

Lyndon Rowe  
Chairman  
Economic Regulation Authority  
Level 4, Albert Facey House  
469 Wellington Street  
PERTH WA 6000

Dear Lyndon,

**Draft Rate of Return Guidelines**

ATCO Gas Australia is pleased to provide its submission to the Draft Rate of Return Guidelines released by the Economic Regulation Authority (ERA) on 6 August 2013 as required under Rule 87 of the National Gas Rules.

We note that submissions were due on 19 September 2013 and appreciate being afforded the flexibility to provide a submission shortly after the due date.

Our submission includes an Executive Summary which provides an overview of ATCO Gas Australia's views on the Draft Guidelines, as well as a more lengthy analysis of the substantive issues.

We look forward to continuing discussions with the ERA during the development of the final Guidelines.

Should you have any queries or wish to discuss the submission or other issues being considered, please do not hesitate to contact me on (08) 6218 1722.

Yours sincerely,

Sally McMahon  
**General Manager Regulatory and Risk**

25 September 2013

By email: [robert.pullella@erawa.com.au](mailto:robert.pullella@erawa.com.au)



# Submission in Response to Economic Regulation Authority's Draft Rate of Return Guidelines and Explanatory Statement

25 September 2013

## 1. Executive summary

1. Under the recent changes to the National Gas Rules ("**NGR**") the Economic Regulation Authority (the "**Authority**") is required to produce Rate of Return Guidelines. The NGR require that the rate of return guidelines set out:
  - (a) the methodologies that the regulator proposes to use in estimating the allowed rate of return including how those methodologies are proposed to result in the determination of a return on equity and a return on debt in a way that is consistent with the allowed rate of return objective; and
  - (b) The estimation methods financial models, market data and other evidence the regulator proposes to take into account in estimating the return on equity, the return on debt and the value of imputation credits referred to in rule 87A.
2. On 6 August 2013 the Authority released draft Rate of Return Guidelines for public review and comment.
3. ATCO Gas Australia welcomes the opportunity to comment on the Authority's Draft Rate of Return Guidelines ("**Draft Guidelines**") and the Explanatory Statement for the Draft Rate of Return Guidelines: Meeting the requirements of the National Gas Rules ("**Explanatory Statement**") that accompanied the Draft Guidelines.
4. The Draft Guidelines set out one methodology for estimating the return on equity and one approach to the return on debt. No indication is provided of how the Guidelines will be used to estimate the allowed rate of return in a way that is consistent with the rate of return objective.
5. The Australian Energy Market Commission ("**AEMC**") and the Authority have indicated that tests for reasonableness will be undertaken. The Draft Guidelines provide no information on what reasonableness checks will be undertaken or how the reasonableness checks will be utilised to assess whether the rate of return achieves the rate of return objective, including how the reasonableness checks might alter the estimated rate of return.
6. The Draft Guidelines introduce additional criteria and considerations which have resulted in the exclusion of relevant information and material that

otherwise should be considered to meet the requirements of rule 87.

7. ATCO Gas Australia considers that the Draft Guidelines have the potential to guide an approach that is inconsistent with the rules as a result of displacing the requirements of the rules and the *allowed rate of return objective* (“**ARORO**”) with additional criteria adopted by the Authority.
8. ATCO Gas Australia considers that the Guidelines should use the requirements of the rules as its assessment criteria and the Guidelines must clearly demonstrate compliance with the rules and the ARORO.
9. The AEMC’s amendments to rule 87 clearly require a fundamental shift from a mechanistic and formulaic approach to one where the regulator (and the service provider) must consider and respond to a broader set of information and approaches including contemporary market information. ATCO Gas Australia expects that this must result in Guidelines and an approach to Rate of Return that is distinguishable from the approach taken under the previous rule. ATCO Gas Australia is unable to see how the Draft Guidelines as currently drafted reflect a change in approach.
10. ATCO Gas Australia considers that in their current form, a proposal that adheres to the Draft Guidelines may not comply with the NGR. In this circumstance, ATCO Gas Australia would expect that a service provider must refer solely to the requirements of rule 87 and be cautious in following the Guidelines.

## 2. Introduction

11. Rule 87 has been amended significantly.
12. In this submission, ATCO Gas Australia demonstrates that the amendments to rule 87 introduced two key changes that require a substantive change in approach:
  - (a) a focus on ensuring that the allowed rate of return achieves the best possible estimate of the ARORO; and
  - (b) an express obligation to take into account multiple relevant estimation methods, financial models, market data and other evidence (“**methods and information**”).
13. ATCO Gas Australia submits if the amended rule was applied correctly and in compliance with the NGR, it would result in Guidelines foreshadowing a materially different approach to rate setting from regulators’ practices under the old rule. In contrast, at present the Draft Guidelines indicate an approach to the rate of return that is not distinguishable from the Authority’s previous approach.

### 3. The Guidelines have a prescribed role

#### 3.1 The Guidelines are subordinate to the NGL, NGR and ARORO

14. The guidelines exist within a statutory hierarchy. At the top of this hierarchy lies the NGL including section 28.<sup>1</sup> Next is the NGR. Both prevail over the Guidelines. The Guidelines should not, and cannot, displace the ARORO, much less the NGO. Rule 87(14)(a) emphasises this by requiring the Guidelines to set out how the adopted methodologies are proposed to contribute to the ARORO.
15. ATCO Gas Australia submits that contrary to this, the Draft Guidelines apparently do purportedly displace or modify the NGO, ARORO and RPPs, and do not comply with the rule 87(14) requirement that they set out how the adopted methodologies are proposed to contribute to the ARORO.

#### 3.2 The Guidelines have a specific legal task

16. Rule 87(14) requires that the Guidelines set out:
- “(a) the methodologies that the [regulator] proposes to use in estimating the allowed rate of return, including how those methodologies are proposed to result in the determination of a return on equity and a return on debt in a way that is consistent with the [ARORO]; and*
  - (b) the estimation methods, financial models, market data and other evidence the [regulator] proposes to take into account in estimating the return on equity, the return on debt and the value of imputation credits referred to in rule 87A.”*
17. For the reasons set out in this submission, ATCO Gas Australia submits that the Draft Guidelines do not fully satisfy these requirements.
18. The AEMC expected the Guidelines:
- “... to provide a detailed outline of the methodologies to which the regulator proposes to have regard in determining the rate of return.”<sup>2</sup>*
19. More specifically, the AEMC expected the Guidelines to:
- “detail the financial models that [the regulator] would take into account in its decision, and why it has chosen those models rather than other models. This would extend to outlining its methodologies, estimation techniques and current estimates (where appropriate) of relevant parameters;*
  - detail any other information that [the regulator] would expect to have regard to, and why it has chosen to have regard to that information and not to other information;*

<sup>1</sup> Which obliges the Authority to act in a manner that “will or is likely to contribute to the achievement of the national gas objective”, and to take into account the revenue and pricing principles.

<sup>2</sup> AEMC, Final Rule Determination, p. 70.

- *provide guidance on how it would use such models and information in reaching its decision, including matters such as:*
  - *the relative weight (although not necessarily in a quantitative way) it would expect to place on various model estimates; and*
  - *what market data (or similar) it would use to ascertain lower bounds and/or reasonableness checks on the estimates ...”.*<sup>3</sup>

20. Once again, for the reasons set out in this submission, ATCO Gas Australia submits that the Draft Guidelines do not fully satisfy these requirements.

21. ATCO Gas Australia acknowledges that the Explanatory Statement can assist readers to understand the Draft Guidelines’ derivation. However, everything that is required by rule 87 to be in the Guidelines must appear in the Guidelines themselves – it would not be sufficient for it to appear only in the Explanatory Statement, see comments at section 6.1 below.

### **3.3 The Guidelines should permit a good estimate of the likely rate of return**

22. The AEMC indicated that the Guidelines should:

*“... allow a service provider or other stakeholder to make a reasonably good estimate of the rate of return that would be determined by the regulator if the guidelines were applied”.*<sup>4</sup>

23. ATCO Gas Australia submits for the reasons set out below that the Draft Guidelines do not meet this requirement.

### **3.4 The Guidelines should not contain inappropriate material**

24. In section 5 and Schedule 2 of this submission, ATCO Gas Australia reviews the proposed additional criteria set out in the Draft Guidelines and submits that they should be rejected.

25. The Draft Guidelines contain other material which does not properly belong in Guidelines under rule 87(14). In particular, ATCO Gas Australia submits that the material in section 2 of the Draft Guidelines (“The broad regulatory framework”) should be excluded.

26. Section 2 of the Draft Guidelines sets out a summary of the NGL’s history. However the summary contains a range of opinions regarding the history, nature and role of incentive regulation. It includes an incomplete assessment of the RPPs and other provisions of the NGL.

27. ATCO Gas Australia submits that the role and purpose of this material is unclear, which is likely to promote uncertainty and dispute. For this reason ATCO Gas Australia submits this material should be removed.

28. As a single example of the difficulties which can arise from this incomplete analysis, the Draft Guidelines purport to restate the NGL and NGR as a

<sup>3</sup> AEMC, Final Rule Determination, pp. 70-71.

<sup>4</sup> AEMC, Draft Rule Determination, [59].

“primary objective” and some “constraints”.<sup>5</sup> The “primary objective” is expressed as an incomplete restatement of the ARORO. In ATCO Gas Australia's view, it is inappropriate, unnecessary and potentially erroneous for the Draft Guidelines to seek to gloss or restate the statutory parameters under which the Guidelines are made. Similarly, the Draft Guidelines seek to articulate (as a “constraint”) the rationale which underpins the RPP in section 24(2), although the Draft Guidelines do not accurately state the RPP in question.<sup>6</sup> Further, an additional constraint of minimising transaction costs for the service provider and regulator is stated. It is not clear how these paragraphs have or will be taken into account in assessing whether the rate of return achieves the ARORO.

29. ATCO Gas Australia has not addressed each of the various assertions and opinions expressed in section 2 of the Draft Guidelines because it considers that this material does not properly form part of the Guidelines for the purposes of rule 87. To the extent that this material is retained or relied upon, ATCO Gas Australia would expect that its role and purpose in relation to achieving the ARORO would be articulated so that ATCO Gas Australia and other interested persons could properly respond to the material, and potentially make a further submission at a later time

### 3.5 The Guidelines should seek the best possible estimates

30. The rules require the best possible estimates to be used.<sup>7</sup> The AEMC was clear that this was also its intention for new rule 87.<sup>8</sup>
31. ATCO Gas Australia submits that this objective will not be achieved by narrowing the Authority's choices on return on equity to a single model with known limitations, as the Draft Guidelines currently propose. As the AEMC stated:

*“... estimates are more robust and reliable if they are based on a range of estimation methods, financial models, market data and other evidence.”<sup>9</sup>*

## 4. The Guidelines are to reflect a different approach to that under the previous rule

32. The changes to rule 87 were substantive.
33. The old rule prescribed the use of a “well accepted model” and referred to “the Capital Asset Pricing Model” as an example. The AEMC deliberately moved away from this language, indicating that:

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<sup>5</sup> Draft Guidelines, [24].

<sup>6</sup> Draft Guidelines, [24(b)] – the word “efficient” is added as a gloss to “service provider”, and the words “at least” are omitted. ATCO Gas Australia reserves its position on the speculated rationale.

<sup>7</sup> Rule 74 states that “[a] forecast or estimate ... must represent **the best forecast or estimate possible in the circumstances**” (emphasis added). Rules 87(6) and 87(8) both expressly require “estimation”.

<sup>8</sup> “... achieving the ... NGO, and the RPP requires the **best possible estimate** of the benchmark efficient financing costs. This can only be achieved by ensuring that the estimation process is of the **highest possible quality**.” AEMC, Draft Rule Determination, p. 46, emphasis added.

<sup>9</sup> AEMC, Draft Rule Determination, p. 48, emphasis added.

*“The rate of return estimation should not be formulaic and ... [should not be] driven by a single financial model or estimation method.”<sup>10</sup>*

34. The new rule expressly requires all relevant models etc to be considered, and focusses on the outcome – the achievement of the ARORO:

*“The final rule **introduces a new framework** for determining the rate of return. ...*

*... The final rule provides the regulator with ... discretion ... but also requires the consideration of **a range of** estimation methods, financial models, market data and other information **so that the best estimate of the rate of return can be obtained overall** ...”<sup>11</sup>*

35. These changes are deliberate and material, and the Authority must give them due weight in carrying out its requirements under rule 87.

36. ATCO Gas Australia has had its Access Arrangement revisions submission due date delayed significantly as a result of the comprehensive process undertaken by the AEMC in considering changes to rule 87. ATCO Gas Australia considers that the changed rules should make a significant impact on the requirements for its upcoming revisions to its Access Arrangement and therefore the delay was appropriate (and was clearly considered appropriate by the AEMC). However, this deferral seems difficult to reconcile with the largely unchanged approach in the Guidelines.

#### **4.1 The approach indicated by the Draft Guidelines should be different to the Authority’s current approach**

- (a) *The approach should have regard to multiple methods and information*

37. Rule 87(5)(a) expressly requires the Authority to form its judgment having regard to:

*“relevant estimation methods, financial models, market data and other evidence”<sup>12</sup>*

In ATCO Gas Australia's submission the use of plural language in this rule is deliberate and important. ATCO Gas Australia submits that in this context, the Guidelines should contain an approach that utilises a number of models etc.

38. The AEMC stated its intention:

*“The intention of [rule 87(5)] is that the **regulator must consider a range of sources of evidence and analysis** to estimate the rate of return. In addition, the regulator must **make a judgement in the context of the overall objective** as to the best method(s) and*

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<sup>12</sup> AEMC, Final Rule Determination, p. 66.rule 87(5)(a)

*information sources to use, including what weight to give to the different methods and information in making the estimate...*<sup>13</sup>

39. The use of multiple methods and information was explicitly anticipated. The AEMC went further, to expressly reject a single-model approach:

*“The Commission considered that [the Tribunal’s] conclusion presupposes the ability of a single model, by itself, to achieve all that is required by the objective. The Commission is of the view that any relevant evidence on estimation methods, **including that from a range of financial models**, should be considered to determine whether the overall rate of return objective is satisfied.”*<sup>14</sup>

- (b) Specifically, the Draft Guidelines’ singular focus on Sharpe-Lintner CAPM is inappropriate

40. The AEMC indicated that:

*“The rate of return estimation should not be formulaic and ... [should not be] driven by a single financial model or estimation method.”*<sup>15</sup>

41. More specifically, the AEMC said that: *“in the context of estimating the return on equity, the estimation should not be limited to the standard CAPM, but should consider other relevant evidence”*.<sup>16</sup>

42. In ATCO Gas Australia’s view, the AEMC’s statements clearly reinforce the conclusion that rule 87(6) necessarily requires the Authority to consider a range of methods, models, data and other evidence, *including* a range of asset pricing models, only one of which is the Sharpe-Lintner CAPM.

43. In contrast to the above, the Draft Guideline concludes that:

*“... the Sharpe-Lintner Capital Asset Pricing Model (**CAPM**) is the only model for determining the return on equity that meets [the] criteria for acceptability in the Australian context at the current time.”*<sup>17</sup>

44. ATCO Gas Australia submits that this conclusion contravenes the words of the rule and is inconsistent with the rule maker’s intentions, cited above.

45. Taken with the Draft Guidelines’ proposals for the Sharpe-Lintner CAPM’s input parameters,<sup>18</sup> the net effect is that the Draft Guidelines appear to propose no changes to the way the required return on equity was previously assessed under the old rule. ATCO Gas Australia submits that this is inconsistent with both the language of new rule 87 and the AEMC’s clearly expressed intention.

<sup>13</sup> AEMC, Final Rule Determination, p. 67.

<sup>14</sup> AEMC, Final Rule Determination, p. 49.

<sup>15</sup> AEMC, Draft Rule Determination, p. 47.

<sup>16</sup> AEMC, Draft Rule Determination, p. 47.

<sup>17</sup> Draft Guidelines, [77].

