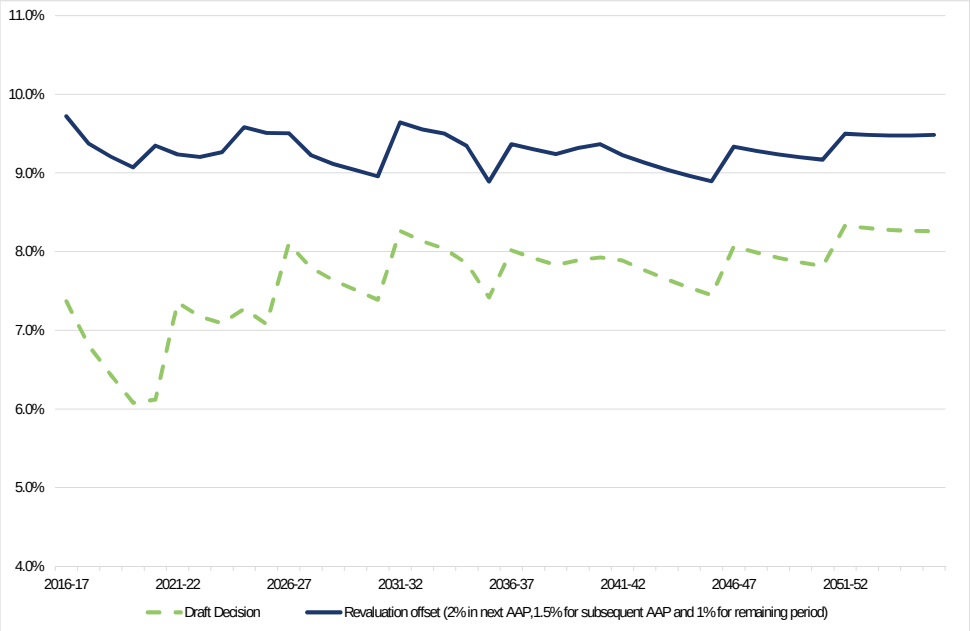
Figure 7: FFO/Debt credit metric as the WACC increases to a long term average value (constant revaluation offset)



44. In this case, it is clear that the FFO/debt ratio could be kept above the critical ratio of 9 per cent with a smaller revaluation offset. Figure 8 illustrates a possible response, showing the effect of applying a revaluation offset of 2 per cent for the next period, and then reducing this to 1.5 per cent and 1 per cent for the subsequent periods as the WACC increases.[31]

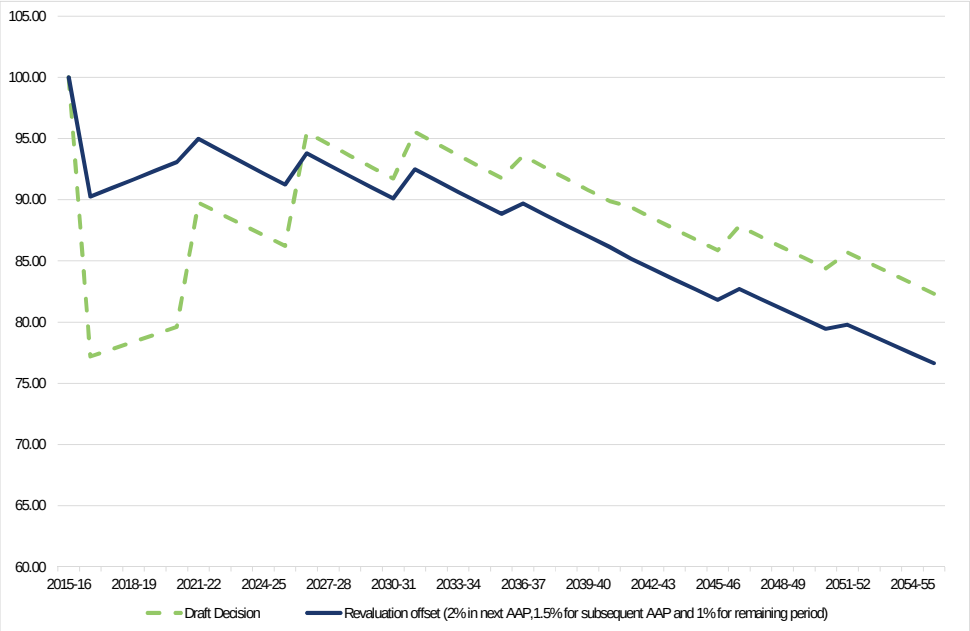
[31] Note that the actual analysis of financeability would need to take into account how both interest cover and the FFO/debt ratio changed. As the cost of debt increases there will be a point at which the interest cover financial ratio becomes the constraining factor.

