AUSTRALIAN COMPETITION TRIBUNAL

Application by DBNGP (WA) Transmission Pty Ltd [2018] ACompT 1

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| Review from: | Economic Regulation Authority of Western Australia |
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| File number: | ACT 9 of 2016 |
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| Tribunal: | **FOSTER J (DEPUTY PRESIDENT)**  **MR ROBIN DAVEY (MEMBER)**  **MR RODNEY SHOGREN (MEMBER)** |
|  |  |
| Date of Determination: | 16 July 2018 |
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| Catchwords: | **ENERGY AND RESOURCES** – application for review of an access determination made by the Economic Regulation Authority of Western Australia (**ERA**) in respect of the Dampier to Bunbury natural gas pipeline for the 2016-2020 regulatory period – two grounds of review, namely, whether the ERA erred in its determination of a nominal after tax return on equity of 6.98%, resulting in a nominal after tax weighted average cost of capital (**WACC**) of 5.83% because it failed to make an appropriate adjustment to beta in the SL-CAPM in order to accommodate alleged low beta bias in the outputs of that model and whether the ERA erred in its determination of gamma viz the value of imputation credits at 0.40 for the purposes of r 87A of the National Gas Rules because it applied an incorrect utilisation rate (theta) in the relevant formula – no reviewable error found in the ERA’s determination |
|  |  |
| Legislation: | *Acts Interpretation Act 1901* (Cth)  *Acts Interpretation Act 1915* (SA)  *Corporations Act 2001* (Cth) s 237(2)(d)  *Interpretation Act 1984* (WA)  *National Gas Access (WA) Act* *2009* (WA), ss 3, 6B(1), 7, 9(1), Pt 3  *National Gas Access (Western Australia) Law*, ss 2, 2A, 8, 9, 10, 20, 27, 244, 245, 246, 248–251, 252, 258A, 259, 261  *National Gas Law*, ss 2, 26, 27, 28, 68C, 91, Ch 1 Pt 3, Ch 1 Pt 4, Ch 2 Pt 2, Ch 8 Pt 5, Ch 9 Pt 1 Div 2, Sch 2 cll 1, 7, 8, 9, 11, 12, 13  *National Gas (South Australia) Act 2008* (SA)  *National Gas Access (WA) (Part 3) Regulations 2009*, s 4, Sch 1 cl 2(1)  *National Gas Rules*, rr 52, 64, Pt 9  *Statutes Amendment (National Electricity and Gas Laws—Limited Merits Review) Act 2013* (SA) |
|  |  |
| Cases cited: | *Application by ActewAGL Distribution* [2010] ACompT 4  *Application by ActewAGL Distribution* [2017] ACompT 2  *Application by ATCO Gas Australia Pty Ltd* [2016] ACompT 10  *Application by ElectraNet Pty Limited (No 3)* [2008] ACompT 3  *Application by Energy Australia & Ors* [2009] ACompT 8  *Application by Envestra Limited* [2011] ACompT 12  *Application by Envestra Limited (No 2)* [2012] ACompT 4  *Application by SA Power Networks* [2016] ACompT 11  *Applications by Public Interest Advocacy Service Ltd and Ausgrid Distribution* [2016] ACompT 1  *Australian Competition and Consumer Commission v Australian Competition Tribunal* (2016) 152 FCR 33  *Australian Energy Regulator v Australian Competition Tribunal (No 2)* (2017) 345 ALR 1;[2017] FCAFC 79  *House v The King* (1936) 55 CLR 499  *Re: Application by ElectraNet Pty Limited (No 3)* [2008] ACompT 3  *SA Power Networks v Australian Competition Tribunal (No 2)* [2018] FCAFC 3 |
|  |  |
| Date of hearing: | 13–16 February 2017 |
|  |  |
| Date of last submissions: | 3 April 2018 |
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| Registry: | Western Australia |
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| Category: | Catchwords |
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| Solicitor for the Applicants: | Clayton Utz |
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| Solicitor for the Economic Regulation Authority of Western Australia: | Holman Fenwick Willan |

**IN THE AUSTRALIAN COMPETITION TRIBUNAL**

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|  | | ACT 9 of 2016 |
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| **RE:** | **APPLICATION UNDER SECTION 245 OF THE *NATIONAL GAS ACCESS (WESTERN AUSTRALIA) LAW* FOR A REVIEW OF THE DECISION MADE BY THE ECONOMIC REGULATION AUTHORITY OF WESTERN AUSTRALIA TO GIVE EFFECT TO ITS PROPOSED REVISIONS TO AN ACCESS ARRANGEMENT FOR THE DAMPIER TO BUNBURY NATURAL GAS PIPELINE, PURSUANT TO RULE 64 OF THE NATIONAL GAS RULES** | | |
| **APPLICANTS:** | **DBNGP (WA) TRANSMISSION PTY LTD (ACN 081 609 190) ON ITS OWN BEHALF AND ON BEHALF OF DBNGP (WA) NOMINEES PTY LTD (ACN 081 609 289) AS TRUSTEE OF THE DBNGP WA PIPELINE TRUST, AND DBNGP (WA) NOMINEES PTY LTD (ACN 081 609 289) AS TRUSTEE OF THE DBNGP WA PIPELINE TRUST** | | |

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| TRIBUNAL: | FOSTER J (DEPUTY PRESIDENT)  MR ROBIN DAVEY (MEMBER)  MR RODNEY SHOGREN (MEMBER) |
| DATE OF DETERMINATION: | 16 July 2018 |

THE TRIBUNAL DETERMINES THAT:

1. The Application for Review the subject of leave granted to the applicants by the Tribunal on 13 February 2017 be dismissed.
2. The designated reviewable regulatory decision, being the final decision of the Economic Regulation Authority of Western Australian published on 30 June 2016 on Proposed Revisions to the Access Arrangement for the Dampier to Bunbury natural gas pipeline for the regulatory period 2016-2020, is affirmed.

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REASONS FOR DETERMINATION

**THE TRIBUNAL:**

# Introduction

1. On 30 June 2016, the Economic Regulation Authority of Western Australia (**ERA**) published its final decision and its reasons for that decision (**the final decision**) on Proposed Revisions to the Access Arrangement for the Dampier to Bunbury Natural Gas Pipeline (**the pipeline**) for the regulatory period 2016–2020 (**the current regulatory period**). 2016–2020 was the fourth regulatory period in respect of the pipeline which has been the subject of regulation by the ERA.
2. The final decision was made pursuant to the National Gas Law (**NGL**), as implemented in Western Australia by the *National Gas Access (WA) Act* *2009* (WA)(**the WA Act**), and the National Gas Rules (**NGR**), as enacted by the *National Gas (South Australia) Act 2008* (SA) and as implemented in Western Australia by the WA Act. The NGR have the force of law in Western Australia (see s 26 of the National Gas Access (Western Australia) Law (**NGL(WA)**). In Western Australia, the underlying NGL as modified from time to time applies as the NGL(WA). The text of the NGL(WA) is set out in Schedule 1 to the WA Act. Section 9(1) of the WA Act provides that *“National Gas Law”* or *“this law”*, when used in the NGL(WA) and in the *National Gas Access (WA) (Part 3) Regulations* (**Regs**), means the NGL(WA).
3. The final decision addressed an amended revised access arrangement proposal (**the owners’ amended proposal**) which had been submitted to the ERA by the owners of the pipeline on 22 February 2016.
4. The owners of the pipeline are DBNGP (WA) Transmission Pty Ltd, acting on its own behalf and on behalf of DBNGP (WA) Nominees Pty Ltd as trustee of the DBNGP WA Pipeline Trust, and DBNGP (WA) Nominees Pty Ltd as trustee of the DBNGP WA Pipeline Trust. We shall refer to these corporations as “**the owners**”.
5. On 21 July 2016, the owners filed an application for the grant of leave under s 245 of the NGL(WA) to apply to review the final decision (**Review Application**). That decision was a *“reviewable regulatory decision”* and a *“full access arrangement decision”* made by the ERA in relation to the pipeline. The final decision was made pursuant to r 64 of the NGR.
6. In their Review Application, the owners sought leave to review four matters.
7. On 13 October 2016, the owners informed the Tribunal that they did not wish to press their application in respect of two of those four matters viz ground (iii) (the Subsequent Costs (non-turbine reactive maintenance) ground) and ground (iv) (the Definition of the P 1 Reference Service ground).
8. After the abandonment of the grounds of review referred to at [7] above, there remained for determination by the Tribunal grounds (i) and (ii). Those grounds concern:
9. The ERA’s determination of a nominal after tax return on equity of 6.98%, resulting in a nominal after tax weighted average cost of capital (**WACC**) of 5.83% (**the ROE decision**); and
10. The ERA’s determination of a value for imputation credits (**gamma**) of 0.4 (**the gamma decision**).
11. In their Review Application, the owners explained their contentions in respect of the ROE decision in Annexure 1 to that Application and in respect of the gamma decision in Annexure 2 to that Application.
12. Immediately before the commencement of the hearing of the Review Application, which commenced at 10.15 am on 13 February 2017, the Tribunal directed that the owners have leave to apply to the Tribunal for a review of the ROE decision and the gamma decision. At the time when it made that direction, the Tribunal informed the parties that it would provide reasons for its decision to grant that leave as part of its Reasons for Determination which would be published in due course in support of its decision in respect of grounds (i) and (ii) raised by the owners in their Review Application.
13. The pipeline is Western Australia’s key gas transmission pipeline, extending over some 1,539 km underground. It originates at a point immediately adjacent to the North West Shelf Joint Ventures Domestic Gas Plant on the Burrup Peninsula in the Pilbara region of Western Australia and passes through the Perth metropolitan area, Kwinana, Pinjarra and Wagerup, ultimately terminating at Main Line Valve 157 which is located at Clifton Road, north of Bunbury, in the south-west region of Western Australia.
14. The pipeline is an *“old scheme covered pipeline”*, a *“scheme pipeline”* and a *“covered pipeline”* under the WA Act, the NGL(WA) and the NGR. It is also a *“designated pipeline”* within the definition of *“designated pipeline”* in s 2 of the NGL(WA) (see s 4 of the *National Gas Access (WA) (Part 3) Regulations 2009* and cl 2(1) of Sch 1 to those Regulations).
15. Each of the owners is a *“service provider”* within the meaning of s 8 of the NGL(WA). This is because the owners own, control and operate a scheme pipeline.
16. The pipeline is an ERA pipeline within the meaning of that expression as defined in s 9(1) of the WA Act. For this reason, the ERA is designated as the relevant regulator (see the definition of *“regulator”* in s 9(1)).
17. Section 27 of the NGL(WA) prescribes the functions and powers of the ERA. The ERA is responsible for the economic regulation of pipeline services provided by service providers (such as the owners) by means of or in connection with a scheme pipeline. In particular, under Pt 9 of the NGR, the ERA is responsible for determining the total revenue for each regulatory year of an access arrangement period which the owners may earn for the provision by the owners of pipeline services through the pipeline.