<sup>18</sup> In particular, the Authority proposes estimating: (a) the risk-free rate using the yield on five-year Commonwealth Government Securities, averaged over a 20-day period; (b) beta using regression analysis applied to historical returns for a very small sample of Australian firms; and (c) market risk premium by having regard to historical stock market returns, surveys, market commentary, and the practice of other Australian regulators.

(c) *The approach should involve an overall assessment against the ARORO*

46. The rules have also changed from an approach focussed on *inputs*, to one focussed on the *outcome* – namely, ensuring that the allowed rate of return achieves the ARORO. As the AEMC said:

*“[The new rule should] ...allow the regulator...to focus on whether the overall rate of return meets the ARORO, which is intended to be consistent with the... NGO and the RPP.”<sup>19</sup>*

47. Again, ATCO Gas Australia would expect to see the Guidelines reflecting this requirement to assess any proposed rate of return against the ARORO.

## **5. The proposed additional criteria should be rejected**

48. The Draft Guidelines propose 5 criteria with associated subcriteria (“**additional criteria**”)<sup>20</sup> which are to be used in addition to the NGL and NGR’s statutory requirements. ATCO Gas Australia submits that these additional criteria should be rejected.

### **5.1 The criteria set out in the NGL and NGR are sufficient**

49. It is true that under some statutes, it can be appropriate for an administrative decision-maker to adopt criteria to guide it in exercising a discretion.

50. However, the NGL and NGR, and especially rule 87, already contain detailed criteria<sup>21</sup> to aid transparency and explanations in the use of discretion. ATCO Gas Australia submits that the level of detail was purposeful to ensure sufficient guidance in undertaking the task. ATCO Gas Australia submits that the Authority is required to use the law and rules as its assessment criteria and focus on clearly explaining how its approach complies with the statute and achieves the ARORO, rather than attempting to create additional criteria.

### **5.2 The adoption of additional criteria in the present situation risks error**

51. ATCO Gas Australia submits that in the context of the detailed prescriptions in the NGL and NGR, any attempt to establish additional criteria risks error in two ways:

(a) First, to the extent that the additional criterion seeks to summarise or restate an existing statutory requirement, it is likely to embellish, misstate or gloss the statute, which is beyond the Guidelines’ power.

<sup>19</sup> AEMC, Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, Final Position Paper, 29 November 2012, Sydney, pp. 23-24.

<sup>20</sup> Draft Guidelines, [35]. The additional criteria are set out, and numbered for convenience, in footnote 115 at the beginning of Schedule 2.

<sup>21</sup> Mandatory criteria: s23 NGL; rule 87(2) and (3); rule 87(6) and (8). ‘Have regard to’ criteria: s24 NGL; rules 87(5), (7) and (11).

(The alternative is to restate the statute precisely, in which case the criterion adds nothing.)

- (b) Second, to the extent that an additional criterion is not a summary or restatement of a statutory provision, then it purports to be an additional requirement which will lead to material being included or (as is particularly so in the Draft Guidelines) excluded, when that inclusion or exclusion would not otherwise have occurred if only the statutory provisions had applied. This too will lead to administrative error. There is a further risk that the additional criteria may inadvertently be given primacy or additional weight over the statutory requirements, as appears to be the effect of the Draft Guidelines.

52. For these reasons, and in light of the extensive difficulties demonstrated in Schedule 2 with the additional criteria proposed in the Draft Guidelines, ATCO Gas Australia submits that the additional criteria should be discarded and no new ones adopted in their place. Rather, the Draft Guidelines should focus on the statutory task using the statutory criteria and only those criteria.

### **5.3 The additional criteria should not be used to assess relevance**

53. The Draft Guidelines indicate that the additional criteria may be used wherever the Authority needs to “exercise judgment”.<sup>22</sup>

54. ATCO Gas Australia is concerned that the Authority may be proposing to apply these additional criteria for purposes other than determining the content of the Guidelines. The Explanatory Statement suggests that one such other purpose may be determining whether methods and information are *relevant* for the purposes of rule 87.<sup>23</sup>

55. ATCO Gas Australia submits that the additional criteria are inappropriate in any event. However, ATCO Gas Australia submits that even if a method etc were to be excluded from the Guidelines based on use of the proposed additional criteria or any other criteria, it is clear that the method etc can still be *relevant* during a given access arrangement revision, including for the purpose of conducting reasonableness checks or determining whether or not to depart from the Guidelines.

### **5.4 The additional criteria are flawed, unclear, and inconsistent with the statutory requirements**

56. Many of the proposed additional criteria are drafted in a way that they cannot be readily applied consistently, and contain subjective adjectives which do not contribute to transparency. Schedule 2 presents a detailed textual and logical analysis of the proposed additional criteria which highlights that the content of the additional criteria is variously unclear, subjective and inconsistent with the NGL and NGR. ATCO Gas Australia submits that the Explanatory Statement does not adequately support the additional criteria.

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<sup>22</sup> Draft Guidelines, [33].

<sup>23</sup> “... any approach to estimating the return on equity would need to be broadly consistent with the [ADDITIONAL] criteria, in order to be considered relevant”: Explanatory Statement, [589].

57. Accordingly, ATCO Gas Australia submits that the additional criteria currently proposed in the Draft Guidelines should be rejected. In addition, for the reasons set out above and in Schedule 2 ATCO Gas Australia submits that at least in the specific case of rule 87, it is inappropriate and unnecessary for any additional criteria to be adopted.

## **5.5 The additional criteria are also used inconsistently and inappropriately**

58. Regardless of the criteria used (and ATCO Gas Australia submits that only the criteria in NGR should be relied upon), the use of criteria requires consistent and reasoned application. ATCO Gas Australia submits that in the Draft Guidelines and the Explanatory Statement the criteria have been applied inconsistently and with inadequate evidence or argument, leading to Draft Guidelines which do not comply with the NGL or NGR.
59. Thus, in ATCO Gas Australia's view, even if the flaws in the additional criteria are disregarded, the approach in the Draft Guidelines is flawed because it has been developed by a flawed application of the additional criteria.
60. The analysis undertaken in Schedule 2 demonstrates that:
- (a) the Sharpe-Lintner CAPM would itself fail the additional criteria in the same way as the methods and information which are proposed to be rejected;
  - (b) the methods and information which are proposed to be rejected would in some instances pass the additional criteria, especially if analysed in the same way as the Sharpe-Lintner CAPM;
  - (c) the additional criteria are sometimes applied with no apparent analysis or evidence; and
  - (d) the additional criteria are not applied consistently.

## **6. Analysis of the Draft Guidelines' proposed methods and information**

61. The primary task under rule 87 is to determine a rate of return that achieves the ARORO. The Guidelines are to reflect this focus.

### **6.1 Reasonableness checks**

62. The rules set out the approach that includes estimating the return on equity, the return on debt and the value of imputation credits. However, the rate of return objective requires that the overall rate of return is to be commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to the service provider in respect of the provision of services. In ATCO Gas Australia's view, this requires an overarching consideration of the outcome which should include reasonableness checks.

63. This view is consistent with the statements by the AEMC in its Final Determination:

*“Implicit in this requirement to consider a range of methods, models and information is that checks of reasonableness will be undertaken.”<sup>24</sup>*

(a) *The Draft Guidelines are silent on what reasonableness checks will be conducted*

64. The Explanatory Statement considered a number of reasonableness checks.<sup>25</sup> However, the Draft Guidelines state only that:

*“the Authority will consider appropriate tests of reasonableness for the outcomes of the WACC models or approaches”.*

65. In view of the obligation to determine a rate of return that achieves the ARORO, reasonableness checks for the outcomes of the WACC models and approaches will be critically important.

(b) *The reasonableness checks discussed (in the Explanatory Statement) must be properly applied*

66. In relation to the set of reasonableness checks that the Authority might apply, ATCO Gas Australia submits that:

- (a) transaction and trading multiples cannot be usefully employed as checks of the reasonableness of the allowed return on equity because those multiples depend on many factors, and there are many reasons why transaction and trading multiples may be above 1. It is not possible to isolate the effect of one factor (the allowed return on equity) without quantifying the effect of all of the other factors;
- (b) when considering broker WACC estimates, a regulator should consider that such estimates are created for the purpose of stimulating trading activity in a stock, not for determining an appropriate return. Moreover, the AER has noted that broker WACC estimates may suffer from “comparability issues,”<sup>26</sup> a lack of “detailed analysis and testing”<sup>27</sup> and other potential problems.<sup>28</sup> These issues must be considered when determining the weight to be applied to this evidence;
- (c) checking for reasonableness against other regulators’ decisions is unlikely to be useful or relevant, given that other regulators’ decisions will relate to different assets, different industries and applying different assessment (including different Guidelines). If a regulator checks for

<sup>24</sup> AEMC, Final Rule Determination, p. 69.

<sup>25</sup> Including transaction multiples, trading multiples, broker WACC estimates, decisions by other regulators and the relationship between the return on equity and the return on debt.

<sup>26</sup> AER Explanatory Statement, p. 55.

<sup>27</sup> AER Explanatory Statement, p. 67.

<sup>28</sup> AER Explanatory Statement, p. 200.

reasonableness against others' decisions regardless of those matters, the result is circular and unlikely to achieve the ARORO;<sup>29</sup>

- (d) ATCO Gas Australia agrees that "the return on equity should exceed the return on debt given that equity is more risky than debt."<sup>30</sup> However, ATCO Gas Australia does not agree that "In a particular market condition the return on equity may be significantly higher than the return on debt **and vice versa**."<sup>31</sup> ATCO Gas Australia's view is that there are *no* circumstances in which the required return on debt could be higher than the required return on equity in the same firm;
- (e) the Explanatory Statement includes "financeability and credit metrics"<sup>32</sup> in its list of potential reasonableness checks. The Draft Guidelines should provide further detail of those tests and how they may be used.

(c) *Relevant reasonableness checks have been inappropriately excluded (from the Explanatory Statement)*

(i) *Market practice*

67. In the Victorian Gas Distribution Review, the network service providers submitted a report that summarised the relevant practice documented in independent expert valuation reports.<sup>33</sup> The NSPs submitted that this was relevant evidence because:

- (a) the independent experts are required to be appropriately qualified and operate under a regime of statutory duties;
- (b) they are required to be unbiased and transparent; and
- (c) material sums of money have changed hands on the basis of these reports.

68. ATCO Gas Australia submits that these independent expert valuation reports are relevant evidence. For example, they can be used to determine whether the regulatory implementation of the Sharpe-Lintner CAPM is consistent with current market practice. This would be relevant to a consideration of whether the regulatory estimate was commensurate with the prevailing conditions in the market.

(ii) *Dividend yields of comparable firms*

69. In previous submissions to the Authority,<sup>34</sup> SFG has proposed that the allowed return on equity should be compared with the dividend yield that is currently available on comparable firms. The dividend yield on comparable firms is the

<sup>29</sup> As stated in the AEMC Final Rule Determination at p. 86: "It should remain open to the regulator and service providers to consider that different sectors and different kinds of service providers have different risk characteristics that lead to different characteristics for efficient debt financing."

<sup>30</sup> Explanatory Statement, [706].

<sup>31</sup> Explanatory Statement, [707].

<sup>32</sup> Explanatory Statement, [695].

<sup>33</sup> [Market Evidence on the Cost of Equity, Victorian Gas Access Arrangement Review, 2013-2017, 8 November 2012.](#)

<sup>34</sup> SFG Consulting, 2011, *The required return on equity commensurate with prevailing conditions in the market for funds: Response to Draft Decision*; SFG Consulting, 2011, *Response to the DBP Final Decision: Report prepared for DBP.*

return that investors would receive if those firms continued to pay their current level of dividends for the indefinite future. If there is any growth in those dividends (which there is, on average and over time) investors would receive a higher return. For this reason, SFG submitted that the current observable dividend yield on comparable firms should be treated as a lower bound on the allowed return on equity – if the allowed return on equity was set to 7% when investors could currently obtain an 8% return from comparable firms just from dividends alone, the allowed return could not be said to be commensurate with the prevailing conditions in the market for equity funds.

70. In its May 2011 and November 2011 submissions to the Authority, SFG stated that no forecasts of dividend yields were required at all. The analysis was based on the *currently observable* dividend yield. For example, the SFG report of November 2011 states that:

*“That is, one does not have to rely on **any** economic forecast at all. One can simply observe the **current** dividend yield. Our report of 17 May notes that:*

*‘...this statistic is directly observable and, accordingly, is not subject to any problems of estimation error that could affect any forecast.’<sup>35</sup>*

*Our report of 17 May then concludes that:*

*‘In summary, if an investor were to buy shares in one of the comparable firms, and if the firm simply maintained its current dividend – with no growth in dividends over time and with no increase in the stock price, ever – that investor would receive a return of 9.66% p.a. on average.’*

*This is materially higher than the 8.4% that is available to investors from dividends **and** capital gains **combined** under the Draft Decision...In our view, the fact that an investor can reasonably expect to receive a materially higher return from an investment in a comparable firm suggests that the allowed return in the Draft Decision is not commensurate with the prevailing conditions in the market.’<sup>36</sup>*

*As set out above, the Final Decision dismisses the analysis in our report of 17 May on the basis that economic forecasts “have a poor record.” However, our report of 17 May demonstrates that the point remains even if one uses **current observable** dividend yields such that **no forecasts are required whatsoever**. This point is not addressed at all in the Final Decision.”*

71. On the basis of the above, ATCO Gas Australia takes issue with the Authority’s position that the *currently observable* (i.e. not forecast) dividend yield is an unreliable forecast, and submits to the contrary.<sup>37</sup>

<sup>35</sup> SFG Report of 17 May 2011, [73].

<sup>36</sup> SFG Report of 17 May 2011, [75]-[76].

<sup>37</sup> Explanatory Statement, [690]-[692].

(iii) *Other relevant variables*

72. A number of economic variables<sup>38</sup> have been shown in the finance literature to be correlated with required returns on equity.<sup>39</sup> Accordingly, ATCO Gas Australia submits that these economic variables and other information are relevant under rule 87(5)(a) and that the Authority must have regard to them. From its recent statement that it will use these indicator variables to estimate the contemporaneous market risk premium, IPART indicates that it takes a similar view of relevance.<sup>40</sup>

(d) *The overall rate of return should enable the benchmark efficient firm to achieve the credit rating assumed*

73. ATCO Gas Australia considers that a reasonableness check can be undertaken to assess whether the service provider, adopting the regulator's assumptions, would be able to achieve a credit rating consistent with the credit rating assumed for the purpose of assessing the return on debt.

(e) *It is not possible to determine if and how reasonableness checks will be applied and when and how they will result in a revised rate of return*

74. The Draft Guidelines do not set out the approach to reasonableness checks. ATCO Gas Australia considers that the Draft Guidelines need to be revised to include reasonableness checks, and also need to indicate in some detail:

- (a) the reasonableness checks that will be implemented;
- (b) the point(s) in the process at which the reasonableness checks would be applied;
- (c) how to determine whether a proposed allowed return passes or fails each reasonableness check;
- (d) how many reasonableness checks would have to be violated before the allowed return is revised; and
- (e) how any such revision would occur.

## 6.2 Term of the WACC

75. The Draft Guidelines propose that the risk-free rate will be estimated as the 20-day average of the yield of 5-year Commonwealth Government Securities ("CGS").

76. ATCO Gas Australia submits that the use of a 20-day averaging period and CGS proxy may be an appropriate approach, but that a 10-year term to maturity should be adopted. The Authority must determine the risk-free rate of return having regard to the prevailing conditions in the market for equity

<sup>38</sup> Including the level of government bond yields, the slope of the term structure of interest rates, the spread between corporate and government bond yields, dividend yields and earnings yields.

<sup>39</sup> Supporting evidence on this point was provided to the AER as part of the VGDR. See, for example, [SFG \(2012\). The required return on equity: response to the AER Victorian Gas Draft Decisions, November.](#)

<sup>40</sup> IPART (2013), *WACC Methodology*, June, available at [this link](#).

funds. There are persuasive reasons for the Authority to adopt Commonwealth Government Securities with a 10-year term to maturity.