Figure 8: FFO/Debt credit metric as the WACC increases to a long term average value (revaluation offset reduced as the WACC increases)



45. An equally important implication of a future increase in the regulatory WACC, however, is the effect that this will have on the level of future reference tariffs. Figure 9 shows the projected future reference tariffs under the Draft Decision method for setting prices, and under the alternative where a revaluation offset sufficient to maintain BBB+/Baa1 credit metrics is applied for the next access arrangement period and then reduced for future periods as the WACC increases (as per Figure 8).

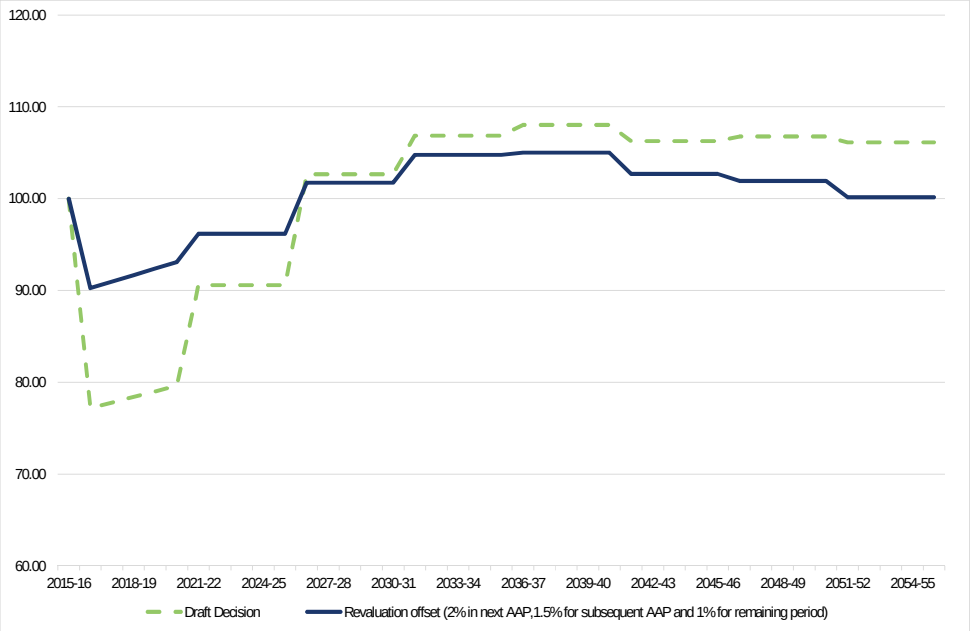
Figure 9: Real weighted average price under different RAB indexations as the WACC increases (base case capital expenditure)



46. It is clear from this figure that if the WACC does revert to a level that is more consistent with long term average values as the scenario assumes then there would be a material increase in reference tariffs under the Draft Decision method for setting prices. In contrast, by advancing the return of capital, a smoother price path over time would be expected.

47. Figure 10 illustrates the time path of prices that would result if the WACC reverts to the assumed long term average value under the scenario for higher capital expenditure. It is clear that under this scenario that the trajectory of prices would be much smoother over time if the return of capital is advanced while the WACC is at very low levels and the temporary benefit from this "banked" on behalf of consumers to be received (with interest) in future periods after the WACC had returned to normal levels.

Figure 10: Real weighted average price under different RAB indexations as the WACC increases (higher case capital expenditure)



3.1.4 Consequences of advancing depreciation, NGR provisions and the long term interests of consumers

48. The AER's comment that I had not "engaged with the consequences" of advancing depreciation is puzzling, given that the key consequences of advancing depreciation were the focus of my previous report. To be clear, the two consequences of advancing depreciation that are most relevant are:

a. cash flow is advanced to the business compared to the counterfactual, which then affects credit metrics – this consequence is illustrated in figures 1-4, 7 and 8 above, and

b. the time profile of prices is changed such that prices will be higher compared to the counterfactual early in the period, and lower in later periods (both with the total

charges unchanged, in present value terms) – this consequence is illustrated in figures 5,6, 9 and 10 above.