# The Regulatory Process

1. On 31 December 2014, the owners submitted to the ERA proposed revisions to the access arrangement for the pipeline (**the owners’ original proposal**). That proposal was submitted to the ERA pursuant to r 52 of the NGR.
2. Under the NGR, the role of the ERA was to approve, or not approve, the proposed revised access arrangement contained in the owners’ original proposal in accordance with the NGL(WA) and the NGR.
3. On 20 April 2015, the ERA published an issues paper in response to the owners’ original proposal and, at the same time, invited submissions from interested parties. Some submissions were received.
4. On 22 December 2015, the ERA published its Draft Decision in relation to the owners’ original proposal (**draft decision**). The draft decision was not to approve the owners’ original proposal. In its draft decision, the ERA said that the owners had to make 74 amendments to their proposal before it would approve the access arrangement contained therein. At the same time, the ERA invited the owners to submit revisions to their original proposal and to do so by 22 February 2016.
5. On 22 February 2016, the owners submitted their amended proposal. At the same time, they also provided supporting information to the ERA.
6. The ERA then invited public submissions in respect of its draft decision and in respect of the owners’ amended proposal. The closing date for such submissions was 22 March 2016. Three interested parties made submissions to the ERA as did the owners.
7. The ERA subsequently invited a further round of public submissions in relation to a matter which had not been considered in the draft decision. Further submissions were received from the owners and from one other interested party.
8. At pars 9–14 of its final decision, the ERA made the following remarks concerning the process which it had undertaken in dealing with the owners’ application to have revisions made to the access arrangement in respect of the pipeline:

9. Section 28(1) and (2) of the NGL(WA) were substantially amended in 2013 to require the Authority to specify how the constituent components of this Final Decision related to each other and how the Authority has taken those interrelationships into account. Subsequent to these amendments, the NGL now anticipates that there may be more than one possible decision that will or is likely to contribute to the achievement of the NGO. In such cases, the Authority must make the decision that will or is likely to contribute to the achievement of the NGO to the greatest degree, and provide reasons.

10. The NGL(WA) does not prescribe how the Authority is to apply the requirements and, as a result, the Authority has used its regulatory judgement. The Authority has applied these requirements by determining total revenue and reference tariffs in accordance with the detailed requirements of the NGR.

11. The Authority’s Final Decision is complex and many of the components of the decision are interrelated. The adoption of a value for a component has implications for other elements or values elsewhere in the decision. For example:

* the value of imputation credits (gamma) has an impact on the estimated cost of corporate income tax;
* the value of imputation credits (gamma) has an impact on the estimate of the return on equity, through the estimates of the market risk premium;
* the definition of the benchmark efficient entity has strong links to all aspects of the rate of return, including:

– the composition of the benchmark efficient sample;

– the relevant estimation methods, financial models and market data and other evidence used for estimating the return on equity and the return on debt;

– the gearing;

– beta;

– the credit rating; and

– the debt risk premium;

* the return on debt is considered in conjunction with the return on equity, to ensure consistency;
* the definition of the benchmark efficient entity also has implications for whether to revalue the RAB at each access arrangement revision;
* the service provider’s governance arrangements and risk management will affect most aspects of the proposal, including capital and operating expenditure forecasts; and
* the approved demand forecasts will affect the calculation of reference tariffs.

12. In making its decision in accordance with the detailed requirements of the NGR and being mindful of any interrelationships between components, the Authority considers that it has made a Final Decision that will or is likely to contribute to the achievement of the NGO to the greatest degree. The Authority’s assessment is set out in the following sections of this Final Decision.

13. After considering DBP’s amended proposal and its supporting submissions, the submissions from other interested parties, and advice from the Authority’s technical and economic advisors, the Authority’s Final Decision is not to approve the amended proposal. The Authority’s reasons for refusing to approve the amended proposal are set out in this Final Decision.

14. Under rule 64 of the NGR, when the Authority refuses to approve an access arrangement proposal, the Authority is required to itself propose revisions to the access arrangement and make a decision giving effect to its proposal within two months of its Final Decision.

1. The above remarks accurately capture the fundamental features of the regulatory task which the ERA was obliged to perform.
2. In the present case, as permitted by r 64(3) of the NGR, the ERA decided not to consult on its ultimate access arrangement proposal. Instead, the ERA, as part of the final decision, made a decision giving effect to its access arrangement proposed under r 64(4) of the NGR. That decision is a *“reviewable regulatory decision”* (see the definition in s 2 of the NGL(WA) and s 244 of the NGL(WA)). It is also a *“designated reviewable regulatory decision”* (see the definition in s 2 of the NGL(WA)).
3. Pursuant to r 64(6) of the NGR, the revisions to the access arrangement made by the ERA took effect from 1 July 2016.
4. The ERA included within the final decision its proposed revisions to the owners’ amended proposal and its own revisions to the access arrangement.
5. Some minor corrections were made to the final decision on 20 July 2016. The form of the final decision under consideration in the present matter incorporates the revisions made on 20 July 2016.

# The Consultation Process

1. On 19 August 2016, Middleton J, as President of the Tribunal, made a number of Directions in this matter. Direction 2 required the ERA to communicate to all third parties who had made submissions in relation to the determinations the subject of the present Review Application advising them of certain matters by 23 August 2016, with an invitation to recipients (or any of their respective members) to:

(e) indicate to the Tribunal that they wish to receive and/or comment on the proposal regarding Tribunal consultations referred to in paragraphs 12 and 13 below of these directions; and

(f) express an interest in being notified of and/or participating in the Tribunal consultations in this review in the event that they do not intervene in the Tribunal review,

by **Monday 5 September 2016.**

1. Directions 12 and 13 made by Middleton J on 19 August 2016 concerned the community consultation process and directed the parties to take a number of steps to assist the Tribunal in relation to community consultation.
2. On 23 August 2018, the ERA sent a letter to those parties to whom Direction 2 made on 19 August 2017 had been directed. That letter included notice that intervening parties were required to notify their intention to intervene and file applications for leave to intervene by 15 September 2016. That letter also included an invitation for interested parties to indicate, by 5 September 2016, whether they wished to receive notice of and/or comment on proposals regarding the Tribunal’s public consultations and whether they were interested in being notified of and/or participating in the Tribunal’s public consultation process in the event that they did not intervene in the Tribunal review.
3. The ERA’s letter was sent to the following recipients:
4. Catherine Rousch, Manager Regulatory Compliance, Alinta Energy;
5. Prue Weaver, Marketing Manager Petroleum, BHP Billiton;
6. Dominic Rodwell, Manager Gas – Business Development, CITIC Pacific Mining;
7. Stephanie McDougall, Price Review Manager, United Energy & Multinet Gas;
8. Julie Lane, Executive Assistant to General Manager Business Development, Wesfarmers Chemicals, Energy & Fertilisers; and
9. Cameron Leckey, Principal Associate (CLE Town Planning & Design), Perron Developments.
10. By letter dated 31 August 2016, Wesfarmers Chemicals, Energy & Fertilisers advised the Tribunal that it:

* [wished] to receive and/or comment on proposals regarding the Tribunal’s public consultations; and
* [expressed] an interest in being notified of and/or participating in the Tribunal’s public consultations in the review in the event they do not intervene in the Tribunal review.

1. By letter dated 7 September 2016, CITIC Pacific Mining advised the Tribunal that it would like to:

* receive and/or comment on the proposal regarding Tribunal consultations referred to the directions; and
* Be notified of and/or participating in the Tribunal consultations in this review in the even that CPMM do not intervene in the Tribunal review.

1. By letter dated 12 September 2016, BHP Billiton Petroleum (Australia) Pty Ltd made the following request:

Notwithstanding the indication date of Monday, 5 September 2016, BHPB requests to receive/and or comment of proposal regarding the Tribunal’s public consultations referred to above and expresses and interest in being notified or and/or participating in the Tribunal’s public consultations in this review in the event that BHPB do not intervene in the Tribunal review.

1. No other responses to the ERA’s letter were received.
2. The Tribunal then issued a formal invitation to consult in the following terms:

**Re: ACT 9 of 2016: DBNGP WA Pipeline Trust and DBNGP (WA) Transmission Pty Ltd**

**Invitation to Consult**

The Australian Competition Tribunal is inviting:

* users and prospective users of the Dampier Bunbury Natural Gas Pipeline services; and
* any user or consumer associations or user or consumer interest groups,

to consult with the Tribunal before it determines the application by the owner and operator of the pipeline to review a determination by the Economic Regulation Authority of Western Australia (the ERA) on the revenue they may earn from the operation of the pipeline from 1 January 2016 to 31 December 2020. You are being sent this invitation because you fall within the class of invitees referred to above.