77. The AER recently concluded that it was:

*“more persuaded by the arguments for a 10 year term, than the arguments for a five year term.”<sup>41</sup>*

for reasons including the following:

- the Australian Competition Tribunal (“**Tribunal**”) has previously held that “10 years is the appropriate term;”<sup>42</sup>
- it is the convention of economists and regulators to use a relatively long-term risk free rate where the life of the assets is relatively long;<sup>43</sup>
- surveys suggest that the vast majority of market practitioners use a long-term risk-free rate with 10-years being the dominant term in Australia; and
- the NPV=0 argument that Associate Professor Lally has used to support the use of a term that matches the length of the regulatory period relies on the important assumption that there is a guarantee that the regulated asset can be sold for its RAB, but there is no such guarantee in reality.

78. ATCO Gas Australia agrees with the AER’s assessment of Associate Professor Lally’s work. In particular, the AER states that Lally’s conclusion that the term of the WACC should be set equal to the length of the regulatory period is the product of a strong assumption that is violated in practice. The AER cites the paper by Incenta (2013) as providing a further explanation of this point.<sup>44</sup> Moreover, Hall (2007)<sup>45</sup> also criticises Lally’s conclusion, noting that it would imply that the allowed regulatory return would change arbitrarily if the length of the regulatory period changed.

79. Under the new rule, the allowed return is required to be set to reflect the efficient financing costs of the efficient benchmark entity. All of the evidence (including that provided in the Explanatory Statement) suggests that comparable firms in practice adopt the financing practice of issuing long-term debt and equity securities; they do not adopt the practice of matching their financing practice to the length of the regulatory period. There is no reason to believe that this practice would change if the length of the regulatory period were to change. Moreover, in the absence of evidence to the contrary, ATCO Gas Australia submits that the consistently observed practice of actual market participants is evidence that matching the term to the regulatory period is not the only efficient practice.

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<sup>41</sup> AER Explanatory Statement, p. 181.

<sup>42</sup> AER Explanatory Statement, p. 181.

<sup>43</sup> AER Explanatory Statement, p. 181.

<sup>44</sup> [Energy Networks Association: Benchmark term of debt assumption.](#)

<sup>45</sup> Hall, J.L., ‘Comment on ‘Regulation and the term of the risk free rate: Implications of corporate debt’, Accounting Research Journal, 2007, 20 (2), pp. 81 – 86.

80. In a recent report submitted to the AER, SFG (2013) examined all independent expert valuation reports issued in 2012 and 2013 and reported that:

*“the independent expert evidence supports the use of a ten year term to maturity when estimating the risk-free rate:*

- a) *94% of the relevant reports adopted a 10-year term assumption; and*
- b) *The few reports that did not use a 10-year term assumption explained that the reason for not doing so was that they were adopting a term assumption that matched the lives of the assets being valued.”<sup>46</sup>*

81. ATCO Gas Australia considers that a 10 year term is efficient practice and therefore is consistent with achieving the ARORO.

### **6.3 Benchmark and compensation for risk**

82. A key concept in the ARORO is identifying a “benchmark efficient entity with a similar degree of risk as that which applies to the service provider in respect of the provision of reference services”.

(a) *The definition of the “benchmark efficient entity”*

83. ATCO Gas Australia does not oppose the proposed definition of the benchmark entity as a pure play regulated gas network business operating within Australia without parental ownership. However, for reasons set out below ATCO Gas Australia does oppose an interpretation that, having defined the benchmark efficient entity, that this limits the sources of relevant data and methods and information that can be considered in assessing efficient financing costs, risks and key parameters for the benchmark efficient entity.

84. ATCO Gas Australia submits that the question of which entity is established as the benchmark is not the same as the question of where the pool of comparator information and entities should be drawn from. At present the Draft Guidelines appear to conflate the two.

85. This may be contributed to by an inappropriate and incorrect emphasis on ‘consistency’ ATCO Gas Australia submits that consistency is a means to an end, where the end is NGO-compliance and ARORO-compliance. Consistency is not an end in itself and cannot be elevated to supplant the NGO or the ARORO.

86. The definition of efficient benchmark entity includes the same words that appear in the ARORO: “similar degree of risk as that which applies to the service provider in respect of the provision of reference services”. ATCO Gas Australia submits that these words recognise that, despite the implications of the term “benchmark”, the benchmark will not be static, but will be different for each access arrangement as the individual service provider’s risks are taken into consideration.

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<sup>46</sup> SFG, 2013, Evidence on the required return on equity from independent expert reports, 24 June.

87. The AEMC's comments in its Draft Rule Determination support this view as follows:

*"...in developing the characteristics of a benchmark efficient service provider, the regulator **considers the risk profile of the service provider** to determine whether the benchmark chosen is appropriate. Therefore, the attribute of focussing on a benchmark efficient service provider can incorporate the **consideration of the specific risks of a service provider** operating in a regulated environment."<sup>47</sup>*

88. ATCO Gas Australia notes though that the Draft Guidelines' definition of the benchmark efficient entity imports concepts that are not in the ARORO. ATCO Gas Australia submits that it would be inappropriate to use the definition to narrow the scope of relevant evidence to be considered, such as international data or data relating to regulated utilities other than pipeline companies. It is likely that there are international businesses or businesses operating non-gas networks that face a similar degree of risk as a service provider in Australia.

(b) *The Authority's approach to risk*

89. The Explanatory Statement identifies a number of steps to be taken in assessing risk:

*"... a first step is to identify the range of potential risks, and a second to classify whether those risks are potentially systematic or non-systematic.*

*A further step is to then assess whether the identified systematic risk is material to the investor, and whether the risk needs to be accounted for in the rate of return. The perspective of the investor is important, as the rate of return is the compensation required to induce the investor to supply capital to the firm."<sup>48</sup>*

(i) *Step 1: identify risks*

90. ATCO Gas Australia submits that it is correct to first identify what the actual or potential risks are facing the particular service provider.

(ii) *Step 2: classify risks*

91. ATCO Gas Australia submits that both the language of rule 87 and the AEMC's discussion makes it clear that the phrase "a similar degree of risk" is a reference to **all risks** faced by the service provider in providing reference services. Notwithstanding this, the Explanatory Statement appears to depart from the rules' requirements by limiting the consideration of risk to only systematic risk.<sup>49</sup>

92. ATCO Gas Australia submits that if rule 87 intended to exclude certain classes of risks from the definition of the ARORO, it would expressly differentiate those risks. It does not.

<sup>47</sup> AEMC, Draft Rule Determination, p. 45.

<sup>48</sup> Explanatory Statement, [222]-[223].

<sup>49</sup> Explanatory Statement, [215], [220].

93. Further, relevant information and material includes material from an entity with a similar degree of risk not necessarily the same degree of risk.
94. Step 3: materiality threshold
95. ATCO Gas Australia submits that the materiality threshold is not consistent with the NGR and should be discarded. The ARORO is clear in its terms – the task is to find a similar degree of risk.

(c) *Selection of comparator entities: comparability vs reliability*

96. To consider only entities that have the specific characteristics of the benchmark entity and the same risks would unnecessarily limit the number of comparable entities in Australia. This results in a tension between the comparability of firms meeting the Draft Guidelines' definition of an efficient benchmark firm, and the unreliability of a small data-set.
97. ATCO Gas Australia submits that where available data on entities that meet the Draft Guidelines' definition of "benchmark efficient entity" is limited or inadequate, it would be consistent with rule 87 to consider entities that are comparable or similar. Nevertheless, these comparable entities are relevant for determining the relevant parameter required by the rules.
98. To illustrate: Suppose one is seeking to establish the duration of a benchmark efficient Grand Slam tennis match in Australia. It would be possible to draw solely on match durations from the Australian Open, on the basis that those are the only direct comparators. However, if that yielded a data pool that was inadequately small, one might also defensibly draw on **international** data from Grand Slam events in other countries, in order to estimate the likely duration for this **Australian** match.<sup>50</sup>
99. Finally, the Draft Guidelines should set out how parameters will be adjusted for the identified risks.

## 6.4 Return on debt

100. ATCO Gas Australia does not consider that the Guidelines should limit the consideration of approaches to estimating the return on debt where alternative approaches may achieve ARORO for a given service provider, for example the trailing average approach.
101. ATCO Gas Australia has set out below concerns with the Guideline's approach in relation to the term of debt and the estimate of the debt risk premium.
- (a) *Term – Guidelines should set a 10 year term*
102. The issues relating to the term of debt are largely common to the term of the risk-free rate. The Explanatory Statement reports that the practice of the comparable firms examined is to issue debt with ten or more years to

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<sup>50</sup> The comparison would need to be done thoughtfully, considering whether there were factors which may cause matches to be longer or shorter in Australia, but absent evidence of such factors one would not hesitate to use data from, say, the US Open to supplement the inadequate data pool from Melbourne.

maturity.<sup>51</sup> It then notes that the efficient practice of these firms is to stagger their debt issuances over time such that the average remaining time to maturity is approximately six years.

103. The rate at which firms will borrow is set at the time of issuance in accordance with the term at issuance. This applies whether bonds are issued at a fixed rate (where the same rate applies over the entire life of the bond) or at a floating rate (where the premium to the reference rate, such as the swap rate, is fixed at the time of issuance). Thus, a 10-year term premium is built into the efficient financing costs of the benchmark efficient entity – to the extent that the set of comparable firms selected by the Authority reflects efficient financing practice. Consequently, an allowed return that reflects something other than the 10-year return premium would appear to be inconsistent with the ARORO.

(b) *Estimation of debt risk premium – Guidelines should have regard to the curve-fitting approach*

104. The Draft Guidelines state that the bond yield approach will be used to estimate the debt risk premium (“DRP”). That approach involves taking a (weighted) average of the yields of a number of bonds. The Explanatory Statement explored the possibility of fitting a curve through the yield estimates, but rejected that approach on the basis that it is more complex than taking an average and that (for a given set of data points) it produced results that were broadly consistent with the averaging approach.<sup>52</sup>

105. ATCO Gas Australia submits that there are at least three reasons for having regard to the curve-fitting approach under rule 87(5)(a):

(a) A curve provides an estimate of the yield for the relevant maturity (set to 5 years in the Draft Guideline). This is a more direct estimate of the relevant quantity than taking an average across yields with varying maturities. To see this, consider what happens when the sample of bonds changes. Suppose the curve suggests the yield for 2-year maturity is 6%. Also suppose that a number of new 2-year bonds enter the sample and that all of those bonds have a yield of 6%. The addition of those new bonds will not (materially) affect the curve-based estimate of the 5-year yield, but will affect the average-based estimate; That is, the Authority requires an estimate of the 5-year yield to maturity.<sup>53</sup> If a curve is produced, the 5-year point on that curve can be used as an estimate of the 5-year yield. If a weighted average is taken over the bonds in the sample, the resulting value will be an estimate of the yield for the weighted-average term to maturity of the bonds in the sample. If the sample changes (due to the inclusion or exclusion of some bonds), the weighted-average maturity will change and the estimate will be for a different maturity. That is, what is being estimated may be a 3-year yield in some determinations and a 6-year yield in others – depending upon the maturities of the bonds that happened to be in the sample at the time;

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<sup>51</sup> Explanatory Statement, p. 74.

<sup>52</sup> Explanatory Statement, Ch. 9.

<sup>53</sup> Note that ATCO submits that a 5-year term is inappropriate for the reasons set out above. However, if a 5-year term is to be used, that is what must be estimated.

- (b) If the Authority produces a curve, it can be compared and contrasted with the corresponding curves produced by commercial data service providers such as Bloomberg, which the Authority notes has a “reputation as the world’s leading service provider of financial data.”<sup>54</sup>. The extent to which the Draft Guidelines’ curve differs from the Bloomberg curve would be relevant evidence – the regulator would need to consider whether one or the other was more likely to reflect the current market conditions and explain the reasons why; and
- (c) A BBB curve can be compared with the corresponding A curve as a further check of reasonableness. For example, the BBB curve dropping below the A curve at any point would at least trigger the need for considering some analysis of the reasons why.

106. Finally, the Explanatory Statement concludes that:

*“Overall, the Authority is of the view that the bond-yield approach and its joint-weighting mechanism are likely to best meet the ARORO and requirements.”*<sup>55</sup>

107. This seems to imply that the Authority has effectively ranked different estimation approaches and selected the single top-ranked approach. ATCO Gas Australia considers that Bloomberg yield curve estimates are as relevant as yield estimates in the consideration of how best to achieve the ARORO.

## 6.5 Market risk premium

(a) *Guidelines are to indicate when and how a different MRP estimate might be made*

108. The Explanatory Statement notes that the Authority has used the below sources of information in its previous decisions, all of which have resulted in the MRP being set to 6%.

109. The rules require the Authority to determine a market risk premium having regard to the prevailing conditions in the market for equity funds. ATCO Gas Australia considers that the Authority is to outline the circumstances or changes in the information that might give rise to the Authority altering its estimate of the MRP. This would provide more clarity as to the approach the Authority uses to assess the information identified.

(b) *Evidence to be considered*

110. The Draft Guidelines indicate that the following sources of information will be considered when estimating of MRP:

- surveys of market practice;
- market commentary; and

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<sup>54</sup> Explanatory Statement, [553].

<sup>55</sup> Explanatory Statement, [538].

- the decisions of other Australian regulators.<sup>56</sup>

(i) *Surveys*

111. The Tribunal recently set out three conditions must be met for survey responses to be given any material consideration:

- the survey must be timely – there must have been no change in the prevailing conditions in the market for funds since the survey was administered;
- there must be clarity about precisely what respondents were asked so that there is no ambiguity about how to interpret their responses; and
- the survey must reflect the views of the market and not a sample that is small, unresponsive, or without sufficient expertise.<sup>57</sup>

112. It stated further that:

*“Surveys must be treated with great caution when being used in this context. Consideration must be given at least to the types of questions asked, the wording of those questions, the sample of respondents, the number of respondents, the number of non-respondents and the timing of the survey. Problems in any of these can lead to the survey results being largely valueless or potentially inaccurate.*

*When presented with survey evidence that contains a high number of non-respondents as well as a small number of respondents in the desired categories of expertise, it is dangerous for the AER to place any determinative weight on the results.”<sup>58</sup>*

113. ATCO Gas Australia agrees with the recent approach of the Tribunal in relation to surveys and considers that the Authority should ensure that no material weight is assigned to surveys that violate the conditions outlined by the Tribunal.

(ii) *Market commentary*

114. In relation to market commentary, the Tribunal has drawn a clear distinction between commentary on general economic forecasts and estimation of market risk premium, noting that no case has been made for quantitatively linking the two. The Tribunal has concluded that:

*“It is not appropriate for the AER to infer from generally positive economic forecasts conclusions as to the likely MRP. These reports are not intended to provide forecasts of equity returns. Further, the reports do not endeavour to address the extent of correlation between economic performance and equity risk. This correlation would need to be explicitly dealt with, either by the forecasting bodies, the AER or*

<sup>56</sup> Draft Guidelines, [79].

<sup>57</sup> Application by Envestra Ltd (No 2) [2012] ACompT 3.

<sup>58</sup> Application by Envestra Ltd (No 2), ACompT 3, [162]-[163].

*expert evidence, before these reports could be usefully or validly employed to assist in forecasting the MRP.*<sup>59</sup>

115. ATCO Gas Australia submits that the guidance set out by the Tribunal on the relationship between market commentary and the task of estimating MRP is relevant to the task of forecasting the MRP.

(iii) *Regulatory practice*

116. The Explanatory Statement recognises that:

*“The Authority agrees that there may be circularity in forming the view of an appropriate estimate of the MRP when decisions by other Australian regulators are referenced.”*<sup>60</sup>

117. ATCO Gas Australia considers that limited weight should be given to data affected by a circularity, to avoid double-counting (or over-weighting) that information.

(c) *Consideration of prevailing conditions in the market*

118. Much of the information that is to be relied upon when estimating MRP is dated.<sup>61</sup>

119. In view of rule 87(7), ATCO Gas Australia submits that the Guidelines must consider the extent to which the prevailing conditions in the market for equity funds at the time of the determination differ from the prevailing conditions in the market for equity funds at the time of the evidence. This would ensure that the evidence to be considered properly reflects the prevailing conditions in the market for equity funds and the weight to be afforded to that evidence.