49. In terms of the requirements of the depreciation criteria in the NGR and the long term interests of consumers, I set out my views in turn below.

Depreciation criteria in the NGR

50. As I discussed in my earlier report, the two depreciation criteria from the NGR that are most relevant to this matter are that the depreciation schedule should be designed:

    a. so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services (rule 89(1)(a)), and

    b. so as to allow for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs (rule 89(1)(e)).

51. As I remarked in my earlier report, I read the first of these criteria (rule 89(1)(a)) as guiding the regulator to consider allocative efficiency concerns, that is, whether the proposed profile of depreciation will be consistent with the efficient use of the network. In gas distribution (consistent with other energy networks) much of the cost that is recovered through prices relates to costs that were incurred in the past and will not be affected by future network use. Efficient use of the network in this context is encouraged by spreading the recovery of these sunk costs over time in a manner that has the least effect on network use, which (in the absence of any expected changes in technology or consumer preferences) has been found to support prices that are smoother (in real terms) over time.

52. I observed in section 2.2.2 above that if the regulatory WACC is expected to remain at its current level for the foreseeable future, then I do not believe that the price trajectories under my proposed advancement of depreciation and the Draft Decision method to be sufficiently different to have a material effect on the efficient use of the network. However, as I noted in section 3.1.3, if the WACC is expected to revert in the future to a level that is more consistent with the historical average level of interest rates, then advancing depreciation in the next regulatory period while the WACC reflects interest rates at historical lows, and retaining the flexibility to adjust depreciation as the WACC increases, may be expected to result in a smoother trajectory of reference tariffs over time. In turn, this smoother trajectory of tariffs would be more consistent with encouraging the efficient use of the network. Indeed, there is a risk that consumers will make investments based on the prices that are only temporarily at very low levels. This would be avoided by "banking" this benefit to consumers to be realised in future regulatory periods when the WACC has returned to historical levels.

53. In terms of the second of the criteria above (rule 89(1)(e)), I read this criterion as giving explicit recognition to the desirability of using regulatory depreciation as a mechanism for addressing financeability issues in the manner that I have proposed.

Long term interests of consumers

54. In my previous report, I observed that a regulatory regime that adjusted the timing of cash flow to enhance the financeability of regulated businesses would be expected to maximise the capacity for those businesses to access, consistent with the benchmark assumption, lower cost debt finance, and so promote efficient investment.[32] In my view, it is clearly in the long term interests of consumers (all else constant) for the capacity of regulated businesses to access finance to be maximised so that they are well placed to make necessary investments for the benefit of end-use consumers. For this reason, it is also my view that this outcome would promote the NGO and the revenue and pricing principles. Specifically, promoting efficient investment is consistent with the revenue and pricing principle that service providers should be provided with effective incentives to promote economic efficiency, which includes efficient investment.[33]

55. The capacity and incentive to invest, and so the promotion of the NGO, is also influenced by the extent that a service provider can expect to recover at least the efficient costs of supply and so earn a normal return on investment. The importance of this outcome in promoting the NGO is reflected in guidance to this effect in the revenue and pricing principles.[34] As I have indicated above, a requirement for maintaining an expectation of cost recovery is that the cash flows that are generated by AGN's reference tariffs should be consistent with maintaining the credit rating that the AER considers to be an appropriate benchmark in setting the cost of debt for a benchmark efficient regulated energy network.

56. In terms of the other interests that consumers have, clearly consumers collectively have an interest in facing the lowest price. However, given that adjusting regulatory depreciation changes only the timing of revenue to the regulated business – but not its value – it must follow that the long term interest of consumers with respect to minimising charges is neutral to a change to regulatory depreciation. This is because any detriment in the short term is precisely offset by a benefit (and preserved in present value terms) in the long term (there is also the benefit of efficient investment, which improves the long term interests of consumers).

57. It could also be speculated that consumers may have other interests, which include having costs spread over time in a manner that appears to be fair and avoiding unexpected changes in prices (and unexpected price increases in particular). These interests would appear to argue for a time profile of prices that is flatter (all else constant) in real terms. This is the same outcome that I argued above would also be consistent with promoting the efficiency in use of the network. As I concluded above:

    a. If the current level of the WACC is expected to be maintained for the foreseeable future, then there is not a material difference in the "smoothness" of the trajectory of prices over time under the Draft Decision method compared to advancing depreciation.