**Date, time and place**

The public consultation forum will be held on **Wednesday 7 December 2016**, from 10.15 am to 5.00 pm in the Amenities Room, Level 2, at the **Peter Durack Commonwealth Law Courts Building, 1 Victoria Avenue, Perth, Western Australia**.

**RSVP**

To participate in the consultations you must provide the following information to the Tribunal Registry by email at registry@competitiontribunal.gov.au by 3.00 pm AWST on Thursday 1 December 2016.

* your contact details (including name, telephone number and email address);
* the details of any association or group that you represent;
* the topics you wish to address in your submission;
* if you are or represent an association or a group, the name and role of one nominated speaker and the names and roles of other members who will be attending; and
* whether you will be participating:
  + as current and prospective users of the relevant services;
  + as a representative of a user or consumer association;
  + as a representative of a user or consumer interest group; or
  + in some other capacity and, if so, what capacity.

**Written submissions prior to registration deadline**

In lieu of attendance, the Tribunal will accept written submissions that are provided to the Tribunal Registry by email at registry@competitiontribunal.gov.au in accordance with section 1.4 of the enclosed protocol and by no later than **3.00 pm AWST on Thursday 1 December 2016.**

**Further information**

Enclosed you will find a copy of the Explanatory Guide for participants in the Tribunal’s Public Consultation Forum and the Protocol for the Public Consultation. These documents will provide important information for participants in the public consultation.

The ERA’s determination may be found on its website, www.erawa.com.au, together with the material it took into account in making its determination.

The application for review and submissions in support of it may be found on the Tribunal’s website, www.competitiontribunal.gov.au together with the context of, and arrangements for, the consultations and matters that a participant may want to consider in preparing a presentation to the Tribunal.

**Yours sincerely**

**Tim Luxton**

**Registrar**

**Australian Competition Tribunal**

1. This invitation was emailed to the six individuals referred to at [32] above on 7 November 2016. On 10 November 2016, a formal invitation was issued to the following interest groups, via email:
2. Luke Hoare, Principal Policy Advisor, Chamber of Commerce and Industry (WA);
3. Reg Howard-Smith, Chief Executive, Chamber of Minerals and Energy of WA (Inc); and
4. Chris Twomey, Director Social Policy, WA Council of Social Services.
5. In addition, a Notice in similar terms was posted on the Tribunal website. That Notice was publicly accessible. On 10 November 2016, Notices were published in both *The West Australian* and *The Australian* newspapers.
6. The Tribunal did not receive any registrations in response to its formal invitation to consult or in response to its public Notices by the registration deadline. Accordingly, the community consultation was cancelled by the Tribunal, as it was unnecessary in light of the above matters.
7. On or around 7 November 2016, a Notice was published on the Tribunal website in the following terms:

**Community Consultation**

In the matter of an application under section 245 of the National Gas Access (Western Australia) Law for a review of the decision made by the Economic Regulation Authority of Western Australia to give effect to its proposed revisions to an access arrangement for the Dampier to Bunbury Natural Gas Pipeline, pursuant to rule 64 of the National Gas Rules.

**DBNGP WA Pipeline Trust and DBNGP (WA) Transmission Pty Ltd (ACT 9 of 2016)**

As no registrations for the Public Consultation Forum in ACT 9 of 2016 were received by the Tribunal by **3.00 pm AWST on Thursday 1 December 2016**, the Public Consultation Forum has now been cancelled by the Tribunal.

# The Relevant Legislative Background

## The Relevant Provisions

### The WA Act

1. Section 3(2) of the WA Act provides that words and expressions used in the NGL(WA) (whether or not defined in s 9(1) of the WA Act) and in the WA Act have the same respective meanings in the WA Act as they have in the NGL(WA).
2. Section 3(3) of the WA Act provides that the provisions of s 3 of that Act do not apply to the extent that the context or subject matter otherwise indicates or requires.
3. Section 6B(1) of the WA Act provides that the *Interpretation Act 1984* (WA) does not apply to the NGL(WA), to regulations under Pt 3 of the WA Act or to Rules under the NGL(WA) (ie the NGR).
4. Section 7 of the WA Act provides:

**7. National Gas Access (Western Australia) Law**

(1) The Western Australian National Gas Access Law text —

(a) applies as a law of Western Australia; and

(b) as so applying may be referred to as the National Gas Access (Western Australia) Law.

(2) In subsection (1) —

***Western Australian National Gas Access Law*** ***text*** means the text that results from modifying the National Gas Law, as set out in the South Australian Act Schedule for the time being in force, to give effect to section 7A(3) and (4) and Schedule 1.

1. Section 9(3) provides that the *Acts Interpretation Act 1915* (SA) and certain other South Australian Acts do not apply to the NGL as set out in the Schedule to the *National Gas (South Australia) Act 2008* (SA) in its application with modifications, as a law of WA.

### The NGL(WA)

1. The following definitions contained in s 2 of the NGL(WA) are relevant:

***access arrangement*** means an arrangement setting out terms and conditions about access to pipeline services provided or to be provided by means of a pipeline;

***access determination*** means a determination of the dispute resolution body under Chapter 6 Part 3 and includes a determination varied under Part 4 of that Chapter;

***applicable access arrangement*** means a limited access arrangement or full access arrangement that has taken effect after being approved or made by the AER under the Rules and includes an applicable access arrangement as varied—

(a) under the Rules; or

(b) by an access determination as provided by this Law or the Rules;

***applicable access arrangement*** ***decision*** means—

(a) a full access arrangement decision; or

(b) a limited access arrangement decision;

***covered pipeline*** means a pipeline—

(a) to which a coverage determination applies; or

(b) deemed to be a covered pipeline by operation of section 126 or 127;

***covered pipeline service provider*** means a service provider that provides or intends to provide pipeline services by means of a covered pipeline;

***designated pipeline*** means a pipeline classified by the Regulations, or designated in the application Act of a participating jurisdiction, as a designated pipeline;

**Note**—

A light regulation determination cannot be made in respect of pipeline services provided by means of a designated pipeline: see sections 109 and 111.

***designated reviewable regulatory decision*** means an applicable access arrangement decision (other than a full access arrangement decision that does not approve a full access arrangement);

***draft Rule determination*** means a determination of the AEMC under section 308;

***ERA*** means the Economic Regulation Authority established by section 4 of the *Economic Regulation Authority Act 2003* of Western Australia;

***final Rule determination*** means a determination of the AEMC under section 311;

***full access arrangement*** means an access arrangement that—

(a) provides for price or revenue regulation as required by the Rules; and

(b) deals with all other matters for which the Rules require provision to be made in an access arrangement;

***full access arrangement decision*** means a decision of the AER under the Rules that—

(a) approves or does not approve a full access arrangement or revisions to an applicable access arrangement submitted to the AER under section 132 or the Rules; or

(b) makes a full access arrangement—

(i) in place of a full access arrangement the AER does not approve in that decision; or

(ii) because a service provider does not submit a full access arrangement in accordance with section 132 or the Rules;

(c) makes revisions to an access arrangement—

(i) in place of revisions submitted to the AER under section 132 that the AER does not approve in that decision; or

(ii) because a service provider does not submit revisions to the AER under section 132;

***national gas legislation*** means—

(a) the *National Gas (South Australia) Act 2008* of South Australia and Regulations in force under that Act; and

(b) the *National Gas (South Australia) Law*; and

(c) the *National Gas Access (Western Australia) Act 2008* of Western Australia; and

(d) the National Gas Access (Western Australia) Law within the meaning given in the *National Gas Access (Western Australia) Act 2008* of Western Australia; and

(e) Regulations made under the *National Gas Access (Western Australia) Act 2008* of Western Australia for the purposes of the National Gas Access (Western Australia) Law; and

(f) an Act of a participating jurisdiction (other than South Australia or Western Australia) that applies, as a law of that jurisdiction, any part of—

(i) the Regulations referred to in paragraph (a); or

(ii) the National Gas Law set out in the Schedule to the *National Gas (South Australia) Act 2008* of South Australia; and

(g) the National Gas Law set out in the Schedule to the *National Gas (South Australia) Act 2008* of South Australia as applied as a law of a participating jurisdiction (other than South Australia or Western Australia); and

(h) the Regulations referred to in paragraph (a) as applied as a law of a participating jurisdiction (other than South Australia or Western Australia);

***national gas objective*** means the objective set out in section 23;

***National Gas Rules or Rules*** means—

(a) the initial National Gas Rules; and

(b) Rules made by the AEMC under this Law, including Rules that amend or revoke—

(i) the initial National Gas Rules; or

(ii) Rules made by it;

***old access law*** means Schedule 1 to the *Gas Pipelines Access (Western Australia) Act 1998* as in force from time to time before the commencement of section 30 of the *National Gas Access (WA) Act 2009*;

***old scheme classification or determination*** means a classification or determination under section 10 or 11 of the old access law in force at any time before the repeal of the old access law;

***old scheme distribution pipeline*** means a pipeline that was, at any time before the repeal of the old access law—

(a) a distribution pipeline as defined in that law; and

(b) a covered pipeline as defined in the Gas Code;

***old scheme transmission pipeline*** means a pipeline that was, at any time before the repeal of the old access law—

(a) a transmission pipeline as defined in that law; and

(b) a covered pipeline as defined in the Gas Code;

***pipeline*** means—

(a) a pipe or system of pipes for the haulage of natural gas, and any tanks, reservoirs, machinery or equipment directly attached to that pipe or system of pipes; or

(b) a proposed pipe or system of pipes for the haulage of natural gas, and any proposed tanks, reservoirs, machinery or equipment proposed to be directly attached to the proposed pipe or system of pipes; or

(c) a part of a pipe or system of pipes or proposed pipe or system of pipes referred to in paragraph (a) or (b),

but does not include—

(d) unless paragraph (e) applies, anything upstream of a prescribed exit flange on a pipeline conveying natural gas from a prescribed gas processing plant; or