(d) *Relationship between risk-free rate and MRP*

120. The Explanatory Statement states that:

*“The key concern raised by regulated businesses is that the MRP and risk free rate of return are negatively correlated. As such, any reduction in the risk free rate of return is offset by an increase in the MRP, leaving the estimate of a return on equity unchanged.”*<sup>62</sup>

121. This summary does not fully capture stakeholder submissions. Stakeholders do not suggest:

- that every decline in government bond yields will be exactly offset by a corresponding increase in the MRP, so that the expected return on the market remains unchanged; or
- that there is some mathematical formula to link government bond yields to MRP.

<sup>59</sup> Application by Envestra Ltd (No 2), ACompT 3, [158].

<sup>60</sup> Explanatory Statement, [732].

<sup>61</sup> For example, the set of potential evidence may include a regulatory determination from two years ago, a survey from five years ago, historical data from 100 years ago, and so on.

<sup>62</sup> Explanatory Statement, [755].

122. Stakeholders note that when government bond yields are at historical lows, maintaining a fixed 6% MRP estimate necessarily implies that the required return on equity for the average firm (market) is correspondingly at historical lows. ATCO Gas Australia considers that the new rules require the regulator to consider whether setting the required return on equity for the average firm to historical lows is commensurate with the prevailing conditions in the market for equity funds.
123. The Explanatory Statement addresses this question in two ways. First, it concludes that “the Authority is of the view that it is unclear that the current level of the risk-free rate is at an historical low.”<sup>63</sup> However government bond yields in the first half of 2013 are lower than at any time since World War II.<sup>64</sup> Consequently, an approach that adds a fixed 6% MRP to government bond yields implies that equity capital generally across the entire market is currently cheaper than at any time since WWII.<sup>65</sup>
124. The Explanatory Statement also discusses a series of flight-to-quality, cointegration and Granger causality tests that have been conducted, which, in ATCO Gas Australia’s view are of little relevance to the task of estimating the cost of equity.<sup>66</sup>
125. ATCO Gas Australia considers that:
- the Sharpe-Lintner CAPM requires an estimate of the expected return on the market (or, equivalently, the expected return on the average firm);
  - the previous practice of the Authority has been to estimate the expected return for the average firm by adding 6% to the contemporaneous government bond yield;
  - if that approach is used when government bond yields are at historical lows, it implies that the cost of equity capital generally is also at historical lows;
  - in such a case, the Authority should consider whether its conclusion that the cost of equity capital generally is also at historical lows is commensurate with the prevailing conditions in the market; and
  - in its consideration, the Authority should examine all evidence that is relevant to the question of whether the cost of equity capital is at historical lows.

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<sup>63</sup> Explanatory Statement, [794].

<sup>64</sup> See [RBA data](#).

<sup>65</sup> See, for example, Zenner and Junac, 2012, *Musings on low cost of debt and high risk premia*, J.P. Morgan, April, p. 3.

<sup>66</sup> The test in Appendix 13 is designed to determine whether the risk-free rate of return in Australia is too low [784]. ATCO does not argue that point and accepts the government bond yield as the estimate of the risk-free rate. The test in Appendix 14 has the purpose of providing “empirical evidence to examine whether the currently observed low level of risk-free rate may be explained by another factor...” [785]. The test in Appendix 15 is intended to determine whether CGS yields and market returns are statistically co-integrated over some historical period. The test in Appendix 16 is designed to determine whether (over some historical period) changes in the CGS yield cause changes in MRP or vice versa.

126. ATCO Gas Australia considers that the Guidelines must set out how the historically low government bond yield is used in estimating equity capital, and whether prevailing conditions in the market are commensurate with equity capital being, since the onset of the GFC, cheaper than at any time since WWII.

(e) *Use of independent expert valuation reports*

127. In the Victorian Gas Distribution Review, the NSPs submitted a report that summarised the relevant practice documented in independent expert valuation reports.<sup>67</sup> ATCO Gas Australia considers that the report submitted by the NSPs' is relevant evidence because:

- independent experts are required to be appropriately qualified and operate under a regime of statutory duties;

Accordingly, experts are required to have appropriate expertise, to conduct a thorough and detailed analysis and to fully explain their process and calculations, and are liable to professional sanctions for violation of these duties. The existence of these statutory duties increases the likelihood of a fair and reasonable valuation being produced.

- independent experts are required to be unbiased and transparent;

This is important because it means that valuation reports set out unbiased estimates (rather than advocacy estimates) in sufficient detail that the basis of the estimate can be well understood.

and

- material sums of money have changed hands on the basis of these reports.

This is important because it indicates that these reports have been accepted by and relied upon by the same sorts of debt and equity market participants that invest in regulated gas businesses.

128. These independent expert reports present, among other things, an estimate of the required return on the market in the prevailing conditions. In particular, the independent expert reports that perform a discounted cash flow valuation all set out their calculation of the relevant discount rate, or required return. This is, by definition, the expert's estimate of the required return that is appropriate as at the valuation date and therefore commensurate with the prevailing conditions in the market.

129. ATCO Gas Australia considers that the evidence of independent experts is relevant to the achievement of the rate of return objective.

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<sup>67</sup> [Market Evidence on the Cost of Equity, Victorian Gas Access Arrangement Review 2013-2017, 8 November 2012.](#)

(f) *Dividend growth models*

130. The Explanatory Statement notes that dividend growth models (“**DGM**”) can be used to estimate the required return on the market. These models are used extensively by regulators in the US. They are also used by Australian regulators (e.g., AER, IPART, and QCA) to inform their estimate of the required return on the market. The AER has recently decided that it will use a version of DGM to inform its estimate of MRP.<sup>68</sup>

131. The Explanatory Statement concludes that the DGM should not be used to inform the regulator’s estimate of the required return on the market (and consequently MRP) on the basis that some versions of the DGM have produced estimates of MRP that vary widely over time.<sup>69</sup> However:

- there are many versions of the DGM, some of which produce estimates of MRP that do not vary unreasonably over time;<sup>70</sup> and
- even if the DGM cannot be used to construct a point estimate of MRP, information about whether the current MRP is well above or well below the long-run average level would be relevant when the regulator considers whether its estimate (however it is produced) is commensurate with the prevailing conditions in the market.

For example, suppose that a regulator is considering evidence from a single version of the DGM that shows that required returns on equity are currently higher than at any time over the previous 30 years. Also suppose that (for whatever reason) the regulator decides not to rely on that DGM evidence when selecting a point estimate for the return on equity. Even when the DGM is not being relied upon to select a point estimate, the fact that it is indicating that required returns are well above average levels is still relevant evidence that should be taken into account. For example, this evidence would indicate that current conditions differ from average conditions, leading to higher required returns on equity. Such evidence may then be corroborated by other evidence suggesting that current required returns are higher than the historical average.

By analogy, suppose the task is to estimate the number of spectators at a football match. Suppose the average crowd is 30,000 with the stadium opening 3 of its 4 stands. Now suppose that during the current game, the crowd could not be accommodated in three stands and the fourth had to be opened. A crowd estimate based on a simple extrapolation from 30,000 to 40,000 is unlikely to be perfectly accurate and might be rejected. However, the fact that the fourth stand had to be opened is certainly relevant evidence, indicating that the crowd must be more than 30,000. Indeed this would be particularly relevant evidence if the alternate approach that was adopted to measure the crowd size produced an estimate of 30,000.

<sup>68</sup> AER Explanatory Statement, pp. 211-214.

<sup>69</sup> Explanatory Statement, [843].

<sup>70</sup> [SFG, \*Dividend discount model estimates of the cost of equity\*, 19 June 2013.](#)

## 6.6 Equity beta

132. The Authority is required to determine an equity beta having regard to the prevailing conditions in the market for equity funds. ATCO Gas Australia generally agrees with the Authority's conclusion that:

*"In ascribing a value to the equity beta, the Authority believes that primary reliance should be placed on statistical estimates of beta values for comparable businesses that are obtained empirically where available."*<sup>71</sup>

133. However, two issues arise:

- (a) the Draft Guideline<sup>72</sup> proposes that reliance will be placed only on the Authority's statistical estimates, which would appear to be inconsistent with the new rules which requires the consideration of broader material; and
- (b) the Authority's proposed approach to restrict the data set is unlikely to produce reliable estimates.

### (a) *A priori expectation*

134. By definition, an a priori expectation is an expectation prior to conducting any analysis. Some previous submissions to Australian regulators have argued that the appropriate a priori expectation for beta is one – the average beta across all firms.

135. However, the Authority:

*"...considers that the lower cash flow risk of regulated businesses results in a lower equity beta compared with the market, even with the observed higher gearing levels. The Authority does not agree that the appropriate a priori expectation of the equity beta for transmission and distribution businesses is at the market level of one."*<sup>73</sup>

136. ATCO Gas Australia considers that this conclusion by the Authority prior to the consideration of material and having regard to the prevailing market for equity funds is premature. If the authority has conducted analysis to reach this conclusion this should be provided, including an explanation of the conclusion that the "lower cash flow risk of regulated businesses" more than offset "the observed higher gearing".

### (b) *Comparable firms*

137. Table 16 of the Explanatory Statement sets out regulatory beta estimates for a number of different firms. ATCO Gas Australia is unable to determine how the information is relevant in the Authority's approach because:

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<sup>71</sup> Explanatory Statement, [855].

<sup>72</sup> Draft Guidelines, [80]-[81].

<sup>73</sup> Explanatory Statement, [854].

- the table includes telecommunications and water firms, which differ from the benchmark efficient firm in that the regulatory beta estimates adopted for telecommunications and water firms differ from the regulatory beta estimates adopted for gas transmission and distribution firms;
- the table includes beta estimates that are based on gearing other than the 60% assumptions that has been applied to network service providers (e.g., the telecommunications beta of 0.7 is based on only 40% gearing). An equity beta based on one level of gearing cannot be directly compared with an equity beta based on a different level of gearing; and
- the table includes beta estimates that result in the allowed return on equity being lower than the allowed return on debt.<sup>74</sup> ATCO Gas Australia submits that it is not plausible that investors in residual equity in a firm would require a lower return than that required by investors in prior-ranking investment grade debt in the same firm.

(c) *Estimation methods*

138. The Explanatory Statement indicates that a range of estimation methods are to be employed.<sup>75</sup> ATCO Gas Australia supports the consideration of a range of estimation methods, and notes that NGR 87(5) requires that regard must be given to all relevant estimation methods.

139. However, ATCO Gas Australia proposes that in considering the estimation methods that the following is acknowledged and addressed:

- SFG has demonstrated that LAD produces estimates that are systematically downwardly biased;<sup>76</sup>
- it is common for commercial data service providers to provide equity beta estimates that seek to statistically correct for known estimation biases in beta estimates;
- the beta estimation techniques of commercial data providers such as Bloomberg, Merrill Lynch and Value Line.

(b) *Properties of small sample estimates*

140. The Explanatory Statement sets out the Authority's estimates of equity beta for each firm using a range of estimation methods. The estimates range from 0.04 to 1.2. The average  $R^2$  statistic is 6%,<sup>77</sup> indicating that 94% of the variation in stock returns remains unexplained by the Authority's analysis. Moreover, the three companies with the lowest beta estimates (DUE, SKI, SPN) have an average  $R^2$  statistic of only 1%.

<sup>74</sup> see QCA (2012), p. 498.

<sup>75</sup> Explanatory Statement, [882].

<sup>76</sup> [Comparison of OLS and LAD regression techniques for estimating beta, 26 June 2013.](#)

<sup>77</sup> The average of the  $R^2$  statistics reported in Table 23 of the Explanatory Statement.

141. In a report submitted to the AER, Brooks, Diamond, Gray, and Hall (2013) show that beta estimates based on a small set of comparable firms are inherently unreliable.<sup>78</sup> Using such a small set of firms results in beta estimates that are highly volatile over time, implying that systematic risk regularly doubles over short periods. This is unlikely and implies that beta estimates obtained from a small sample of firms are unreliable estimates of true systematic risk.

142. The Explanatory Statement recognises the generally poor quality of beta estimates, proposing to address this issue by applying a number of different forms of regression analysis to the same small data set:

*“The issue of imprecision of the estimates is best addressed via the use of multiple models and techniques so that a wide range of estimates can be considered.”<sup>79</sup>*

143. However, the underlying problem is the size of the data set. Applying different forms of regression analysis to the same small data set may provide alternative values but does not address the problem that gives rise to the unreliability. Further, the different forms of regression analysis that the Authority has performed differ only in terms of how much weight they apply to each observation in the sample.<sup>80</sup> All of the estimates produced by the Authority are based on the same small sample of data and vary only as a result of the weights applied to each data point. For this reason, each value is not independent and does not corroborate the other values.

144. Rule 87(5)(a) requires that all relevant evidence be considered. In ATCO Gas Australia’s view, this requirement is not met by selecting a small subset of the evidence and applying different variations of statistical analysis to it.

*(c) Use of international data*

145. Table 17 of the Explanatory Statement sets out the firms that the Authority proposes to use to estimate beta. There are presently a total of five firms, and one of those firms is likely to shortly merge with another.

146. Having defined the benchmark firm to be Australian, the relevant task is to produce the best and most reliable estimate of its equity beta. The rules do not rule out the use of international data.

147. As noted above, Brooks, Diamond, Gray, and Hall (2013) show that beta estimates based on a small set of comparable firms are inherently unreliable.<sup>81</sup> They also show that beta estimates formed from a larger sample (such as would be available if international data is considered) are materially more stable and more reliable. Brooks et. al. set out their analysis and conclusion as follows:

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<sup>78</sup> [Brooks, Diamond, Gray and Hall \(2013\), Assessing the reliability of regression-based estimates of risk, Report prepared for the ENA, May.](#)

<sup>79</sup> Explanatory Statement, [877].

<sup>80</sup> The different forms of regression analysis apply different weight to different observations based on the extent to which they are considered to be outliers. The different samples and indexes apply different weight to different observations depending on whether they are included or excluded from the sample.

<sup>81</sup> Brooks, Diamond, Gray and Hall (2013), Assessing the reliability of regression-based estimates of risk, Report prepared for the ENA, May.

*“In this paper we measure the relationship between sample size and reliability, in the following two ways, considering both beta estimates from the Sharpe-Lintner and Black Capital Asset Pricing Models (“CAPMs”), and risk premium estimates from the Fama & French 3-factor model.*

*We measure the dispersion of risk estimates across different samples of firms from the same industry. This measures how different the estimate of risk would be purely from selection of a different set of firms of the same sample size. The greater this dispersion, the less reliable the risk estimates. We document that the dispersion of risk estimates is reduced by about 30% if sample size is increased from nine to 18 firms, and by about 50% if sample size is increased to 27 firms.*

*We measure the variation in risk estimates over time for the same sample of firms. For estimating the cost of capital it is important that, if the risk estimate is based upon historical data, it is reasonably stable over time. This holds even if the true risk is unchanged from one period to another and the regression-based estimate of risk precisely measures this risk. The reason for this is that the regression estimate is based entirely on historical data, so if there is a large degree of variation in the estimate over time (even if this does indeed measure the true risk), then the risk estimate will be of little use in predicting future risk. We document substantial variation in risk estimates over time, even for samples much larger than nine firms and even for sub-samples in which the initial risk estimates were closest amongst sample firms.*

*There are three clear implications of our findings:*

*Exclusive reliance on a small sample of just nine Australian-listed firms is very likely to lead to substantial estimation error;*

*The dispersion of risk estimates is reduced substantially as sample size is increased; and*

*With a larger sample of firms, there is variation in risk estimates across samples and over time. Therefore, any regression-based estimate of risk should not be used in isolation to estimate the cost of capital.<sup>82</sup>*

148. Estimates from a large sample are consistent with the fact that true systematic risk is unlikely to quickly double or halve.
149. ATCO Gas Australia considers that the role of the Authority under the rules is to consider the strengths and weaknesses of different data sets and to use data in a manner that produces an estimate of beta that results in an estimate of the required return on equity that is commensurate with the prevailing conditions in the market for equity funds and which best meets the ARORO.