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32 Incenta Economic Consulting (2015), Using the profile of prices during an access arrangement period and return of capital to improve financial metrics, report for Australian Gas Networks, June, pp.2, 6-7.

33 Section 24(3) of the National Gas Law.

34 Section 24(2) of the National Gas Law.

b. If the WACC is assumed to revert to levels that are more consistent with historical average interest rates, then there may be an advantage to consumers from advancing depreciation while interest rates remain low and to reverse this as interest rates increase. In particular, such a policy could avoid or ameliorate the possibility of a material future price increase that would result if the Draft Decision method were simply applied into the future without adjustment.

4. Practical application of the "revaluation offset" adjustment to depreciation

58. In this report, I have proposed that an offset factor be applied to the annual rate of indexation (revaluation) to the RAB. The precise tool that I have recommended is that the RAB be escalated annually by "CPI – Z%" (rather than the full CPI), with Z% being the offset factor. A correspondingly lower indexation offset amount would also be used in the revenue requirement calculation. The same revaluation offset would be applied when rolling forward the RAB at the end of the access arrangement period, albeit with forecast CPI being replaced with actual CPI during this operation.

59. The effect of applying a revaluation offset of (say) 2 per cent is that 2 percentage points of the compensation for inflation would be provided to the regulated business in a cash sense, rather than being capitalised into the RAB. However, changes in inflation would still flow through to the RAB one-for-one, and so the protection that is afforded against inflation risk from the CPI indexation under the current approach to updating the RAB would be maintained. As I noted earlier, a benefit of using a "revaluation offset" as a mechanism for advancing cash flow is that it is a flexible means of altering the timing of cash flow – the factor can be raised to advance cash flow further, or reduced to lower the extent of advancement. In addition, this mechanism operates without affecting the lives applied to the assets.

60. Figure 11 shows the how the revaluation offset mechanism would be applied to calculate the revenue requirement for a stylised (single asset example).

Figure 11: Application of the "revaluation offset" (stylised model)

[1]	WACC	10%										
[2]	Life	10										
[3]	Inflation (CPI) forecast	2.50%										
[4]	Revaluation offset	2.00%										
[5]												
[6]	**Year**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
[7]	**Remaning life**	10	9	8	7	6	5	4	3	2	1	
[8]												
[9]	***Standard approach***											
[10]	Annual revaluation rate	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	=[3]
[11]												
[12]	Opening RAB	100.00	92.25	84.05	75.38	66.23	56.57	46.39	35.66	24.37	12.49	
[13]	Indexation	2.50	2.31	2.10	1.88	1.66	1.41	1.16	0.89	0.61	0.31	=[10] x [12]
[14]	Depreciation	10.25	10.51	10.77	11.04	11.31	11.60	11.89	12.18	12.49	12.80	=([12] + [13]) / [7]
[15]	Closing RAB	92.25	84.05	75.38	66.23	56.57	46.39	35.66	24.37	12.49	0.00	
[16]												
[17]	Return on assets	10.00	9.23	8.41	7.54	6.62	5.66	4.64	3.57	2.44	1.25	
[18]	Depreciation (gross)	10.25	10.51	10.77	11.04	11.31	11.60	11.89	12.18	12.49	12.80	
[19]	Revaluation offset	-2.50	-2.31	-2.10	-1.88	-1.66	-1.41	-1.16	-0.89	-0.61	-0.31	
[20]	Revenue requirement	17.75	17.43	17.07	16.69	16.28	15.84	15.37	14.86	14.32	13.74	
[21]	NPV	100.00										
[22]												
[23]	***Revaluation offset***											
[24]	Annual revaluation rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	=[3] - [4]
[25]												
[26]	Opening RAB	100.00	90.45	80.80	71.06	61.21	51.26	41.22	31.07	20.81	10.46	
[27]	Indexation	0.50	0.45	0.40	0.36	0.31	0.26	0.21	0.16	0.10	0.05	=[24] x [26]
[28]	Depreciation	10.05	10.10	10.15	10.20	10.25	10.30	10.36	10.41	10.46	10.51	=([26] + [27]) / [7]
[29]	Closing RAB	90.45	80.80	71.06	61.21	51.26	41.22	31.07	20.81	10.46	0.00	
[30]												
[31]	Return on assets	10.00	9.05	8.08	7.11	6.12	5.13	4.12	3.11	2.08	1.05	
[32]	Depreciation (gross)	10.05	10.10	10.15	10.20	10.25	10.30	10.36	10.41	10.46	10.51	
[33]	Revaluation offset	-0.50	-0.45	-0.40	-0.36	-0.31	-0.26	-0.21	-0.16	-0.10	-0.05	
[34]	Revenue requirement	19.55	18.69	17.83	16.95	16.07	15.17	14.27	13.36	12.44	11.51	
[35]	NPV	100.00										