(e) if a connection point upstream of an exit flange on such a pipeline is prescribed, anything upstream of that point; or

(f) a gathering system operated as part of an upstream producing operation; or

(g) any tanks, reservoirs, machinery or equipment used to remove or add components to or change natural gas (other than odourisation facilities) such as a gas processing plant; or

(h) anything downstream of a point on a pipeline from which a person takes natural gas for consumption purposes;

***pipeline service*** means—

(a) a service provided by means of a pipeline, including—

(i) a haulage service (such as firm haulage, interruptible haulage, spot haulage and backhaul); and

(ii) a service providing for, or facilitating, the interconnection of pipelines; and

(b) a service ancillary to the provision of a service referred to in paragraph (a),

but does not include the production, sale or purchase of natural gas or processable gas;

***price or revenue regulation*** means regulation of—

(a) the prices, charges or tariffs for pipeline services to be, or that are to be, provided; or

(b) the revenue to be, or that is to be, derived from the provision of pipeline services;

***regulator*** has the meaning given to that term in section 9(1) of the *National Gas Access (WA) Act 2009*;

***relevant Regulator*** has the same meaning as in section 2 of the old access law;

***revenue and pricing principles*** means the principles set out in section 24;

***reviewable regulatory decision*** has the meaning given by section 244;

***scheme pipeline*** means—

(a) a covered pipeline; or

(b) an international pipeline to which a price regulation exemption applies;

***service provider*** has the meaning given by section 8;

***transmission pipeline*** means a pipeline that is classified in accordance with this Law or the Rules as a transmission pipeline and includes any extension to, or expansion of the capacity of, such a pipeline when it is a covered pipeline that, by operation of an applicable access arrangement or under this Law, is to be treated as part of the pipeline;

**Note**—

See also sections 18 and 19.

***Tribunal*** means the Australian Competition Tribunal referred to in the *Trade Practices Act 1974* of the Commonwealth and includes a member of the Tribunal or a Division of the Tribunal performing functions of the Tribunal;

1. Section 2A of the NGL(WA) provides:

**2A. Meaning of AER modified**

(1) In this Law, other than in the definition of ***AER*** in section 2, a reference to the AER is to be read as a reference to the regulator (whether the ERA or the AER) except to the extent that subsection (2) gives a different meaning.

(2) To the extent to which a reference to the AER is capable of being read as a reference to the Australian Energy Regulator established by section 44AE of the *Trade Practices Act 1974* of the Commonwealth acting as the disputes resolution body, the term is to be read as having or including that meaning.

*[Section 2A inserted by WA Act Sch. 1 cl. 4.]*

1. In effect, for present purposes, pursuant to s 9(1) of the WA Act, the ERA is designated as the relevant regulator and references to the Australian Energy Regulator (**AER**) in the NGL(WA) and in the NGR should be read as references to the ERA.
2. Sections 8, 9 and 10 of the NGL(WA) provide:

**8. Meaning of service provider**

(1) A service provider is a person who—

(a) owns, controls or operates; or

(b) intends to own, control or operate,

a pipeline or scheme pipeline, or any part of a pipeline or scheme pipeline.

**Note—**

A service provider must not provide pipeline services by means of a scheme pipeline unless the service provider is a legal entity of a specified kind: See section 131, and section 169 where the scheme pipeline is an international pipeline to which a price regulation exemption applies.

(2) A gas market operator that controls or operates (without at the same time owning)—

(a) a pipeline or scheme pipeline; or

(b) a part of a pipeline or scheme pipeline,

is not to be taken to be a service provider for the purposes of this Law.

**9. Passive owners of scheme pipelines deemed to provide or intend to provide pipeline services**

(1) This section applies to a person who owns a scheme pipeline but does not provide or intend to provide pipeline services by means of that pipeline.

(2) The person is, for the purposes of this Law, deemed to provide or intend to provide pipeline services by means of that pipeline even if the person does not, in fact, do so.

**10. Things done by 1 service provider to be treated as being done by all of service provider group**

(1) This section applies if—

(a) more than 1 service provider (a ***service provider group***) carries out a controlling pipeline activity in respect of a pipeline (or a part of a pipeline); and

(b) under this Law or the Rules a service provider is required or allowed to do a thing.

(2) A service provider of the service provider group (the ***complying service provider***) may do that thing on behalf of the other service providers of the service provider group if the complying service provider has the written permission of all of the service providers of that group to do that thing on behalf of the service provider group.

(3) Unless this Law or the Rules otherwise provide, on the doing of a thing referred to in subsection (2) by a complying service provider, the service providers of the service provider group on whose behalf the complying service provider does that thing, must, for the purposes of this Law and the Rules, each be taken to have done the thing done by the complying service provider.

(4) This section does not apply to a thing required or allowed to be done under section 131 or Chapter 4 Part 2.

(5) In this section—

***controlling pipeline activity*** means own, control or operate.

1. Here, the owners are *“service providers”* within s 8 of the NGL(WA).
2. Section 20 of the NGL(WA) provides:

**20. Interpretation generally**

Schedule 2 to this Law applies to this Law, the Regulations and the Rules and any other statutory instrument made under this Law.

The *“Regulations”* referred to in s 20 are the regulations made under Pt 3 of the *National Gas Access (WA) Act 2009* that apply as a law of Western Australia. As already noted, we shall refer to those Regulations as *“the Regs”*.

1. Schedule 2 to the NGL(WA) contains detailed rules governing the interpretation of the NGL(WA), the NGR and the Regs.
2. Chapter 1, Pt 3 and Pt 4 of the NGL(WA) provide:

**Part 3 — National gas objective and principles**

**Division 1 — National gas objective**

**23. National gas objective**

The objective of this Law is to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.

**Division 2 — Revenue and pricing principles**

**24. Revenue and pricing principles**

(1) The revenue and pricing principles are the principles set out in subsections (2) to (7).

(2) A service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in—

(a) providing reference services; and

(b) complying with a regulatory obligation or requirement or making a regulatory payment.

(3) A service provider should be provided with effective incentives in order to promote economic efficiency with respect to reference services the service provider provides. The economic efficiency that should be promoted includes—

(a) efficient investment in, or in connection with, a pipeline with which the service provider provides reference services; and

(b) the efficient provision of pipeline services; and

(c) the efficient use of the pipeline.

(4) Regard should be had to the capital base with respect to a pipeline adopted—

(a) in any previous—

(i) full access arrangement decision; or

(ii) decision of a relevant Regulator under section 2 of the Gas Code;

(b) in the Rules.

(5) A reference tariff should allow for a return commensurate with the regulatory and commercial risks involved in providing the reference service to which that tariff relates.

(6) Regard should be had to the economic costs and risks of the potential for under and over investment by a service provider in a pipeline with which the service provider provides pipeline services.

(7) Regard should be had to the economic costs and risks of the potential for under and over utilisation of a pipeline with which a service provider provides pipeline services.

**Division 3 — MCE policy principles**

**25. MCE statements of policy principles**

(1) Subject to this section, the MCE may issue a statement of policy principles in relation to any matters that are relevant to the exercise and performance by the AEMC of its functions and powers in—

(a) making a Rule; or

(b) conducting a review under section 83.

(2) Before issuing a statement of policy principles, the MCE must be satisfied that the statement is consistent with the national gas objective.

(3) As soon as practicable after issuing a statement of policy principles, the MCE must give a copy of the statement to the AEMC.

(4) The AEMC must publish the statement in the South Australian Government Gazette and on its website as soon as practicable after it is given a copy of the statement.

**Part 4 — Operation and effect of National Gas Rules**

**26. National Gas Rules to have force of law**

The National Gas Rules have the force of law in this jurisdiction.

1. The National Gas Objective (**NGO**) is the ultimate goal or objective of the national gas regulatory scheme. The revenue and pricing principles (**RPP**) are set out in s 24. Those principles bind the ERA in its regulatory decision-making.
2. Sections 27 and 28 describe the functions and powers of the ERA and the manner in which it must exercise those functions and powers. In the NGL(WA), those sections refer to the AER but, as we already mentioned at [49] above, by reason of the operation of s 2A of the NGL and s 9(1) of the WA Act, those provisions are applied to the ERA for the purposes of the NGL(WA).
3. Section 28(1)(a) requires the ERA, in performing or exercising an ERA economic regulatory function or power under the NGL(WA), to perform or exercise that function or power in a manner that will, or is likely to, contribute to the achievement of the NGO and, amongst other things, if there are two or more possible designated reviewable regulatory decisions that will, or are likely to, contribute to the NGO, the ERA must make the decision that it is satisfied will, or is likely to, contribute to the NGO to the greatest degree and must specify its reasons for that conclusion.
4. Under s 28(2), the ERA must take into account the RPP when making an access determination relating to a rate or charge for a pipeline service and may take into account those principles when performing or exercising any other ERA economic regulatory function or power, if the ERA considers it appropriate to do so.
5. Section 68C of the NGL(WA) requires the ERA to keep a written record of *“decision related matter”.* That section is in the following terms:

**68C. Record of designated reviewable regulatory decisions**

(1) The AER must, in making a designated reviewable regulatory decision, keep a written record of decision related matter.

(2) In this section —

***decision related matter***, in relation to a designated reviewable regulatory decision, means —

(a) the decision and the written record of it and any written reasons for it (including (if relevant) the reasons of the [ERA] for a decision of the [ERA] not to approve the access arrangement or proposed revisions to the applicable access arrangement (as the case may be)); and

(b) any document, proposal or information required or allowed under the Rules to be submitted as part of the process for the making of the decision; and

(c) any written submissions made to the [ERA] after the proposed access arrangement or proposed revisions to the applicable access arrangement (as the case may be) to which the decision relates were submitted to the [ERA] and before the decision was made; and

(d) any reports and materials (including (but not limited to) consultant reports, data sets, models or other documents) considered by the [ERA] in making the decision; and

(e) any draft of the decision that has been released for public consultation (including (if relevant) a draft of the reasons of the [ERA] for a decision of the [ERA] not to approve the access arrangement or proposed revisions to the applicable access arrangement (as the case may be)); and

(f) any submissions on the draft of the decision or the decision itself (including (if relevant) submissions on the draft of the reasons of the [ERA] for a decision of the [ERA] not to approve the access arrangement or proposed revisions to the applicable access arrangement (as the case may be)) considered by the[ERA]; and

(g) the transcript of any hearing (if any) conducted by the [ERA] for the purpose of making the decision.