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<sup>82</sup> Ibid., p. 4.

150. This requires the Authority to weigh up the comparability of the firms that it examines with the size of the sample and the reliability of the estimates. The Authority's approach of examining firms that engage in electricity transmission and distribution results in a data set that remains too small to produce reliable estimates.
151. ATCO Gas Australia considers that comparable firms could include US firms that are primarily engaged in operating regulated gas and electricity networks. There are more than 50 such firms which would provide a larger data set and would be more likely to produce a reliable estimate.
152. ATCO Gas Australia submits that it would be reasonable to give weight to the large and statistically reliable US data sample when Australian estimates of the relevant coefficients are statistically unreliable and that all of the relevant data should be used, weighted appropriately to reflect the comparability of the data and the statistical reliability of the estimates.<sup>83</sup>

*(d) A best estimate is required*

153. The Authority proposes that the allowed return on equity is to be estimated using only the Sharpe-Lintner CAPM. However, the Authority's task is to adopt the best beta estimate having regard to the prevailing conditions in the market for equity funds.<sup>84</sup> The Authority is required under the rules to consider whether the output is commensurate with evidence about required returns in the market and not a mechanistic statistical estimate.
154. Further, the Authority should consider whether the required return on equity that flows from that beta estimate is commensurate with evidence about required returns in the market. This requires that any relevant evidence about the required returns in the market must be considered as part of its task of estimating beta in achieving the ARORO.

## 6.7 Gamma

*(a) Estimation of theta*

155. The Draft Guidelines state that the Authority "considers that the dividend drop-off methodology is the most appropriate methodology for estimating theta" and that "the best way to estimate theta involves using a number of dividend drop-off studies so as to avoid problems that may arise if only one study is considered."<sup>85</sup>
156. Three dividend drop-off analyses are available for consideration:
- (a) The SFG study that was accepted by the Tribunal in the Gamma case;
  - (b) An updated study performed by SFG and recently submitted to the AER,<sup>86</sup> and

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<sup>83</sup> [Regression-based estimates of risk parameters for the benchmark firm, 24 June 2013.](#)

<sup>84</sup> Rules 87(7) and 74.

<sup>85</sup> Draft Guidelines, [89].

<sup>86</sup> SFG (2013), Updated dividend drop-off estimate of theta, 7 June 2013.

(c) A drop-off analysis performed by Authority staff.<sup>87</sup>

157. In relation to the original SFG study, the Tribunal observed that:

*“The Tribunal is satisfied that the procedures used to select and filter the data were appropriate and do not give rise to any significant bias in the results obtained from the analysis. Nor was that suggested by the AER. In respect of the model specification and estimation procedure, the Tribunal is persuaded by SFG’s reasoning in reaching its conclusions. Indeed, the careful scrutiny to which SFG’s report has been subjected, and SFG’s comprehensive response, gives the Tribunal confidence in those conclusions.”<sup>88</sup>*

158. The Tribunal went on to conclude that:

*“The Tribunal is satisfied that SFG’s March 2011 report is the best dividend drop-off study currently available for the purpose of estimating gamma in terms of the Rules.”<sup>89</sup>*

and:

*“The Tribunal finds itself in a position where it has one estimate of theta before it (the SFG’s March 2011 report value of 0.35) in which it has confidence, given the dividend drop-off methodology. No other dividend drop-off study estimate has any claims to be given weight vis-à-vis the SFG report value.”<sup>90</sup>*

159. The SFG study concluded that:

*“For the reasons set out in detail in this report, we conclude that the appropriate estimate of theta from the dividend drop-off analysis that we have performed is 0.35 and that this estimate is paired with an estimate of the value of cash dividends in the range of 0.85 to 0.90.”<sup>91</sup>*

160. The updated SFG study now concludes that:

*“the conclusions from that earlier study remain valid when tested against the updated data set.”<sup>92</sup>*

161. The Authority study largely confirms the results from the SFG studies. One exception is the slightly higher values for theta that are obtained when the standard market correction is not performed. The standard approach in dividend drop-off studies is to assume that, but for the dividend, the stock price would have followed the broad market. The Authority has not made this market adjustment. This implies that even though the market might be up or down 8% on the day, the stock in question would not have moved at all but for the dividend. ATCO Gas Australia considers that this outcome is not reasonable and is inconsistent with the rules.

<sup>87</sup> [Vo, Gellard and Mero, 2013, Estimating the Market Value of Franking Credits: Empirical Evidence from Australia.](#)

<sup>88</sup> Application by Energex Limited (Gamma) (No 5) [2011] ACompT 9 (12 May 2011), [22].

<sup>89</sup> Application by Energex Limited (Gamma) (No 5) [2011] ACompT 9 (12 May 2011), [29].

<sup>90</sup> Application by Energex Limited (Gamma) (No 5) [2011] ACompT 9 (12 May 2011), [38].

<sup>91</sup> SFG (2011), [3].

<sup>92</sup> SFG (2013), [6].

162. The Authority gives more weight to the non-standard results that assume stocks do not follow the broad market in any way. ATCO Gas Australia has been unable to determine why this is the case, particularly given that all drop-off studies (including the Authority's) have employed the market correction (which is not difficult to implement).

(b) *Framework issues*

163. The Explanatory Statement notes the evidence that it is standard market practice to make no adjustment to the discount rate or cash flows in relation to imputation credits.<sup>93</sup> In its recent study of independent expert reports, SFG (2013) concludes that:<sup>94</sup>

*“none of the independent expert valuation reports in the sample makes any adjustment for any assumed value of imputation credits.”*

164. The Explanatory Statement further notes that it has been previously argued, most notably by Associate Professor Handley, that whereas regulators

$$r_e^* = r_e \left[ \frac{1-T}{1-T(1-\gamma)} \right]$$

estimate the ex-imputation credit return on equity, by grossing up the estimate of MRP to include the assumed value of gamma and then reducing the grossed-up estimate by applying the term in square brackets above, market practitioners may be using a different approach that allows them to estimate the ex-imputation return on equity directly without the need to estimate gamma.

165. ATCO Gas Australia submits that there is insufficient information provided in relation to the Authority's estimation of the value of imputation credits.

## 7. Conclusion

166. Having regard to the matters set out in this submission, ATCO Gas Australia requests that the Authority revise the Draft Guidelines in light of the points raised, and with a view to ensuring that the Guidelines will:

- (a) allow the Authority to exercise its functions and powers “...in a manner that will or is likely to contribute to the achievement of the national gas objective”,<sup>95</sup>
- (b) allow the Authority to take into account the revenue and pricing principles,<sup>96</sup> and
- (c) assist the Authority at an access arrangement revision to determine a rate of return that achieves the ARORO.<sup>97</sup>

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<sup>93</sup> Explanatory Statement, Section 14.5.4.

<sup>94</sup> SFG (2013), Evidence on the required return on equity from independent expert reports, 24 June, [97].

<sup>95</sup> Section 28(1).

<sup>96</sup> Section 28(2)(a).

<sup>97</sup> Rule 87(2).

# Schedule 1

## Background to the rule 87 changes

### 1. Previous Rules

1. The previous version of the NGR stated that:

*“The rate of return on capital is to be commensurate with prevailing conditions in the market for funds and the risk involved in providing the Reference Service.”<sup>98</sup>*

and that:

*“In determining a rate of return on capital:*

- (a) *it will be assumed that the service provider:*
  - (i) *meets benchmark levels of efficiency; and*
  - (ii) *uses a financing structure that meets benchmark standards as to gearing and other financial parameters for a going concern and reflects in other respects best practice; and*
- (b) *a well accepted approach that incorporates the cost of equity and debt, such as the Weighted Average Cost of Capital, is to be used; and a well accepted financial model, such as the Capital Asset Pricing Model, is to be used.”<sup>99</sup>*

### 2. ATCO Gas and DBP Tribunal cases

2. In the *ATCO Gas* and *DBP* cases<sup>100</sup> before the Tribunal, the Applicants argued that a well-accepted financial model such as the Sharpe-Lintner CAPM must be used under 87(2), but that the resulting rate of return on capital must then be tested against any relevant evidence to ensure that it is commensurate with the prevailing conditions in the market for funds. They argued that the output from a financial model (conditional on a particular set of parameters that are known to be difficult to estimate) should not be mechanically adopted if there is evidence that the resulting output is not commensurate with prevailing conditions in the market for funds. They argued that the resulting output may be inconsistent with prevailing conditions in the market either due to mis-estimation of one or more input parameters, or due to inadequacies of the model itself.
3. The Applicants further argued that using a CAPM-WACC framework does not, of itself, guarantee an outcome that is commensurate with the prevailing conditions in the market and does not relieve the regulator from its obligations under rule 87(1). For example, if extreme parameter values were selected so

<sup>98</sup> National Gas Rules Version 2, Rule 87 (1).

<sup>99</sup> National Gas Rules Version 2, Rule 87 (2).

<sup>100</sup> *Application by WA Gas Networks Pty Ltd (No 3)* [2012] ACompT 12; *Application by DBNGP (WA) Transmission Pty Ltd (No 3)* [2012] ACompT 14.

that the resulting allowed return was 0% or 50% p.a., it is presumably not open to the regulator to argue that the outcome is automatically consistent with the rules simply because the CAPM-WACC model was used. If this were the case, 87(1) would serve no purpose at all.

4. However, in *ATCO Gas* and *DBP*, the Tribunal interpreted rule 87 as providing that a well-accepted financial model that is populated with appropriate parameter inputs *does* automatically satisfy 87(1). Specifically, the Tribunal held that:

*“implicit (or explicit) criticisms of modelling... must be minimised, if not negated, by the requirement that the approach and the model used must be well accepted by those who undertake and use such approaches and models for that purpose...it is almost inherently contradictory then to say that the approach or the model is not likely to produce a reliable output - assuming that the inputs are appropriate – if that approach and that model are well accepted.”*<sup>101</sup>

### 3. AEMC rule changes

5. In November 2012, the Australian Energy Market Commission (“**AEMC**”) revised the NGR. In relation to the required return on equity, the new rules require that the allowed rate of return must achieve the allowed rate of return objective (“**ARORO**”), which:

*“... is that the rate of return for a [Service Provider] is to be commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to the [Service Provider] in respect of the provision of [services].”*<sup>102</sup>

6. In applying the above objective, regard must be had to:

- “1. *relevant estimation methods, financial models, market data and other evidence;*
2. *the desirability of using an approach that leads to the consistent application of any estimates of financial parameters that are relevant to the estimates of, and that are common to, the return on equity and the return on debt; and*
3. *any interrelationships between estimates of financial parameters that are relevant to the estimates of the return on equity and the return on debt.”*<sup>103</sup>

7. When determining the allowed return on equity regard must also be had to:

*“the prevailing conditions in the market for equity funds.”*<sup>104</sup>

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<sup>101</sup> *Application by WA Gas Networks Pty Ltd (No 3)* [2012] ACompT 12, [63]; *Application by DBNGP (WA) Transmission Pty Ltd (No 3)* [2012] ACompT 14, [84].

<sup>102</sup> Rule 87(3).

<sup>103</sup> For example, see Rule 87(2)(5).

<sup>104</sup> For example, see Rule 87(2)(7).

8. In its Final Determination, the AEMC was very clear about its intention that the allowed rate of return should not be estimated in the manner set out in *ATCO Gas and DBP*:

*“The Commission was not convinced that the existing NGR rate of return framework would best meet its proposed approach in light of the recent decisions of the Tribunal in the ATCO Gas and DBP merits reviews and their implications for how the Commission intends its framework to be interpreted.*

*In both the ATCO Gas and DBP cases, the Tribunal rejected the contention of the applicants that giving primary emphasis to rule 87(1) would reflect the NGO and the RPP. Such a conclusion does not reflect the approach of the Commission to determining an appropriate rate of return. The Commission considers that the primary consideration should be whether or not the overall allowed rate of return reflects benchmark efficient financing costs. A focus on the overall estimate of the rate of return is the key objective of the new framework.”<sup>105</sup>*

9. In its Final Determination, the AEMC was also very clear about its intention that the regulator should not use a narrow formulaic approach, but should have regard to all relevant evidence while keeping a focus on the reasonableness of the allowed return on equity. For example, the AEMC noted that:

*“The Commission also expressed concern that the provisions create the potential for the regulator and/ or appeal body to interpret that the best way to estimate the allowed rate of return is by using a relatively formulaic approach. This may result in it not considering the relevance of a broad range of evidence, and may lead to an undue focus on individual parameter values rather than the overall rate of return estimate.”<sup>106</sup>*

and that the rule changes were designed to:

*“encourage the regulator to focus on whether its overall estimate of the rate of return is appropriate.”<sup>107</sup>*

10. The AEMC was also very clear about the need to ensure that the allowed return on equity is commensurate with the prevailing conditions in the market for equity funds. The AEMC stated that:

*“If the allowed rate of return is not determined with regard to the prevailing market conditions, it will either be above or below the return that is required by capital market investors at the time of the determination. The Commission was of the view that neither of these outcomes is efficient nor in the long term interest of energy consumers.”<sup>108</sup>*

<sup>105</sup> AEMC, Final Rule Determination, p. 48.

<sup>106</sup> AEMC, Final Rule Determination, p. 40.

<sup>107</sup> AEMC, Final Rule Determination, p. 41.

<sup>108</sup> AEMC, Final Rule Determination, p. 44.

and:

*“The second principal requirement is that the return on equity must take into account the prevailing conditions in the market for equity funds. It reflects the importance of estimating a return on equity that is sufficient to allow efficient investment in, and efficient use of, the relevant services. However, this requirement does not mean that the regulator is restricted from considering historical data in generating its estimate of the required return on equity. Rather, it ensures that current market conditions are fully reflected in such estimates to ensure that allowed rates are sufficient for efficient investment and use.”<sup>109</sup>*

11. The AEMC also noted that for a framework to produce an allowed return on equity that is commensurate with the prevailing conditions in the market for equity funds, it must be flexible enough to respond to changes in financial market conditions. One of the AEMC’s primary concerns was that the mechanistic Sharpe-Lintner CAPM approach was “inherently rigid” such that the AER’s implementation of the Sharpe-Lintner CAPM produced unreasonable results in the current market circumstances. The AER stated that:

*“The global financial crisis and its continuing impact through the European sovereign debt crisis have highlighted the inherent dangers in an overly rigid approach to estimating a rate of return in unstable market conditions.”<sup>110</sup>*

and that its rule change would:

*“enable the regulator to better respond to changing financial market conditions.”<sup>111</sup>*

12. In its Final Determination guidance, the AEMC sought to address concerns that, despite its best efforts in making material changes to the rules, the regulator would seek to continue to estimate the required return on equity via a mechanistic implementation of the Sharpe-Lintner CAPM. The AEMC sought to assuage these concerns, but indicated that it would not set out a list of what other information and models the regulator should consider, due to the risk that any such list *itself* would be applied in a mechanistic fashion:

*“A major concern expressed in numerous submissions is that under the proposed changes the regulator would still be able to, in effect, make exclusive use of the CAPM when estimating a rate of return on equity. The Commission understands this concern is potentially of considerable importance given its intention is to ensure that the regulator takes relevant estimation methods, models, market data and other evidence into account when estimating the required rate of return on equity. As discussed above, the Commission takes the view that the balance between flexibility and prescription has been adequately achieved in the final rules. It would be counterproductive to attempt to prescribe a list of models and evidence, which would*

<sup>109</sup> AEMC, Final Rule Determination, p. 69.

<sup>110</sup> AEMC, Final Rule Determination, p. 40.

<sup>111</sup> AEMC, Final Rule Determination, p. 23.

*almost certainly be non-exhaustive and could lead to rigid adherence to them in a mechanistic fashion.”<sup>112</sup>*

13. Rather:

*“To determine the rate of return, the regulator is also required to have regard [to] relevant estimation methods, financial models, market data and other evidence. The intention of this clause of the final rule is that the regulator must consider a range of sources of evidence and analysis to estimate the rate of return. In addition, the regulator must make a judgement in the context of the overall objective as to the best method(s) and information sources to use, including what weight to give to the different methods and information in making the estimate. In doing so, the regulator should also have regard to taking an internally consistent approach and, to the greatest extent possible, use consistent estimates of values that are common across the process, as well as properly respecting any inter-relationships between values used.”<sup>113</sup>*

and

*“Implicit in this requirement to consider a range of methods, models and information is that checks of reasonableness will be undertaken.”<sup>114</sup>*

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<sup>112</sup> AEMC, Final Rule Determination, p. 57.