5. Declaration

61. I have has made all of the inquiries that I believe to be desirable and appropriate in the preparation of this report and no matters of significance that I regard as relevant have, to my knowledge, been withheld.

Jeffrey John Balchin
6 January 2016

A. Terms of reference

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Email: Anthony.groom@jws.com.au
Our Ref: B2385
Your Ref:
Doc ID: 67301804.1

4 January 2016

Jeffrey Balchin
Managing Director
Incenta Economic Consulting
Suite 1, 104 Langridge Street
COLLINGWOOD VIC 3066

Dear Mr Balchin

Australian Gas Networks Limited – South Australian Access Arrangement review

We act for Australian Gas Networks Limited (**AGN**) in relation to the Australian Energy Regulator's (**AER**) review of the Access Arrangement for AGN's South Australian gas distribution network under the National Gas Law and National Gas Rules for the period July 2016 to June 2021.

AGN wishes to engage you to prepare an expert report in connection with AGN's access arrangement revision proposal.

This letter sets out the matters which AGN wishes you to address in your report and the requirements with which the report must comply.

Terms of Reference

In June 2015 you prepared a report for AGN titled "Using the profile of prices during an access arrangement period and return of capital to improve financial metrics" which report was submitted by AGN with its access arrangement proposal.

The AER released its Draft Decision in respect of the access arrangement on 26 November 2015, which made various observations in respect of your report.

In the light of your June 2015 report and the draft decision of the AER would you please provide a response to the matters raised within the draft decision (relating to your report) and provide any further advice or observations you may have in relation to the matters raised and issues arising.

Use of Report

It is intended that your report will be submitted by AGN to the AER with its response to the Draft Decision.

If AGN was to challenge any decision ultimately made by the AER, that appeal will be made to the Australian Competition Tribunal and your report will be considered by the Tribunal. AGN may also seek review by a court and the report would be subject to consideration by such court. You should therefore be conscious that the report may be used in the resolution of a dispute between the AER and AGN. Due to this, the report will need to comply with the Federal Court requirements for expert reports, which are outlined below.

Compliance with the Code of Conduct for Expert Witnesses

Attached is a copy of the Federal Court's Practice Note CM 7, entitled "*Expert Witnesses in Proceedings in the Federal Court of Australia*", which comprises the guidelines for expert witnesses in the Federal Court of Australia (**Expert Witness Guidelines**).

Please read and familiarise yourself with the Expert Witness Guidelines and comply with them at all times in the course of your engagement by AGN.

In particular, your report should contain a statement at the beginning of the report to the effect that the author of the report has read, understood and complied with the Expert Witness Guidelines.

Your report must also:

1 contain particulars of the training, study or experience by which the expert has acquired specialised knowledge;

2 identify the questions that the expert has been asked to address;

3 set out separately each of the factual findings or assumptions on which the expert's opinion is based;

4 set out each of the expert's opinions separately from the factual findings or assumptions;

5 set out the reasons for each of the expert's opinions; and

6 otherwise comply with the Expert Witness Guidelines.

The expert is also required to state that each of the expert's opinions is wholly or substantially based on the expert's specialised knowledge.

It is also a requirement that the report be signed by the expert and include a declaration that "*[the expert] has made all the inquiries that [the expert] believes are desirable and appropriate and that no matters of significance that [the expert] regards as relevant have, to [the expert's] knowledge, been withheld from the report*".

Please also attach a copy of these terms of reference to the report.

Terms of Engagement

Your contract for the provision of the report will be directly with AGN. You should forward your account for the work performed directly to AGN.

Please sign a counterpart of this letter and return it to us to confirm your acceptance of the engagement.

Yours faithfully

Johnson Winter & Slattery

Enc: Federal Court of Australia Practice Note CM 7, "Expert Witnesses in Proceedings in the Federal Court of Australia"

……
Signed and acknowledged by Mr Jeffrey Balchin

Date ……