*[Section 68C inserted see SA Act No. 79 of 2013 s. 21 and WA Gazette 14 Mar 2014 p. 632.]*

1. Chapter 2, Pt 2 of the NGL(WA) (s 69 to s 86) sets out the functions and powers of the Australian Energy Market Commission (**AEMC**), including its rule-making power.
2. Section 91 of the NGL(WA) provides:

**Part 5—Functions and powers of Tribunal**

**91. Functions and powers of Tribunal under this Law**

(1) The Tribunal has the functions and powers conferred on it under Chapter 8 Part 5 and any Regulations made for the purposes of that Division.

(2) The Tribunal has power to do all things necessary or convenient to be done for or in connection with the performance of its functions.

1. References in s 91 to *“the Tribunal”* are references to the Australian Competition Tribunal.
2. Chapter 8, Pt 5 of the NGL(WA) (s 244 to s 270), sets out the principles which govern merits review and other non-judicial review of regulator decisions.
3. An application for review of a reviewable regulatory decision must be made in accordance with the requirements of s 245 of the NGL(WA).
4. Section 246 provides:

**246. Grounds for review**

(1) An application under section 245(1) may be made only on 1 or more of the following grounds:

(a) the original decision maker made an error of fact in the decision maker’s findings of facts, and that error of fact was material to the making of the decision;

(b) the original decision maker made more than 1 error of fact in the decision maker’s findings of facts, and those errors of fact, in combination, were material to the making of the decision;

(c) the exercise of the original decision maker’s discretion was incorrect, having regard to all the circumstances;

(d) the original decision maker’s decision was unreasonable, having regard to all the circumstances.

(1a) An application under section 245(1) that relates to a designated reviewable regulatory decision must also specify the manner in which a determination made by the Tribunal varying the designated reviewable regulatory decision, or setting aside the designated reviewable regulatory decision and a fresh decision being made by the AER following remission of the matter to the AER by the Tribunal, on the basis of 1 or more grounds raised in the application, either separately or collectively, would, or would be likely to, result in a materially preferable designated NGO decision.

(2) It is for the applicant to establish a ground listed in subsection (1) and the matter referred to in subsection (1a).

*[Section 246 amended see SA Act No. 79 of 2013 s. 23 and WA Gazette 14 Mar 2014 p. 632.]*

1. Sections 248 to 251 set out the principles which the Tribunal must apply in considering whether or not to grant leave as required under s 245.
2. Section 252 provides that an application under s 245(1) does not stay the operation of an applicable access arrangement decision approving or making an applicable access arrangement (see subs (a)(i)).
3. Section 258A of the NGL(WA) specifies the matters that may and may not be raised in a review in respect of one or more designated reviewable regulatory decisions. That section provides as follows:

**258A. Matters that may and may not be raised in a review (designated reviewable regulatory decisions)**

(1) This section applies to a designated reviewable regulatory decision.

(2) The AER, in a review of a decision to which this section applies, may —

(a) respond to any matter raised by the applicant or an intervener; and

(b) raise any other matter that relates to —

(i) a ground for review; or

(ii) a matter raised in support of a ground for review; or

(iii) a matter relevant to the issues to be considered under section 259(4a) and (4b).

(3) In a review of a decision to which this section applies, the following provisions apply in relation to a person or body, other than the AER (and so apply at all stages of the proceedings before the Tribunal):

(a) a covered pipeline service provider that provides the pipeline services to which the decision being reviewed applies may not raise in relation to the issue of whether a ground for review exists or has been made out any matter that was not raised and maintained by the provider in submissions to the AER before the decision was made;

(b) a covered pipeline service provider whose commercial interests are materially affected by the decision being reviewed may not raise in relation to the issue of whether a ground for review exists or has been made out any matter that was not raised and maintained by the provider in submissions to the AER before the decision was made;

(c) an affected or interested person or body (other than a provider under paragraph (a) or (b)) may not raise in relation to the issue of whether a ground for review exists or has been made out any matter that was not raised by the person or body in a submission to the AER before the decision was made;

(d) subject to paragraphs (a), (b) and (c) —

(i) the applicant, or an intervener who has raised a new ground for review under section 256, may raise any matter relevant to the issues to be considered under section 259(4a) and (4b); and

(ii) any person or body, other than the applicant or an intervener who has raised a new ground for review under section 256, may not raise any matter relevant to the issues to be considered under section 259(4a) and (4b) unless it is in response to a matter raised by —

(A) the AER under subsection (2)(b)(iii); or

(B) the applicant under subparagraph (i); or

(C) an intervener under subparagraph (i).

(4) For the purposes of subsection (3)(d) —

(a) a reference to an applicant includes a reference to a person or body who has applied to the Tribunal for leave to apply for a review under this Division; and

(b) a reference to an intervener includes a reference to a person or body who has applied to the Tribunal for leave to intervene in a review under this Division.

*[Section 258A inserted see SA Act No. 79 of 2013 s. 29 and WA Gazette 14 Mar 2014 p. 632.]*

1. The powers of the Tribunal in respect of merits review by it of designated reviewable regulatory decisions are set out in s 259. That section is in the following terms:

**259. Tribunal must make determination**

(1) If, following an application, the Tribunal grants leave in accordance with section 245, the Tribunal must make a determination in respect of the application.

**Note—**

See section 260 for the time limit within which the Tribunal must make its determination.

(2) Subject to subsections (4) and (4a), a determination under this section may —

(a) affirm the reviewable regulatory decision; or

(b) vary the reviewable regulatory decision; or

(c) set aside the reviewable regulatory decision and remit the matter back to the original decision maker to make the decision again in accordance with any direction or recommendation of the Tribunal.

(3) For the purposes of making a determination of the kind in subsection (2)(a) or (b), the Tribunal may perform all the functions and exercise all the powers of the original decision maker under this Law or the Rules.

(4) In deciding whether to remit a matter back to the original decision maker to make the decision again, other than in a case where the decision is a designated reviewable regulatory decision, the Tribunal must have regard to the nature and relative complexities of—

(a) the reviewable regulatory decision; and

(b) the matter the subject of the review.

(4a) In a case where the decision is a designated reviewable regulatory decision, the Tribunal may only make a determination —

(a) to vary the designated reviewable regulatory decision under subsection (2)(b); or

(b) to set aside the designated reviewable regulatory decision and remit the matter back to the AER under subsection (2)(c),

if —

(c) the Tribunal is satisfied that to do so will, or is likely to, result in a decision that is materially preferable to the designated reviewable regulatory decision in making a contribution to the achievement of the national gas objective (a ***materially preferable designated NGO decision***) (and if the Tribunal is not so satisfied the Tribunal must affirm the decision); and

(d) in the case of a determination to vary the designated reviewable regulatory decision—the Tribunal is satisfied that to do so will not require the Tribunal to undertake an assessment of such complexity that the preferable course of action would be to set aside the decision and remit the matter to the AER to make the decision again.

(4b) In connection with the operation of subsection (4a) (and without limiting any other matter that may be relevant under this Law) —

(a) the Tribunal must consider how the constituent components of the designated reviewable regulatory decision interrelate with each other and with the matters raised as a ground for review; and

(b) without limiting paragraph (a), the Tribunal must take into account the revenue and pricing principles (in the same manner in which the AER is to take into account these principles under section 28); and

(c) the Tribunal must, in assessing the extent of contribution to the achievement of the national gas objective, consider the designated reviewable regulatory decision as a whole; and (d) the following matters must not, in themselves, determine the question about whether a materially preferable designated NGO decision exists:

(i) the establishment of a ground for review under section 246(1);

(ii) consequences for, or impacts on, the average annual regulated revenue of a covered pipeline service provider;

(iii) that the amount that is specified in or derived from the designated reviewable regulatory decision exceeds the amount specified in section 249(2).

(4c) If the Tribunal makes a determination under subsection (2)(b) or (c), the Tribunal must specify in its determination —

(a) the manner in which it has taken into account the interrelationship between the constituent components of the designated reviewable regulatory decision and how they relate to the matters raised as a ground for review as contemplated by subsection (4b)(a); and

(b) in the case of a determination to vary the designated reviewable regulatory decision—the reasons why it is proceeding to make the variation in view of the requirements of subsection (4a)(d).

(5) A determination by the Tribunal affirming, varying or setting aside the reviewable regulatory decision is, for the purposes of this Law (other than this Part), to be taken to be a decision of the original decision maker.

*[Section 259 amended see SA Act No. 79 of 2013 s. 30 and WA Gazette 14 Mar 2014 p. 632.]*

1. Section 261 of the NGL(WA) specifies the matters that are to be considered by the Tribunal in making its determination. That section is in the following terms:

**261. Matters to be considered by Tribunal in making determination**

(1) Subject to this section, the Tribunal, in acting under this Division in relation to a reviewable regulatory decision —

(a) must not consider any matter other than review related matter (and any matter arising as a result of consultation under paragraph (b)); and

(b) must, before making a determination that relates to a designated reviewable regulatory decision, take reasonable steps to consult with (in such manner as the Tribunal thinks appropriate) —

(i) users and prospective users of the pipeline services; and

(ii) any user or consumer associations or user or consumer interest groups,

that the Tribunal considers have an interest in the determination, other than a user or consumer association or a user or consumer interest group that is a party to the review.