<sup>113</sup> AEMC, Final Rule Determination, pp. 67-68.

<sup>114</sup> AEMC, Final Rule Determination, p. 69.

## Schedule 2

### Analysis of proposed additional criteria<sup>115</sup>

1. Under some statutes it can be appropriate for an administrative decision-maker to adopt criteria to guide it in exercising a discretion.
2. However, the NGL and NGR, and especially rule 87, already contain detailed criteria to aid transparency and explanations in the use of discretion. These should be used as assessment criteria, rather than attempting to create additional criteria.
3. In the context of the detailed prescriptions in the NGL and NGR, any attempt to establish additional criteria risks error in two ways:
  - (a) First, to the extent that the additional criterion seeks to summarise or restate an existing statutory requirement, it is likely to embellish, misstate or gloss the statute, which is beyond the Guidelines' power. (The alternative is to restate the statute precisely, in which case the criterion adds nothing.)
  - (b) Second, to the extent that an additional criterion is not a summary or restatement of a statutory provision, then it purports to be an additional requirement which will lead to material being included or (as is particularly so in the Draft Guidelines) excluded, when that inclusion or exclusion would not otherwise have occurred if only the statutory provisions had applied. This too will lead to administrative error. There is a further risk that the additional criterion may inadvertently be given primacy or additional weight over the statutory requirements, as appears to have happened in the Draft Guidelines.

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<sup>115</sup> Renumbered for convenience, the additional criteria from the Draft Guidelines at [35] would appear as follows:

1. *“driven by economic principles;*
  - (a) *based on a strong theoretical foundation, informed by empirical analysis;*
2. *fit for purpose;*
  - (a) *able to perform well in estimating the cost of debt and the cost of equity over the regulatory years of the access arrangement period;*
3. *implemented in accordance with best practice;*
  - (a) *supported by robust, transparent and replicable analysis that is derived from available, credible datasets;*
  - (b) *based on quantitative modelling that is sufficiently robust as to not be unduly sensitive to small changes in the input data;*
  - (c) *based on quantitative modelling which avoids arbitrary filtering or adjustment of data, which does not have a sound rationale;*
4. *capable of reflecting changes in market conditions and able to incorporate new information as it becomes available;*
5. *supportive of specific regulatory aims; and thereby:*
  - (a) *recognise the desirability of consistent approaches to regulation across industries, so as to promote economic efficiency;*
  - (b) *seek to achieve rates of return that would be consistent with the outcomes of efficient, competitive markets;*
  - (c) *ensure that the net present value of returns is sufficient to cover a service providers' efficient expenditures (the 'NPV=0' condition);*
  - (d) *provide incentives to finance efficiently;*
  - (e) *promote simple approaches over complex approaches where appropriate;*
  - (f) *promote reasoned, predictable and transparent decision making;*
  - (g) *enhance the credibility and acceptability of a decision.”*

4. This Schedule outlines the difficulties with the additional criteria proposed in the Draft Guidelines.

## General observations

5. At first blush, many of the proposed additional criteria contain concepts which appear appropriate and desirable. However, when considered in more detail each additional criterion can prove to be problematic. ATCO Gas Australia believes there is a real risk that the proposed additional criteria might inadvertently lead to error.

*There appears to be a further criterion, being the “threshold of adequacy”*

6. The Explanatory Statement indicates that a methodology must meet a “threshold of adequacy to be considered appropriate”, after which it may meet the additional criteria to varying degrees.<sup>116</sup> The “threshold of adequacy” is not explained in the Draft Guidelines or Explanatory Statement and is not referred to in the rules. ATCO Gas Australia submits that if this further additional criterion were to be used to reject methods and information, it would need transparent exposition and discussion.
7. However ATCO Gas Australia submits that this criterion is unnecessary. ATCO Gas Australia submits that any assessment of whether material is “adequate” (to the extent such assessment is required by the NGL or NGR) should be clearly linked to the requirements of the rules and not by reference to any other additional criterion. The exclusion of material for reasons not linked to the requirements of the rules may result in error.

*Relationship between head criteria and subcriteria*

8. With several of the criteria, the intended relationship and hierarchy is unclear between the criterion and the subcriterion. In some cases the subcriteria appear to further narrow the considerations compared to the criterion (as in ‘driven by economic principles’ and the subcriterion ‘based on strong theoretical foundation information by empirical analysis’) and in other cases they appear to introduce additional criteria (as in ‘supportive of specific regulatory aims’ and the subcriterion ‘promote simple approaches over complex approaches’). In application, the Authority appears to utilise different aspects of the various criteria and subcriteria at different times. This makes it difficult to address any criterion effectively, and in ATCO Gas Australia’s submission demonstrates the additional criteria’s unsuitability and inconsistency with the rules.

## Analysing the content of the additional criteria

*Criterion 1: “Driven by economic principles”.*

9. ATCO Gas Australia is concerned that on close scrutiny criterion 1 is somewhat difficult to construe and apply.

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<sup>116</sup> Explanatory Statement, [62].

10. At the outset, ATCO Gas Australia submits that it is unclear when a method is “driven” by economic principles. The use of the word “driven” is unusual in this instance and somewhat unclear.
11. The Authority states:
- “Economic theory provides important insights relating to conditions for the achievement [of] economic efficiency, including for the setting of revenue and prices for monopoly networks. Economic theory has also demonstrated how economically efficient outcomes are in the long term interests of consumers. Hence this criteria was intended to draw on these theoretical insights to maximise the likelihood that regulatory outcomes would be consistent with economic efficiency, and thus would best meet the NGO.”<sup>117</sup>*
12. ATCO Gas Australia understands the Authority’s thesis to be that because the NGO refers to efficiency, and because (it is asserted) economic theory links economic efficiency to the long term interests of consumers, an additional criterion which looks at economic theory is likely to contribute to the NGO. ATCO Gas Australia respectfully submits that this line of reasoning reverses the logic. ATCO Gas Australia submits that the task under the NGL is to contribute to the achievement of the NGO. The test for whether a given economic theory should or should not be used is the extent to which it does or does not contribute to that goal, not vice versa. The use of this criterion in the Draft Guidelines shows that it is predominantly intended to place an emphasis on theory.<sup>118</sup> ATCO Gas Australia submits that the NGR does not refer to theory and does not express a preference for theoretical estimation methods and financial models on the one hand over market data and other evidence on the other.<sup>119</sup>
13. Elevating the use of theoretical insights to the level of an additional criterion (which effectively operates as a hurdle that any method etc must pass) is inconsistent with the requirements of rule 87 and risks leading the Authority into error.
14. Although the Explanatory Statement asserts that:
- “Economic principles can be considered to be based on the established scientific method of observation, theory and empirical testing.”<sup>120</sup>*
- the words of Criterion 1 and its subcriterion focus predominantly on whether a given method etc has a strong theoretical foundation. This is problematic, as there may be models which in the Authority’s view lack “strong” theoretical foundations, but which nevertheless can usefully inform the determination of the allowed rate of return under rule 87.
15. Furthermore, ATCO Gas Australia submits that the Explanatory Statement does not appear to apply an entirely objective approach to assessing

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<sup>117</sup> Explanatory Statement, App.3, [11]. In fact, the Authority’s intention as set out in this passage is not actually reflected in the chosen words of the criterion and subcriterion, which are descriptive without effectively communicating that intention.

<sup>119</sup> Rule 87(5)(a).

<sup>120</sup> Explanatory Statement, App.3, [12].

theoretical foundation. For example, the standard graduate textbook of Huang and Litzenberger (1988) shows that every efficient portfolio (such as  $p$  in the figure below) has a matching zero-beta (or zero-covariance) portfolio, which can be found by drawing a tangent down to the vertical axis.<sup>121</sup> The existence of a matching zero-beta portfolio is therefore a key step in the derivation of both the Black CAPM and the SL CAPM.<sup>122</sup> This criterion is therefore not capable of differentiating between the two models, and so would not be a valid basis for rejecting the former model but accepting the latter.

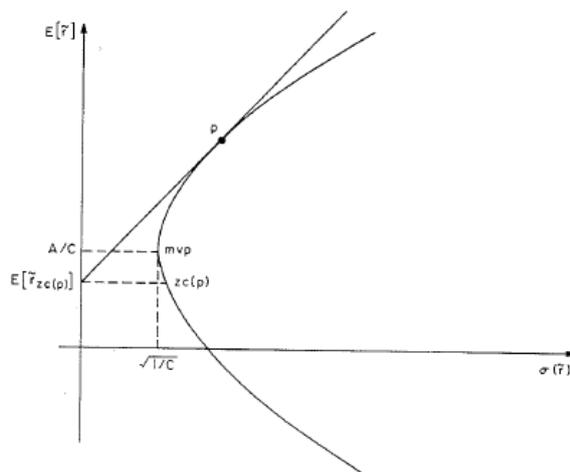


Figure 3.15.1: The Location of a Zero Covariance Portfolio in the  $\sigma(\tilde{r})-E[\tilde{r}]$  Space

16. The Explanatory Statement also appears to suggest that the existence of a zero beta premium is illogical<sup>123</sup> by pointing to an “arbitrage opportunity available between the CGS bonds (which proxy for the risk-free rate) and the zero-beta portfolio”.<sup>124</sup> However, no arbitrage opportunity is available; the Black CAPM was developed to reflect the fact that, in the real world, investors cannot borrow at the risk-free rate.<sup>125</sup> Accordingly, there is no arbitrage opportunity, such that a zero beta premium exists.<sup>126</sup>
17. In respect of subcriterion 1(a), the Explanatory Statement concludes that a method etc. is “informed by empirical analysis” if its key parameters are based on available data<sup>127</sup> but gives no further guidance as to the meaning of “informed by empirical analysis”. ATCO Gas Australia submits that this proposed subcriterion adds nothing to the requirements of rule 87(5), to have

<sup>121</sup> Every textbook that addresses the mathematics of the efficient frontier and the derivation of the CAPM contains a similar figure making the same point, which has become known in the literature as the two-fund separation theorem. ATCO Gas Australia can provide further examples if the Authority has any doubt on this point.

<sup>122</sup> See, for example, Huang, C-F. and R. H. Litzenberger, 1988, *Foundations of Financial Economics*, North-Holland, New York, Section 4.11; Black, F. 1972, *Capital Market Equilibrium with restricted borrowing*, *Journal of Business*, 45, pp. 444-454, and Lintner, J., 1969, “The aggregation of investors’ diverse judgments and preferences in purely competitive markets”, *Journal of Financial and Quantitative Analysis*, 4, pp. 346-382.

<sup>123</sup> Empirical estimates generally suggest that the zero beta return is above the CGS yield (i.e., there is a zero beta premium. See, for example, [NERA \(2013\)](#) and the references therein.

<sup>124</sup> Explanatory Statement, [615], being that investors could borrow at the risk-free rate and invest in the zero beta portfolio, capturing an arbitrage profit with no risk on zero net investment.

<sup>125</sup> See, for example, Black, F. 1972, *Capital Market Equilibrium with restricted borrowing*, *Journal of Business*, 45, pp. 444-454.

<sup>126</sup> It is only the Sharpe-Lintner CAPM that assumes that investors can borrow or lend as much as they like at the risk-free rate. Logically, only one set of assumptions can apply to a single market at a single point in time. Either the Black CAPM assumptions are assumed to apply (in which case investors cannot borrow at the risk-free rate) or the Sharpe-Lintner CAPM assumptions apply in which case the zero-beta asset and the risk-free asset are one and the same.

<sup>127</sup> Explanatory Statement, [597].

regard (among other things) to market data and other evidence, and so should not be used. Alternatively, to the extent that it is a restatement in different terms or with a different emphasis and hence is inconsistent with rule 87(5), ATCO Gas Australia would submit that it should be rejected because it risks leading the Authority into error.

18. Subcriterion 1(a) appears to discourage the use of empirical information, except for populating theoretical models. For example, the Explanatory Statement contended that:

*“... while good empirical performance is desirable, it is unlikely to provide for a strong criterion on its own. This inference reflects the need to avoid the pitfalls of data mining, and the potential for outcomes that are removed from the objective of economic efficiency.”<sup>128</sup>*

19. However, in ATCO Gas Australia’s submission this passage does not support a conclusion that all empirical analysis must be rejected in order to avoid the discrete risk of data mining. Further, the assertion (with which ATCO Gas Australia respectfully disagrees) that good empirical performance is linked to an increased risk of economically inefficient outcomes does not appear to be supported by evidence

20. The Explanatory Statement also asserts that:

*“... the reference to ‘economic’ principles is important, as it relates to the achievement of efficiency, as set out above. It is less likely that other methods – that are not grounded in the concept of economic efficiency – would necessarily be as effective in achieving the NGO.”<sup>129</sup>*

21. ATCO Gas Australia has two comments on this statement:

- (a) First, the Explanatory Statement does not explain why or how a bare reference in a criterion to a “principle”, of itself, will be “relate[d] to the achievement of efficiency”; and
- (b) Second, the Explanatory Statement does not explain why methods which are not “grounded in the concept of economic efficiency” would not “necessarily be as effective in achieving the NGO”.

22. These two opinions set out in an additional criterion again have the potential to divert the Authority from its statutory task of determining a rate of return that achieves the ARORO. In this respect, empirical data and analysis ought to make a significant contribution to determining a rate of return that is “commensurate” under rule 87(3). This criterion’s emphasis on theory over empirical analysis does not appear to be supported or required by the NGR.

### *Criterion 2 “Fit for purpose”.*

23. This additional criterion is critical because it tends to emerge as one of the Explanatory Statement’s key reasons for the rejection of methods and

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<sup>128</sup> Explanatory Statement, App.3, [17].

<sup>129</sup> Explanatory Statement, App.3, [15].

information for estimating the return on equity, other than the Sharpe-Lintner CAPM.

24. ATCO Gas Australia submits that the Explanatory Statement's discussion and explanation of this criterion is somewhat circular.
25. The criterion itself provides little guidance. ATCO Gas Australia submits that if an additional criterion is to be adopted, it should be transparent and consistent with the rules. A reader should be able to ascertain what the criterion means and how it will guide the regulator's decision-making. ATCO Gas Australia submits that this criterion adds nothing, because it gives no guidance on how methods and information may be differentiated in any replicable, transparent way.
26. Subcriterion 2(a)<sup>130</sup> indicates that "fit for purpose" means "able to perform well" at the required task.<sup>131</sup> Unfortunately there is no further explanation about what constitutes "performing well" or how it is measured. ATCO Gas Australia submits that defining "fit for purpose" as meaning "performs well" is somewhat circular.
27. ATCO Gas Australia submits that the Explanatory Statement repeats this analysis without advancing it, when it states that the best performing model will be the one most fit for purpose.<sup>132</sup> This language appears to contemplate that there is a single right answer, whereas ATCO Gas Australia's submission (discussed earlier in this submission) is that the search for the "best" or "most fit for purpose" method etc should not lead a regulator to exclude other relevant models etc from consideration.
28. The Authority originally proposed a criterion that a model must be "well accepted" as a forerunner of the "fit for purpose" criterion.<sup>133</sup> In this context ATCO Gas Australia notes that "*the Authority does not accept that the AEMC rejected the use of the term 'well accepted'*".<sup>134</sup> In ATCO Gas Australia's submission, the AEMC did just that. The relevant words were previously in rule 87 and have been removed. The fact that the Authority discusses this the point in the context of its "fit for purpose" criterion, suggests to ATCO Gas Australia that the Authority may be at risk of erroneously using this criterion as a proxy for the former, now replaced test of "well accepted". This could lead to the exclusion of methods and information which are relevant and contribute to the achievement of the ARORO, even though they are not "well accepted" as that test was previously (and in ATCO Gas Australia's submission, incorrectly) applied.
29. If despite this submission the Authority were to continue using "fit for purpose", ATCO Gas Australia respectfully submits that there should be detailed and transparent discussion and explanation, supported by evidence, whenever this criterion is used to exclude a method etc, to identify the relevant purpose, explain why the method in question fails the criterion, and explain why applying the criterion in that instance will better contribute to achieving the ARORO.

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<sup>130</sup> "able to perform well in estimating the cost of debt and the cost of equity over the regulatory years of the access arrangement period".

<sup>131</sup> As the Authority intends, see Explanatory Statement, App.3, [27].

<sup>132</sup> Explanatory Statement, App.3, [25].

<sup>133</sup> Explanatory Statement, App.3, [22]-[24].

<sup>134</sup> Explanatory Statement, App.3, [22]-[24].

### *Criterion 3 “Implemented in accordance with best practice”.*

30. This additional criterion and its three subcriteria contain a selection of terms, which, ATCO Gas Australia respectfully submits, on closer scrutiny lack transparency, are sometimes vague and are sometimes inappropriate.
31. The criterion itself uses the phrase “best practice” which ATCO Gas Australia submits is somewhat subjective. It is not entirely clear whose or which “best practice” is being referred to. Neither the Explanatory Statement nor Guidelines propose an objective standard against which “best practice” will be judged. ATCO Gas Australia submits that, if it were retained despite this submission, this criterion could be clarified to refer to the “best practice of recognised market professionals operating in the real world market for funds”.
32. In ATCO Gas Australia’s view it is quite possible for a method etc to be robust, transparent and replicable, and yet produce rates of return that are inconsistent with the ARORO. As a simple example, a model which valued return on equity at one tenth of the Commonwealth bond rate would meet each of these tests, but on any analysis would seriously underestimate the return on equity for rule 87’s purposes.
33. ATCO Gas Australia submits that this criterion incorporates subjective value judgments e.g. “available” and “credible” beg the question “to whom?” “Sufficiently robust” begs the question “against what is ‘sufficiency’ judged?” “Unduly sensitive”, “small”, “arbitrary” and “sound” are all subjective, and lack a transparent external or replicable yardstick. ATCO Gas Australia respectfully submits that each of these increase the risk for arbitrary, non-transparent or inconsistent use of the criterion. Indeed, ATCO Gas Australia submits that the Explanatory Statement later appears to fall into this error when this criterion is apparently used to reject several non-Sharpe-Lintner CAPM models without apparent further evidence or analysis. ATCO Gas Australia respectfully submits that this criterion should be rejected.
34. In relation to subcriterion 3(c), ATCO Gas Australia respectfully submits that there is clearly a role in rule 87 for qualitative data and not just quantitative data. Furthermore, ATCO Gas Australia is concerned that filtering and adjustment of data based solely on “statistical best practice” may exclude other appropriate grounds for adjustment such as empirical grounds or the best practice of finance market professionals.

### *Criterion 4 “Capable of reflecting changes in market conditions and able to incorporate new information as it becomes available”*

35. ATCO Gas Australia has little objection to this criterion provided it is not applied as a cumulative hurdle or in a prescriptive fashion. A method etc that does not meet this criterion may still be relevant and may still be capable of contributing to the overall task of achieving the ARORO.
36. Flexibility, of itself, is not sufficient to ensure that a method etc is relevant under rule 87(5)(a).

37. The methods and information which are finally adopted in an access arrangement revision must, when taken together, be commensurate with prevailing conditions in the market.<sup>135</sup>

*Criterion 5 “Supportive of specific regulatory aims; and thereby:”*

The Explanatory Statement asserts that:

*“These [specific regulatory aims under the NGL and NGR] are intended to refer back to the explicit requirements of the NGL and NGR – as captured in the NGO, the RPP, the rate of return objective, as well as the other requirements of the NGR – as well as to the associated, implicit, outcomes that are consistent with the broad incentive regulation approach and good regulatory practice.”<sup>136</sup>*

38. Most of ATCO Gas Australia’s submissions on criterion 5 relate to its subcriteria, see below. Generally though, ATCO Gas Australia is concerned that additional criterion 5 are likely to lead the Authority into error. As the following discussion indicates, several of the subcriteria appear to depart from the NGL. ATCO Gas Australia respectfully submits that they are therefore not appropriate to include in the Guidelines. It is not the task of the Guidelines to create new objectives for the allowed rate of return. The NGL and NGR give the administrative decision-maker detailed statutory guidance, which should be applied consistently.
39. ATCO Gas Australia assumes that the Authority’s intention is that the words “and thereby” in Criterion 5 should be read as “being”, ie. that the subcriteria listed are in fact the “specific ... aims” referred to. If this is not the case, the Authority should articulate which specific aims are being pursued, as a means of achieving the (in some cases inappropriate) ends stated in the seven subcriteria.
40. To the extent that the criterion simply restates existing provisions, then in ATCO Gas Australia’s submission the criterion is unnecessary.

*Subcriterion 5(a) “recognise the desirability of consistent approaches to regulation across industries, so as to promote economic efficiency”*

41. The Explanatory Statement asserts that this subcriterion reflects an implied aim of the NGL and National Gas Rules.<sup>137</sup>
42. At a general policy level removed from the rate of return setting process, ATCO Gas Australia has no objection to an overall policy objective of convergence in energy regulation. As the AEMC has stated:

*“There is a strong case for a common framework under the NER, including as between transmission and distribution, and NGR for setting the rate of return. A common framework can minimise any risks of distortions in capital allocation or investment decisions between the electricity and gas sectors.”<sup>138</sup>*

<sup>135</sup> This is of course an explicit requirement for return on equity under rule 87(7) and implicit for return on debt in rules 87(1)(a) and (b).

<sup>136</sup> Explanatory Statement, App. 3, [50].

<sup>137</sup> Explanatory Statement, App. 3, [52].

<sup>138</sup> AEMC, Final Rule Determination, p. 23.

43. However, while consistent approaches to regulation across industries may be desirable for many reasons, it is not an objective or a relevant consideration under the National Gas Law and certainly not under rule 87.
44. ATCO Gas Australia respectfully submits that it is not the Authority's function under the NGL and NGR to ensure that regulatory decisions across industries, service providers and time are consistent. Rather, the Authority is tasked with determining a rate of return that achieves the allowed rate of return objective.<sup>139</sup>
45. Further, the Authority, being a Western Australian regulator delegated by the WA parliament under the State law which implements the text of the NGL, must relevantly consider the fact that the WA Parliament has neither adopted the NEL in WA, nor legislated for cross-industry convergence in either the NGL or the *Electricity Industry Act 2004*.
46. Rates of return determined by applying the proposed decision framework may be consistent across industries, service providers and time, but this consistency does not ensure commensurability with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to the service provider in respect of the provision of reference services. Accordingly, ATCO Gas Australia submits that this criterion cannot properly be adopted.
47. More fundamentally, there is a clear difference between the regulatory efficiencies which may flow from cross-industry regulatory consistency, on the one hand, and the economic efficiency referenced in the NGO on the other, namely efficient investment in, operation and use of natural gas services.<sup>140</sup> ATCO Gas Australia submits that the focus should always be on the NGO.

*Subcriterion 5(b) "seek to achieve rates of return that would be consistent with the outcomes of efficient, competitive markets"*

48. This subcriterion is not consistent with the ARORO. In ATCO Gas Australia's submission the reference to competitive markets is inappropriate. The rate of return achieved by a firm in an efficient competitive market will vary widely and significantly over short periods of time from large losses to large profits, as the firm responds to competitors entering and leaving the market and to other market forces. It is not the role of an economic regulator to try to replicate such fluctuations, and including that task as a subcriterion is, in ATCO Gas Australia's submission, entirely incorrect. Indeed, if this subcriterion were relied on, it could support a rate of return of more than 20 per cent (eg. outcomes in the efficient competitive banking and mining sectors) or a loss. Neither outcome would be acceptable in a regulated context (in current market conditions). This subcriterion should be deleted.
49. This demonstrates ATCO Gas Australia's submission that the criteria seek to restate the rule. Rule 87 states the Authority's task, and does not use the words chosen for this subcriterion.<sup>141</sup> The subcriterion could thus potentially mislead the Authority when it comes to an access arrangement revision.

<sup>139</sup> AEMC, Final Rule Determination, p. 13.

<sup>140</sup> Section 23 of the NGL.

<sup>141</sup> Rule 87(3).

*Subcriterion 5(c) “ensure that the net present value of returns is sufficient to cover a service providers’ efficient expenditures (the NPV=0 condition)”*

50. Again, the Explanatory Statement asserts this sub-criterion as an implied aim of the NGL and NGR.<sup>142</sup>
51. This subcriterion appears to be intended to restate the RPP contained in section 24(2) of the NGL, but in ATCO Gas Australia’s view demonstrates the risks inherent in trying to restate the relevant statutory parameters:
- (a) First, the important words “at least” from section 24(2) are not included in the subcriterion.
  - (b) Second, section 24(2) refers to “efficient costs”, not the potentially narrower concept of “efficient expenditures”.
  - (c) Third, ATCO Gas Australia notes that the words “ensure that NPV of returns” are not the same as “reasonable opportunity to recover”, and that this difference creates a risk that the Authority may be led astray at an access arrangement revision.
52. In summary, ATCO Gas Australia’s submission is that if the above points are addressed such that this subcriterion is in identical terms to section 24(2), it will add little. If they are not, however, then this subcriterion risks being applied in a way that will lead to error.

*Subcriterion 5(d) “provide incentives to finance efficiently”*

53. ATCO Gas Australia is concerned that this subcriterion, read with the material at the beginning of the Draft Guidelines on incentive regulation (if that material were to be retained despite this submission), misconstrues the regulator’s task under rule 87.
54. ATCO Gas Australia agrees that one goal of the NGL is to create an incentive-based regime, as is expressly stated in the RPP in section 24(3). However, the general obligation to have regard to an RPP should not be elevated above the mandatory specific language of rule 87.
55. ATCO Gas Australia respectfully submits that the regulator’s task is to produce an ARORO-compliant rate of return.
56. Under the NGR framework, an ARORO-compliant rate of return will automatically incentivise the service provider to be more efficient in order to reap the benefits of that efficiency. As stated in the AEMC Draft Determination:

*“...The rate of return must therefore only reflect efficient financing costs of a benchmark efficient gas service provider to allow the service provider to **retain the benefits** from adopting more efficient financing arrangements than assumed by the regulator, and **consumers are protected** if a service provider is inefficient in their financing practices.”<sup>143</sup>*

<sup>142</sup> Explanatory Statement, App. 3, [52].

<sup>143</sup> AEMC, Draft Rule Determination, p. 18.

57. Similarly in the Final Determination p13, the AEMC stated:

*“Achievement of the overall allowed rate of return objective will promote effective incentives as the rate of return determined should be commensurate with benchmark efficient financing costs.”*

58. ATCO Gas Australia respectfully submits that the subcriterion will result in a rate of return which diverges from the ARORO, the NGL and the RPPs.

*Subcriterion 5(e) “promote simple approaches over complex approaches where appropriate”*

59. As drafted this subcriterion would appear to be of no practical use because its impact depends wholly on the question of appropriateness.<sup>144</sup> In ATCO Gas Australia’s view all that could be said, in a properly stated version of the criterion, would be that “simple models **that perform as well as** complex models should be preferred, **all other things equal**”.<sup>145</sup> But such a statement achieves almost nothing because in practice all other things will never be equal.

60. This is more than an academic point. The use of additional criteria in the Draft Guidelines has led to the exclusion of all methods and information other than Sharpe-Lintner CAPM, which is, in ATCO Gas Australia’s submission, flawed and incapable on its own of reaching an ARORO-compliant rate of return. ATCO Gas Australia respectfully submits that the Guidelines’ focus ought to be on considering all “relevant” approaches,<sup>146</sup> simple, complex or otherwise.

*Subcriterion 5(f) “promote reasoned, predictable and transparent decision making”*

61. Although ATCO Gas Australia naturally supports regulatory decisions that are reasoned, predictable and transparent, it observes that these are not ends in themselves and are not sufficient for ARORO-compliance as required under the rules. A decision may be reasoned but still erroneous. Also, the word “reasoned” should not come to support an over-emphasis on theory as discussed elsewhere in this submission.

62. Likewise, ATCO Gas Australia is concerned that the word “predictable” could lead a regulator into the error of thinking that it needed to produce the same rate of return, or weigh only the same considerations, across service providers. ATCO Gas Australia submits that both rule 87 itself and the AEMC’s discussions<sup>147</sup> make it quite clear that the regulator’s task is to fit the allowed rate of return specifically to the individual service provider’s circumstances.

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<sup>144</sup>The Authority states in support of this subcriterion that “*simple models that perform as well as complex models should be preferred, all other things equal.*”. Explanatory Statement, App.3, [54]. This too adds nothing because it too depends wholly on the question of whether all other things are indeed equal.

<sup>145</sup> Explanatory Statement, App 3, [54].

<sup>146</sup> Rule 87(5)(a).

<sup>147</sup> “Under the new approach the regulator must determine a rate of return (the allowed rate of return) that is consistent with that required by a benchmark efficient firm with similar risk characteristics to the service provider in question. A key feature of the new framework is that the allowed rate of return is effectively determined on a “determination by determination basis.” AEMC, Final Rule Determination, p. 23.

63. This is clearly a worthy goal. However, in ATCO Gas Australia’s view it adds little as an additional criterion due to its circularity. To the extent that a regulator is able to achieve an ARORO-compliant rate of return through transparent and lawful processes, its decisions will be credible and acceptable.

### Conclusion on Criterion 5

64. The Explanatory Statement states that:

*“... the CAPM also performs strongly in terms of being ‘supportive of specific regulatory aims’, particularly the desirability to ‘promote economic efficiency’ (see chapter 4 and Appendix 3 on incentive regulation).”<sup>148</sup>*

65. The material on incentive regulation effectively concludes that the proper incentives are established by adopting the best possible estimate of the required return on equity. ATCO Gas Australia agrees with that proposition. However:

- (a) the ARORO and the requirement that the allowed return on equity must be commensurate with the prevailing conditions in the market would already seem to require the regulator to seek the best possible estimate of the required return on equity; and
- (b) this criterion provides no basis for preferring the Sharpe-Lintner CAPM to other models, or for preferring the Sharpe-Lintner CAPM to the exclusion of all other models. In fact, the Explanatory Statement does not refer to this criterion in its discussion of any other model.

66. ATCO Gas Australia considers that the criteria discussed above should not be used, and instead the requirements of the NGR and the NGL should be relied on.

### Examples of the use of the additional criteria

67. The remainder of this Schedule 2 contains illustrations of how the additional criteria have been applied inconsistently and without adequate, or sometimes any, evidence or argument. ATCO Gas Australia submits these illustrations are sufficient to establish its contention that, even if the above flaws in the additional criteria were to be disregarded, their use in developing the Draft Guidelines has been sufficiently flawed to cause the Draft Guidelines themselves to be in error.

68. If the Authority requires it in order to be satisfied of this proposition, ATCO Gas Australia would be happy to provide further analysis of the Draft Guidelines and Explanatory Statement to further illustrate the below points.

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<sup>148</sup> Explanatory Statement, [598].

## *The Sharpe-Lintner CAPM would fail the additional criteria*

69. If the additional criteria were applied to the Sharpe-Lintner CAPM in the same way that they have been applied to other methods and information, the Sharpe-Lintner CAPM would also be rejected.

*Example: Criterion 1 “Driven by economic principles”. Subcriterion 1(a) “based on a strong theoretical foundation, informed by empirical analysis”.*

70. For example, under the criterion ‘driven by economic principles’, the Explanatory Statement rejects the Black CAPM because “there is no basis for the existence of a zero-beta portfolio.”<sup>149</sup> However, ATCO Gas Australia submits that under every portfolio on the efficient frontier (one of which is the market portfolio) there is a matching zero-beta portfolio for the Sharpe-Lintner CAPM. The existence of a matching zero-beta portfolio is a key step in the derivation of both the Black CAPM and the Sharpe-Lintner CAPM.<sup>150</sup> It doesn’t differentiate the two models, such that it is not a valid basis for the Explanatory Statement to reject the former model.