(1) Subject to this section, the Tribunal, in reviewing a reviewable regulatory decision, must not consider any matter other than review related matter.

*[(2) deleted]*

(3) If in a review, other than a review that relates to a designated reviewable regulatory decision, the Tribunal is of the view that a ground of review has been made out, the Tribunal may allow new information or material to be submitted if the new information or material—

(a) would assist it on any aspect of the determination to be made; and

(b) was not unreasonably withheld from—

(i) in all cases, the original decision maker when the decision maker was making the reviewable regulatory decision; and

(ii) in the case of a reviewable regulatory decision that is a Ministerial coverage decision, the NCC when it was it making the NCC recommendation related to Ministerial coverage decision.

(3a) If in a review that relates to a designated reviewable regulatory decision the Tribunal is of the view that a ground for review has been made out, the Tribunal may, on application by a party to the review, allow new information or material to be submitted if the party can establish to the satisfaction of the Tribunal that the information or material —

(a) was publicly available or known to be publicly available to the AER when it was making the designated reviewable regulatory decision; or

(b) would assist the Tribunal on any aspect of the determination to be made and was not unreasonably withheld from the AER when it was making the designated reviewable regulatory decision,

and was (in the opinion of the Tribunal) information or material that the AER would reasonably have been expected to have considered when it was making the designated reviewable regulatory decision.

(3b) In addition, if in a review of a designated reviewable regulatory decision the Tribunal is of the view —

(a) that a ground for review has been made out; and

(b) that it would assist the Tribunal to obtain information or material under this subsection in order to determine whether a materially preferable designated NGO decision exists,

the Tribunal may, on its own initiative, take steps to obtain that information or material (including by seeking evidence from such persons as it thinks fit).

(3c) The action taken by a person acting in response to steps taken by the Tribunal under subsection (3b) must be limited to considering decision related matter under section 68C.

(3d) In addition, in the case of a review of a designated reviewable regulatory decision that is a decision to make a full access arrangement decision in place of an access arrangement that the AER did not approve, the Tribunal may consider the reasons of the AER for its decision not to approve the access arrangement or proposed revisions to the applicable access arrangement (as the case may be).

(4) Subject to this Law, for the purpose of subsection (3)(b) and (3a)(b), information or material not provided to the original decision maker, the NCC or the AER (as the case requires) following a request for that information or material by the original decision maker, the NCC or the AER under this Law or the Rules is to be taken to have been unreasonably withheld.

(5) Subsection (4) does not limit what may constitute an unreasonable withholding of information or material.

*[(6) deleted]*

(7) In this section—

***review related matter*** means —

(a) the application for review; and

(b) a notice raising new grounds for review filed by an intervener; and

(c) the submissions made to the Tribunal by the parties to the review; and

(d) —

(i) in the case of a designated reviewable regulatory decision — decision related matter under section 68C; or

(ii) in any other case —

(A) the reviewable regulatory decision and the written record of it and any written reasons for it; and

(B) any written submissions made to the original decision maker before the reviewable regulatory decision was made or the NCC before the making of an NCC recommendation; and

(C) any reports and materials relied on by the original decision maker in making the reviewable regulatory decision or the NCC in making an NCC recommendation; and

(D) any draft of the reviewable regulatory decision or NCC recommendation; and

(E) any submissions on —

• the draft of the reviewable regulatory decision or the reviewable regulatory decision itself considered by the original decision maker; or

• the draft of an NCC recommendation or the NCC recommendation itself considered by the NCC; and

(F) the transcript of any hearing (if any) conducted by the original decision maker for the purpose of making the reviewable regulatory decision; and

(e) any other matter properly before the Tribunal in connection with the relevant proceedings.

*[Section 261 amended see SA Act No. 79 of 2013 s. 31 and WA Gazette 14 Mar 2014 p. 632.]*

1. In the present case, the final decision is a designated reviewable regulatory decision so that s 261(7)(d)(i) applies (not s 261(7)(d)(ii)).
2. Chapter 9, Pt 1, Div 2 stipulates the tests for rule making by the AEMC. The AEMC may only make a Rule if it is satisfied that the Rule will or is likely to contribute to the achievement of the NGO.
3. Clause 1 of Sch 2 to the NGL(WA) provides:

**1. Displacement of Schedule by contrary intention**

(1) The application of this Schedule to this Law, the Regulations or other statutory instrument (other than the National Gas Rules) may be displaced, wholly or partly, by a contrary intention appearing in this Law or the Regulations or that statutory instrument.

(2) The application of this Schedule to the National Gas Rules (other than clauses 7, 12, 15, 17, 19 and 20, 23 to 26 and 31 to 44, 49, 52 and 53 of this Schedule) may be displaced, wholly or partly, by a contrary intention appearing in the National Gas Rules.

1. Clause 4 of Sch 2 is in the following terms:

**4. Material that is, and is not, part of Law**

(1) The heading to a Chapter, Part, Division or Subdivision into which this Law is divided is part of this Law.

(2) A Schedule to this Law is part of this Law.

(3) A heading to a section or subsection of this Law does not form part of this Law.

(4) A note at the foot of a provision of this Law does not form part of this Law.

(5) An example (being an example at the foot of a provision of this Law under the heading “Example” or “Examples”) does not form part of this Law.

1. Clauses 7, 8 and 9 of Sch 2 to the WA Act are in the following terms:

**7. Interpretation best achieving Law’s purpose**

(1) In the interpretation of a provision of this Law, the interpretation that will best achieve the purpose or object of this Law is to be preferred to any other interpretation.

(2) Subclause (1) applies whether or not the purpose is expressly stated in this Law.

**8. Use of extrinsic material in interpretation**

(1) In this clause—

***Law extrinsic material*** means relevant material not forming part of this Law, including, for example—

(a) material that is set out in the document containing the text of this Law as printed by authority of the Government Printer of South Australia; and

(b) a relevant report of a committee of the Legislative Council or House of Assembly of South Australia that was made to the Legislative Council or House of Assembly of South Australia before the provision was enacted; and

(c) an explanatory note or memorandum relating to the Bill that contained the provision, or any relevant document, that was laid before, or given to the members of, the Legislative Council or House of Assembly of South Australia by the member bringing in the Bill before the provision was enacted; and

(d) the speech made to the Legislative Council or House of Assembly of South Australia by the member in moving a motion that the Bill be read a second time; and

(e) material in the Votes and Proceedings of the Legislative Council or House of Assembly of South Australia or in any official record of debates in the Legislative Council or House of Assembly of South Australia; and

(f) a document that is declared by the Regulations to be a relevant document for the purposes of this clause;

***ordinary meaning*** means the ordinary meaning conveyed by a provision having regard to its context in this Law and to the purpose of this Law;

***Rule extrinsic material*** means—

(a) a draft Rule determination; or

(b) a final Rule determination; or

(c) any document (however described)—

(i) relied on by the AEMC in making a draft Rule determination or final Rule determination; or

(ii) adopted by the AEMC in making a draft Rule determination or final Rule determination.

(2) Subject to subclause (3), in the interpretation of a provision of this Law, consideration may be given to Law extrinsic material capable of assisting in the interpretation—

(a) if the provision is ambiguous or obscure, to provide an interpretation of it; or

(b) if the ordinary meaning of the provision leads to a result that is manifestly absurd or is unreasonable, to provide an interpretation that avoids such a result; or

(c) in any other case, to confirm the interpretation conveyed by the ordinary meaning of the provision.

(3) Subject to subclause (4), in the interpretation of a provision of the Rules, consideration may be given to Law extrinsic material or Rule extrinsic material capable of assisting in the interpretation—

(a) if the provision is ambiguous or obscure, to provide an interpretation of it; or

(b) if the ordinary meaning of the provision leads to a result that is manifestly absurd or is unreasonable, to provide an interpretation that avoids such a result; or

(c) in any other case, to confirm the interpretation conveyed by the ordinary meaning of the provision.

(4) In determining whether consideration should be given to Law extrinsic material or Rule extrinsic material, and in determining the weight to be given to Law extrinsic material or Rule extrinsic material, regard is to be had to—

(a) the desirability of a provision being interpreted as having its ordinary meaning; and

(b) the undesirability of prolonging proceedings without compensating advantage; and

(c) other relevant matters.

**9. Compliance with forms**

(1) If a form is prescribed or approved by or for the purpose of this Law, strict compliance with the form is not necessary and substantial compliance is sufficient.

(2) If a form prescribed or approved by or for the purpose of this Law requires—

(a) the form to be completed in a specified way; or

(b) specified information or documents to be included in, attached to or given with the form; or

(c) the form, or information or documents included in, attached to or given with the form, to be verified in a specified way,

the form is not properly completed unless the requirement is complied with.

1. Clauses 11, 12 and 13 of Sch 2 provide:

**11. Provisions relating to defined terms and gender and number**

(1) If this Law defines a word or expression, other parts of speech and grammatical forms of the word or expression have corresponding meanings.

(2) Definitions in or applicable to this Law apply except so far as the context or subject matter otherwise indicates or requires.

(3) In this Law, words indicating a gender include each other gender.

(4) In this Law—

(a) words in the singular include the plural; and

(b) words in the plural include the singular.

**12. Meaning of may and must etc**

(1) In this Law, the word “may”, or a similar word or expression, used in relation to a power indicates that the power may be exercised or not exercised, at discretion.

(2) In this Law, the word “must”, or a similar word or expression, used in relation to a power indicates that the power is required to be exercised.

(3) This clause has effect despite any rule of construction to the contrary.

**13. Words and expressions used in statutory instruments**

(1) Words and expressions used in a statutory instrument have the same meanings as they have, from time to time, in this Law, or relevant provisions of this Law, under or for the purposes of which the instrument is made or in force.

(2) This clause has effect in relation to an instrument except so far as the contrary intention appears in the instrument.