*Example: Criterion 2 “Fit for purpose”.*

71. Under the criterion ‘fit for purpose’ and subcriterion ‘performs well’ the Explanatory Statement acknowledges that the Sharpe-Lintner CAPM performs poorly when applied to empirical data and cites Levy (2012), whose paper summarises some of the many empirical studies that show that stock returns and beta estimates are not related in the way predicted by the Sharpe-Lintner CAPM.<sup>151</sup>

72. Further, in the most recent study applied to the Australian data, NERA (2013)<sup>152</sup> shows that there is no discernible relationship between stock returns and beta estimates constructed in the way the proposed in the Draft Guidelines.

73. Nevertheless, the Explanatory Statement concludes that the Sharpe-Lintner CAPM is “fit for purpose” because:

*“While it is true that the CAPM may not fully explain investor returns with precision, it **performs as well, if not better** than many other models **ex ante**...”<sup>153</sup>*

74. The Explanatory Statement addresses the Sharpe-Lintner CAPM’s demonstrated empirical failings as follows:

*“...the CAPM is an **ex ante** model which seeks to predict the return on equity. The result that actual outcomes might differ **ex post** does not mean that the model is wrong.”<sup>154</sup>*

<sup>149</sup> Explanatory Statement, [615].

<sup>150</sup> See, for example, Huang, C-F. and R. H. Litzenberger, 1988, *Foundations of Financial Economics*, North-Holland, New York, Section 4.11; Black, F. 1972, *Capital Market Equilibrium with restricted borrowing*, *Journal of Business*, 45, pp. 444-454; and Lintner, J., 1969, “The aggregation of investors’ diverse judgments and preferences in purely competitive markets”, *Journal of Financial and Quantitative Analysis*, 4, pp. 346-382.

<sup>151</sup> Explanatory Statement, [600]-[601].

<sup>152</sup> [NERA, 2013, \*Estimates of the Zero-Beta Premium: A report for the Energy Networks Association\*.](#)

<sup>153</sup> Explanatory Statement, [606].

<sup>154</sup> Explanatory Statement, [602].

75. On the basis of the analysis already contained in the Explanatory Statement, other models perform as well and an assessment of performance should not be affected where the actual outcomes differ to the prediction. ATCO Gas Australia submits that a theoretical forward-looking model that it is **capable** of looking forward is not sufficient, it must also be assessed by its performance in predicting actual outcomes.
76. The task is to achieve an ARORO-compliant rate of return, which involves matching the allowed rate of return as closely as possible to the efficient financing costs of a suitable benchmark efficient entity.
77. The Draft Guidelines appear to maintain that empirical evidence of systematic skewing of returns on stocks predicted by the Sharpe-Lintner CAPM does not disprove that model.<sup>155</sup> ATCO Gas Australia submits that the systematic skewing impacts on the ability of the Sharpe-Lintner CAPM to assist in determining an ARORO-compliant rate of return.
78. ATCO Gas Australia suggests that it is incorrect to suggest that the empirical performance of a model, judged after the event, is irrelevant. Indeed, it submits that such evidence is in fact clearly relevant and required under rule 87. Correspondingly, if a predicted outcome will never or never reliably eventuate, then the predictive model's *ex ante* performance seems to have little relevance to the rate-setting task.

*Example: Criterion 3: "Implemented in accordance with best practice".*

79. The Explanatory Statement concludes that the Sharpe-Lintner CAPM is "implemented in accordance with best practice" because "the estimates of the key parameters...are based on available data."<sup>156</sup> ATCO Gas Australia submits that this conclusion is incorrect or unsustainable for the following reasons:
- (a) The quality of a model's implementation can only be determined in respect of each implementation, and there are many ways to implement each model. Further, whether or not the key parameters are based on available data would need to be assessed at the time of implementation. For example, there are many different ways to estimate each model parameter and consequently, countless implementations of the same model, which may or may not be in accordance with best practice.
  - (b) Even if the term "best practice" had a clear meaning,<sup>157</sup> the Australian regulatory implementation of the Sharpe-Lintner CAPM is demonstrably inconsistent with the practice of independent expert valuation professionals (see next paragraph).
80. For example, SFG (2013) show that none of the independent expert reports that were filed with the ASX in 2012 or 2013 implemented Sharpe-Lintner CAPM mechanistically by adopting the contemporaneous government bond

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<sup>155</sup> Explanatory Statement, [601]-[602].

<sup>156</sup> Explanatory Statement, [597].

<sup>157</sup> See critique of this criterion above.

yield as the estimate of the risk free rate and adding a risk premium equal to the long-run historical average.<sup>158</sup>

81. ATCO Gas Australia submits that the practice of independent expert valuation professionals:
- (a) evidences sound, reliable and useful practice;
  - (b) is relevant in determining “best practice”;
  - (c) is relevant under rule 87(5)(a); and
  - (d) ought to be given significant weight for the reasons set out in paragraph 67.<sup>159</sup>

*Other material would pass the criteria*

82. In this subsection, ATCO Gas Australia demonstrates that, contrary to the conclusions in the Explanatory Statement, various other methods would satisfy certain of the additional criteria. Again, ATCO Gas Australia submits that the examples below demonstrate the inappropriateness of both the additional criteria and how they have been used.

*Example: Criterion 1 “Driven by economic principles”.*

83. The Explanatory Statement concludes that the Sharpe-Lintner CAPM “is grounded solidly in theory, and therefore performs well against the criteria that the estimate be ‘based on a strong theoretical foundation’”, basing its conclusion on this statement:

*“The greater the i) level of non-diversifiable risk of the asset, ii) the gearing of the firm, and iii) the risk free rate, the greater is the required or expected rate of return on equity estimated through the CAPM.”<sup>160</sup>*

84. Based on the rationale above, each of the Black CAPM and the Fama-French model also satisfy Criterion 1 because using either of those models, there is a corresponding relationship between:
- (a) non-diversifiable risk, gearing, and the risk free rate; and
  - (b) the required or expected rate of return on equity estimated.
85. In terms of theoretical grounding, the Sharpe-Lintner CAPM is a restricted or special case of the more general Black CAPM and Fama-French model. The mathematical derivation of the Sharpe-Lintner and Black versions of the CAPM is identical, except for the fact that the Sharpe-Lintner CAPM makes

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<sup>158</sup> [SFG Consulting, 2013, Evidence on the required return on equity from independent expert reports: Report for the Energy Networks Association](#), p 12. In summary, independent expert valuers sometimes used an estimate of the risk-free rate that is in excess of the contemporaneous government bond yield; sometimes used an estimate of the required return on the market that implies a market risk premium in excess of the historical average of excess returns; and sometimes applied a specific uplift factor to increase the estimate of the required return on equity.

<sup>159</sup>. Ibid, pp. 3-4, 7.

<sup>160</sup> Explanatory Statement, [596].

the additional (and inappropriate, in this context) assumption that investors can borrow and lend unlimited amounts at the risk-free rate.<sup>161</sup>

86. Similarly, the Sharpe-Lintner CAPM is a restricted special case of the FFM, where the additional assumptions are that the coefficients on the size and book-to-market factors are both equal to zero.
87. Accordingly, ATCO Gas Australia submits that the Explanatory Statement's conclusion that there is no underlying theory supporting the Black CAPM,<sup>162</sup> and assertion that the FFM is not "based on a strong theoretical foundation"<sup>163</sup> are incorrect.<sup>164</sup> On the reasoning set out in the Explanatory Statement, Criterion 1 does not distinguish the Sharpe-Lintner CAPM from Black CAPM and FFM.
88. In relation to the Fama-French three factor model, the Explanatory Statement concludes that "there is no theory that explains why the choice of factors, the exact form of the variables used, or reasons why these are common factors in returns."<sup>165</sup>
89. While the Fama-French model originated in studies documenting the empirical failings of the Sharpe-Lintner CAPM, it has since been structured as a risk-factor model within the context of the Arbitrage Pricing Theory.<sup>166</sup> Its purpose, like the Sharpe-Lintner CAPM, is to estimate the required return on equity.
90. ATCO Gas Australia submits that the FFM's theoretical grounding is not prejudiced by its development history, on the basis that theories are retained, replaced or improved ultimately by reference to their consistency with the evidence. Furthermore, ATCO Gas Australia submits that it is erroneous to reject a valuable predictive tool solely on the basis that it lacks theoretical support. If it performs empirically, then it can be relevant for achieving an ARORO-compliant outcome whether or not there is yet a theory behind it which is accepted by the Authority.
91. To illustrate: Before Newton's *Principia* was published 1687, there was no developed theory of gravity. However even before that date, **people knew to be cautious when standing on high ledges** based solely on empirical observations of what happened if one was incautious. It would clearly be wrong to suggest that before 1687 no valuable predictions could have been made about the future of someone who fell from a high place, merely because those predictions lacked a theoretical foundation.
92. Accordingly, ATCO Gas Australia submits that the FFM satisfies Criterion 1.

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<sup>161</sup> See, for example, Huang, C-F. and R. H. Litzenberger, 1988, Foundations of Financial Economics, North-Holland, New York, Section 4.11; Black, F. 1972, Capital Market Equilibrium with restricted borrowing, Journal of Business, 45, pp. 444-454; and Lintner, J., 1969, The aggregation of investors' diverse judgments and preferences in purely competitive markets, Journal of Financial and Quantitative Analysis, 4, pp. 346-382.

<sup>162</sup> Explanatory Statement, [615].

<sup>163</sup> Explanatory Statement, [644].

<sup>164</sup> ATCO notes that the AER stated in its Explanatory Statement, p. 190:

"...the Black CAPM relies on the well-accepted economic and finance principle that rational investors will minimise the variance of portfolio returns for a given return, or alternatively maximise expected returns given variance."

<sup>165</sup> Explanatory Statement, [633].

<sup>166</sup> See NERA (2013), Review of cost of equity models, June, p.19 and Ross, Stephen, *The arbitrage theory of capital asset pricing*, Journal of Economic Theory 13, pp. 341-360.

Example: Criterion 2 “Fit for purpose”.

93. The AEMC has stated that:

*“Most of the financial models that exist in the finance field are based on academic work. **All of the models appear to have some weaknesses.** All the models that have been advanced have been criticised for either the underlying assumptions required or lack of correlation of modelling results with empirical tests. **Even the CAPM has been criticised in academic literature...***

*...Weaknesses in a model do not necessarily invalidate the usefulness of the model. Ultimately, it is important to keep in mind that all these financial models are based on certain theoretical assumptions and no one model can be said to provide the right answer...<sup>167</sup>*

94. Despite this, the Explanatory Statement concludes that every model other than the Sharpe-Lintner CAPM is not “fit for purpose”, and vice versa

95. The Explanatory Statement contends that the Fama-French model lacks theoretical support.<sup>168</sup> Even if this contention is accepted, ATCO Gas Australia submits that the FFM has demonstrated its value in predicting rates of return.

96. On this basis, ATCO Gas Australia submits that the FFM satisfies Criterion 2 as well (if not better) than the Sharpe-Lintner CAPM.

97. In relation to dividend discount models, the Explanatory Statement concludes that “DDM are based on an ‘implied’ return on equity, and are therefore not derived from any theoretical underpinning as to what prices the return.”<sup>169</sup>

98. However, dividend discount models are based on the NPV=0 principle – that the current stock price is equal to the present value of expected future cash flows. Consistent with this, the AER has acknowledged that “Dividend growth models are well grounded in economic theory”<sup>170</sup> and the Explanatory Statement itself confirms that:

*“With regard to the second approach, the Dividend Growth Model, the Authority agrees that the approach is developed based on sound theoretical grounds.”<sup>171</sup>*

99. On this basis, ATCO Gas Australia submits that DDM’s have a strong theoretical underpinning and satisfy Criterion 1.

Example: Criterion 3: “Implemented in accordance with best practice”.

100. The Explanatory Statement concludes that the Sharpe-Lintner CAPM is “implemented in accordance with best practice” because “the estimates of the key parameters...are based on available data.”<sup>172</sup>

<sup>167</sup> AEMC, Draft Rule Determination, p. 47.

<sup>168</sup> Explanatory Statement, [633] and following.

<sup>169</sup> Explanatory Statement, [653].

<sup>170</sup> AER Explanatory Statement, p. 195.

<sup>171</sup> Explanatory Statement, [843].

<sup>172</sup> Explanatory Statement, [597].

101. If this criterion is satisfied for the Sharpe-Lintner CAPM because “the estimates of the key parameters...are based on available data,” it would be equally satisfied for all models that estimate parameters using the same data.
102. ATCO Gas Australia submits that other models would satisfy Criterion 3, and that accordingly, it does not differentiate the Sharpe-Lintner CAPM from other models.

*Example: Criterion 4 “Capable of reflecting changes in market conditions and able to incorporate new information as it becomes available”*

103. The Explanatory Statement notes that the Sharpe-Lintner CAPM is capable of reflecting changes in market conditions and is capable of incorporating new information as it becomes available – on the basis that up-to-date data can be used to estimate the input parameters.<sup>173</sup> ATCO Gas Australia submits that:
- (a) NGR 87(7) already requires that the allowed return on equity must be commensurate with the prevailing conditions in the market, so it is not clear what is added by this criterion;
  - (b) Up-to-date data can be used to estimate the parameters for all models, so this criterion does not differentiate the Sharpe-Lintner CAPM from other models; and
  - (c) Parameters used in both Sharpe-Lintner CAPM and other models are all *capable* of reflecting changes in market conditions; whether they actually do or not depends on how they are estimated.<sup>174</sup>
104. Accordingly, ATCO Gas Australia submits that satisfying Criterion 4 does not differentiate the Sharpe-Lintner CAPM from other models.

#### *Lack of analysis or evidence*

105. The criteria are sometimes applied without evidence or reasoning to support the conclusions being drawn as to whether the material passes or fails the criterion.
106. The Explanatory Statement in several places asserts that various criteria have or have not been satisfied without apparently adducing analysis or evidence in support of its assertion. For example:
- (a) in asserting that various models have shortcomings with regard to being “fit for purpose”,<sup>175</sup> and

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<sup>173</sup> Explanatory Statement, [595].

<sup>174</sup> For example, there is no argument about the fact that the market risk premium is a time-varying parameter that changes with market conditions. The Sharpe-Lintner CAPM MRP estimate is *capable* of reflecting these changes over time. However, if a particular way of implementing the model results in the same constant parameter estimate being used even in dramatically different market conditions, that *implementation* would appear to be inconsistent with the criterion and with NGR 87(7), even if the Sharpe-Lintner parameter estimates were commensurate with the prevailing conditions in the market for equity funds.

<sup>175</sup> Explanatory Statement, [617], [623], [628], [650], [660], [670], [675], [683] and [692].

- (b) in asserting whether various models are “implemented in accordance with best practice”.<sup>176</sup>

This is not an exhaustive list.

107. In other instances, the Explanatory Statement apparently simply does not consider whether a model meets various criteria. For example, the Explanatory Statement appears not to consider whether any of the models or approaches for estimating the return on equity, **other than the Sharpe-Lintner CAPM**, are:

- (a) “capable of reflecting changes in market conditions and able to incorporate new information as it becomes available”; or
- (b) “supportive of specific regulatory aims”.

*Inconsistent application*

108. In addition to the matters set out above, the Explanatory Statement’s application of the criteria in assessing methods and information appears to ATCO Gas Australia to be variable and inconsistent. For example, the Explanatory Statement apparently:

- (a) draws no conclusion as to a “strong theoretical foundation” or being “fit for purpose” in Chapter 6 Return on Debt; and
- (b) does not in fact apply “Driven by economic principles” as a criterion or draw any conclusion as to whether this criterion is met in the Explanatory Statement.

109. ATCO Gas Australia submits that any criterion must be applied consistently (even when it is being used as a non-prescriptive and non-cumulative guide). If it is not so applied, it ought not be included as a criterion.

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<sup>176</sup> Explanatory Statement, [617], [623], [328], [644], [650], [670], [675], [679], [683] and [692].