1. References to *“the Law”* or *“this Law”* in cll 7, 8, 9, 11, 12 and 13 are references to the NGL(WA).
2. In summary, Sch 2 to the NGL(WA) requires that, unless displaced by a contrary intention appearing in the NGL(WA) or in the NGR (as may be appropriate), the following principles are to be applied to the interpretation of the NGL(WA), the NGR and the Regs:
3. The interpretation that will best achieve the purpose or object of the NGL(WA) is to be preferred to any other interpretation. That purpose or object need not be expressly stated in the NGL(WA) (cl 7 of Sch 2 to the NGL(WA)).
4. The NGO is the core or fundamental objective of the NGL(WA) and, as such, is to be regarded as within the expression *“the purpose or object of the* [NGL(WA)]*”*.
5. In the circumstances described in cl 8 of Sch 2 to the NGL(WA), resort may be had to the types of extrinsic material specified in cl 8 as an aid to the interpretation of a provision of the NGL(WA) or the NGR (as the case may be). Such resort can be had if:
   1. The relevant provision is ambiguous or obscure; or
   2. The ordinary meaning of the provision leads to a result that is manifestly absurd or unreasonable (a result which should be avoided); or
   3. To confirm the interpretation that is conveyed by the ordinary meaning of the provision

and the extrinsic material is capable of assisting in the interpretation. Subclause (4) of cl 8 must also be taken into account. That subclause is difficult to interpret. In our view, that subclause mandates that those charged with interpreting the NGL(WA) and the NGR must, when considering whether to have regard to extrinsic material, have regard to each of the three matters specified in subcl (4). A *“relevant matter”* within the meaning of cl 8(4)(c) is a matter which is to be determined by the decision maker to be relevant in an objective sense. If the decision maker does have regard to the three matters specified in subcl (4)(c), that person (or entity) must also have regard to those same three matters when determining the weight to be given to that extrinsic material.

1. Clause 7 and cl 8 of Sch 2 do not authorise a wholesale redrafting of the relevant provisions. The quest is always to find the correct interpretation of those provisions, not to embark upon an exposition of the decision maker’s view of what the provision should mean.
2. In the NGL(WA), the meaning of *“may”* and *“must”* is as specified in cl 12 of Sch 2 to the NGL(WA) notwithstanding any rule of construction to the contrary.
3. Except insofar as the contrary intention appears in a particular statutory instrument, words and expressions used in a statutory instrument made under the NGL(WA) have the same meaning as they have in the relevant provisions of the NGL(WA).
4. The interpretation statutes of South Australia and Western Australia do not apply to the NGL(WA) or to the NGR. Nor does the *Acts Interpretation Act 1901* (Cth). The essential governing principles for the interpretation of the NGL(WA) and the NGR are found in cll 7, 8, 11, 12 and 13 of Sch 2 to the NGL(WA). In our view, it does not assist the task of interpreting the NGL(WA) and the NGR for the Tribunal to resort to common law principles of statutory construction except (perhaps) as an aid to understanding how to interpret and apply the rules of interpretation laid down in Sch 2 to the NGL(WA).

### The NGR

1. Rule 3 in Pt 1 (Preliminary) contains various definitions.
2. For present purposes, the following definitions are pertinent:

***allowed rate of return*** see rule 87(1).

***allowed rate of return objective*** see rule 87(3).

***full access arrangement proposal*** means an access arrangement proposal consisting of, or relating to, a full access arrangement.

***interest rate*** means:

(a) the most recent 1 month Bank Bill Swap Reference Rate mid rate determined by the Australian Financial Markets Association, as identified by AEMO on its website; or

(b) if the above rate ceases to exist, or that rate becomes, in AEMO's reasonable opinion, inappropriate, the interest rate determined and published by AEMO on its website.

***rate of return guidelines*** means the guidelines made under rule 87.

1. Rule 8 describes in detail the standard consultative procedure which a decision maker must undertake if required to consult under the NGL(WA).
2. Part 8 (rr 40 to 68) of the NGR deals with access arrangements.
3. Rule 40 sets out the obligations which the ERA has in circumstances where it has no discretion under a particular provision of the NGL(WA), in circumstances where it has a limited discretion under that law and in circumstances where it has a full discretion under that law.
4. Rule 41 provides:

**41 Access arrangement proposal to be approved in its entirety or not at all**

(1) The AER’s approval of an *access arrangement proposal* implies approval of every element of the proposal.

(2) It follows that, if the AER withholds its approval to any *element of an access arrangement proposal*, the proposal cannot be approved.

1. Rule 42 to r 44 address the requirements as to the provision of access arrangement information.
2. Rule 46 governs the procedure for a full access arrangement proposal (s 132 of the NGL(WA)).
3. Rule 48 specifies the requirements for full access arrangements.
4. Rule 62 is in the following terms:

**62 Access arrangement final decision**

(1) After considering the submissions made in response to the access arrangement draft *decision* within the time allowed in the notice, and any other matters the AER considers relevant, the AER must make an access arrangement final decision.

(2) An access arrangement final *decision* is a *decision* to approve, or to refuse to approve, an *access arrangement proposal*.

(3) If the *access arrangement proposal* has been revised since its original submission, the access arrangement final *decision* relates to the proposal as revised.

(4) An access arrangement final *decision* must include a statement of the reasons for the *decision*.

(5) When the AER makes an access arrangement final *decision*, it must:

(a) give a copy of the *decision* to the service provider; and

(b) publish the *decision* on the AERis website and make it available for inspection, during business hours, at the AER's public offices.

(6) If an access arrangement final *decision* approves an *access arrangement proposal*, the access arrangement, or the revision or variation, to which the *decision* relates, takes effect on a date fixed in the final *decision* or, if no date is so fixed, 10 business days after the date of the final *decision*.

**Note:**

In the case of an *access arrangement revision proposal*, this date may, but will not necessarily, be the revision commencement date fixed in the access arrangement.

(7) An access arrangement final *decision* must be made within 6 months of the date of receipt of the *access arrangement proposal*.

(8) The time limit fixed by subrule (7) cannot be extended by more than a further 2 months.

1. Part 9 (rr 69 to 99) of the NGR governs the regulation of price and revenue.
2. Rules 72 to 75 provide as follows:

**72 Specific requirements for access arrangement information relevant to price and revenue regulation**

(1) The *access arrangement information* for a *full access arrangement proposal* (other than an *access arrangement variation proposal*) must include the following:

(a) if the *access arrangement period* commences at the end of an earlier *access arrangement period*:

(i) capital expenditure (by asset class) over the earlier *access arrangement period*; and

(ii) operating expenditure (by category) over the earlier *access arrangement period*; and

(iii) usage of the pipeline over the earlier *access arrangement period* showing:

(A) for a distribution pipeline, minimum, maximum and average demand and, for a transmission pipeline, minimum, maximum and average demand for each *receipt or delivery point*; and

(B) for a distribution pipeline, customer numbers in total and by tariff class and, for a transmission pipeline, user numbers for each *receipt or delivery point*;

(b) how the capital base is arrived at and, if the *access arrangement period* commences at the end of an earlier *access arrangement period*, a demonstration of how the capital base increased or diminished over the previous *access arrangement period*;

(c) the projected capital base over the *access arrangement period*, including:

(i) a forecast of conforming capital expenditure for the period and the basis for the forecast; and

(ii) a forecast of depreciation for the period including a demonstration of how the forecast is derived on the basis of the proposed depreciation method;

(d) to the extent it is practicable to forecast pipeline capacity and utilisation of pipeline capacity over the *access arrangement period*, a forecast of pipeline capacity and utilisation of pipeline capacity over that period and the basis on which the forecast has been derived;

(e) a forecast of operating expenditure over the *access arrangement period* and the basis on which the forecast has been derived;

(f) the key performance indicators to be used by the service provider to support expenditure to be incurred over the *access arrangement period*;

(g) the proposed return on equity, return on debt and *allowed rate of return*, for each regulatory year of the *access arrangement period*, in accordance with rule 87, including any departure from the methodologies set out in the *rate of return guidelines* and the reasons for that departure;

(ga) the proposed formula (if any) that is to be applied in accordance with rule 87(12);

(h) the estimated cost of corporate income tax calculated in accordance with rule 87A, including the proposed value of imputation credits referred to in that rule;

(i) if an incentive mechanism operated for the previous *access arrangement period*—the proposed carry-over of increments for efficiency gains or decrements for efficiency losses in the previous *access arrangement period* and a demonstration of how allowance is to be made for any such increments or decrements;

(j) the proposed approach to the setting of tariffs including:

(i) the suggested basis of reference tariffs, including the method used to allocate costs and a demonstration of the relationship between costs and tariffs; and

(ii) a description of any pricing principles employed but not otherwise disclosed under this rule;

(k) the service provider’s rationale for any proposed *reference tariff variation mechanism*;

(l) the service provider's rationale for any proposed incentive mechanism;

(m) the total revenue to be derived from pipeline services for each regulatory year of the *access arrangement period*.

(2) The *access arrangement information* for an *access arrangement variation proposal* related to a full access arrangement must include so much of the above information as is relevant to the proposal.

**73 Basis on which financial information is to be provided**

(1) Financial information must be provided on:

(a) a nominal basis; or

(b) a real basis; or

(c) some other recognised basis for dealing with the effects of inflation.

(2) The basis on which financial information is provided must be stated in the *access arrangement information*.

(3) All financial information must be provided, and all calculations made, consistently on the same basis.

**74 Forecasts and estimates**

(1) Information in the nature of a forecast or estimate must be supported by a statement of the basis of the forecast or estimate.

(2) A forecast or estimate:

(a) must be arrived at on a reasonable basis; and

(b) must represent the best forecast or estimate possible in the circumstances.

**75 Inferred or derivative information**

Information in the nature of an extrapolation or inference must be supported by the primary information on which the extrapolation or inference is based.

1. Rule 76 specifies that total revenue for each regulatory year is to be determined using the building block approach in which the building blocks set out in r 76 are deployed. That rule is in the following terms:

**76 Total revenue**

Total revenue is to be determined for each regulatory year of the *access arrangement period* using the building block approach in which the building blocks are:

(a) a return on the projected capital base for the year (See Divisions 4 and 5); and

(b) depreciation on the projected capital base for the year (See Division 6); and

(c) the estimated cost of corporate income tax for the year (See Division 5A); and

(d) increments or decrements for the year resulting from the operation of an incentive mechanism to encourage gains in efficiency (See Division 9); and

(e) a forecast of operating expenditure for the year (See Division 7).

1. Rules 77 tor 86 spell out the way in which the capital base and the projected capital base are to be determined for the purposes of r 76.
2. Rule 87 and r 87A of the NGR address the rate of return (r 87) and the estimated cost of corporate income tax (r 87A). We shall return to those rules when dealing with the specific grounds of review raised by the owners.
3. Rules 88 to 99 address other matters which are not relevant to the present Review Application.

# Relevant Authorities

1. The owners made a number of submissions directed to some of the key concepts relevant to the issues in the present matter.
2. Those submissions were accepted as correct by the ERA. We will summarise these submissions in the paragraphs which follow. We will also refer to two decisions of the Full Court which were handed down after the hearing in this matter had concluded.
3. The NGO is defined in s 2 and s 23 of the NGL(WA). Rule 100 of the NGR provides that provisions of an access arrangement must be consistent with the NGO and the NGR and the procedures as in force when the terms and conditions of the access arrangement are determined or revised.
4. In *Applications by Public Interest Advocacy Service Ltd and Ausgrid* [2016] ACompT 1 (*PIAC and Ausgrid*) at [77], the Tribunal said:

The ultimate objective reflected in the NEO and NGO is to direct the manner in which the national electricity market and the national natural gas market are regulated, that is, in the long term interests of consumers of electricity and natural gas respectively with respect to the matters specified. The provisions proceed on the legislative premise that their long term interests are served through the promotion of efficient investment in, and efficient operation and use of, electricity and natural gas services. This promotion is to be done “for” the long term interests of consumers. It does not involve a balance as between efficient investment, operation and use on the one hand and the long term interest of consumers on the other. Rather, the necessary legislative premise is that the long term interests of consumers will be served by regulation that advances economic efficiency.

1. As noted at [56]–[58] above, s 28 provides that the ERA must perform its economic regulatory function or power in the manner set forth in that section.
2. Section 28(2) and (3) of the NGL(WA) provides:

(2) In addition, the AER—

(a) must take into account the revenue and pricing principles—

(i) when exercising a discretion in approving or making those parts of an access arrangement relating to a reference tariff; or

(ii) when making an access determination relating to a rate or charge for a pipeline service; and

(b) may take into account the revenue and pricing principles when performing or exercising any other AER economic regulatory function or power, if the AER considers it appropriate to do so.

(3) For the purposes of subsection (2)(a)(ii), a reference to a “reference service” in the revenue and pricing principles must be read as a reference to a “pipeline service”.

1. The RPP in s 24 are set out at [54] above.
2. Section 246(1a) of the NGL(WA) provides that, in any application for review under s 245(1), the applicant must specify the manner in which a determination made by the Tribunal would, or would be likely to, result in a materially preferable designated NGO decision.
3. In the decisions of *Application by Energy Australia & Ors* [2009] ACompT 8 (*Energy Australia*) and *Re: Application by ElectraNet Pty Limited (No 3)* [2008] ACompT 3 (*ElectraNet No 3*), the Tribunal considered the RPP and the inter-relationship between the NEO/NGO and the RPP. Those decisions, together with *PIAC and Ausgrid*, confirm that the NGO and the RPP are complementary, such that a decision which is inconsistent with the RPP cannot be a decision that will or is likely to contribute to the achievement of the NGO.
4. At [75]–[78] in *Energy Australia*, the Tribunal observed:

The principles in s 7A can be taken to be consistent with and to promote the objectives in s 7. The principles are themselves stated normatively in the form of what is intended to be achieved. They state that the price charged by a Network Service Provider (‘NSP’) for its service should allow a return commensurate with the regulatory and commercial risks involved in providing the service in the context that the NSP should be provided with a reasonable opportunity to recover at least the efficient costs it incurs and with effective incentives in order to promote economic efficiency with respect to the services it provides. Economic efficiency includes efficient investment in the system with which it provides services, efficient provision of services, and efficient use of the system.

It is well accepted in the literature of regulatory economics and in regulatory practice that all these efficiency objectives are in principle met by setting prices for services that allow the recovery of efficient costs, including the cost of capital commensurate with the riskiness of the investment in the assets (infrastructure or ‘system’, as the term is used in the NEL) used to provide services.

It might be asked why the NEL principles require that the regulated NSP be provided with the opportunity to recover at least its efficient costs. Why ‘at least’? The issue of opportunity is critical to the answer. The regulatory framework does not guarantee recovery of costs, efficient or otherwise. Many events and circumstances, all characterised by various uncertainties, intervene between the ex ante regulatory setting of prices and the ex post assessment of whether costs were recovered. But if, as it were, the dice are loaded against the NSP at the outset by the regulator not providing the opportunity for it to recover its efficient costs (eg, by making insufficient provision for its operating costs or its cost of capital), then the NSP will not have the incentives to achieve the efficiency objectives, the achievement of which is the purpose of the regulatory regime.

Thus, given that the regulatory setting of prices is determined prior to ascertaining the actual operating environment that will prevail during the regulatory control period, the regulatory framework may be said to err on the side of allowing at least the recovery of efficient costs. This is in the context of no adjustment generally being made after the event for changed circumstances.

1. In similar vein, at [15] in *ElectraNet No 3*, the Tribunal said:

The national electricity objective provides the overarching economic objective for regulation under the Law: the promotion of efficient investment in the long term interests of consumers. Consumers will benefit in the long run if resources are used efficiently, i.e. resources are allocated to the delivery of goods and services in accordance with consumer preferences at least cost. As reflected in the revenue and pricing principles, this in turn requires prices to reflect the long run cost of supply and to support efficient investment, providing investors with a return which covers the opportunity cost of capital required to deliver the services.

1. In *PIAC and Ausgrid*, the Tribunal referred to *“the collective significance”* of the NEO and the NGO and the complementary RPP as explained in *ElectraNet No 3* and *Energy Australia.* In *PIAC and Ausgrid*, the Tribunal considered that the amendments to the NGL effected by the *Statutes Amendment (National Electricity and Gas Laws—Limited Merits Review) Act 2013* (SA) (**LMR Act**) did not change the meaning of the NGO or the RPP or their relationships. At [537], the Tribunal said:

It may be that the difference in views between the Networks NSW and the AER is semantic. The Tribunal, of course, accepts that there are matters of judgment about *how* the RPP (or a particular element of one of the principles) should be taken into account. It does not accept that, as perhaps the AER is saying, the NEO in its application may give rise to a result which means that a DNSP is *not* given a reasonable opportunity to recover at least its efficient costs in providing the direct control network services. As the Tribunal has sought to express in its Introductory remarks, it does not regard ss 7 and 7A as other than complementary so that the NEO may give rise to a reviewable regulatory decision which in fact is inconsistent with the RPP or one of the elements of the RPP.

1. Similarly, at [787], the Tribunal stated (relevantly):

… As the Tribunal has discussed, the NEO and the RPP operate together. It is not the case that the NEO means that, where the long term interests of consumers is relevant, the RPP must be ignored or suppressed. The assumption in the regulatory scheme is that the long term interests of consumers is served by ensuring that monopoly infrastructure providers are permitted to recover at least the efficient costs of providing those services and, broadly speaking, the AER’s role is to fix those efficient costs by reference to the proxy of the efficient costs of the competitive market. That is, of course, an oversimplification. …

1. We note that the LMR Act enacted reforms affecting the nature of the review to be undertaken by the Tribunal under Ch 8, Pt 5 of the NGL(WA) by limiting the Tribunal’s power to vary or set aside a determination to circumstances where a substituted decision would, or would be likely to, better serve the NGO.
2. As emphasised by the ERA in its submissions, in order to succeed in its Review Application:
3. The owners must establish that the ERA made an error of one of the four kinds stipulated in subpars (a) to (d) of s 246(1) of the NGL(WA) (s 246(1));
4. Where, as in the present case, the application relates to a *designated reviewable regulatory decision*, the owners must identify how addressing any errors which it establishes by varying or set aside the decision would, or would be likely to, result in a *“materially preferable designated NGO decision”* (s 246(1)(a));
5. The owners may not raise any *“matter”* (by way of evidence or submissions) that it did not raise and maintain in submissions to the ERA before the decision was made (s 258A(3)); and
6. Unless the Tribunal is satisfied that a ground of review has been made out, subject to limited exceptions, the Tribunal must not consider any material other than that specified in s 261(1) of the NGL(WA), which material essentially comprises the material that was before the ERA and the parties’ submissions to the Tribunal.
7. In *Australian Energy Regulator v Australian Competition Tribunal (No 2)* (2017) 345 ALR 1;[2017] FCAFC 79 (*AER v ACT (No 2)*), the Full Court considered applications for judicial review of *PIAC and Ausgrid* and three related matters. This judgment was delivered on 24 May 2017, after the hearing in the present matter had concluded. The Tribunal gave the parties an opportunity to file a Written Submission addressing the significance (if any) of that decision. Both parties availed themselves of that opportunity—the owners by Written Submission dated 12 July 2017and the ERA by a responsive Written Submission dated 2 August 2017.
8. In introducing the matters before it, in *AER v ACT (No 2)* at 8–9 [8], the Full Court said:

As set out in the AER’s written submissions, the AER’s challenge to the Tribunal’s determinations was directed principally to the following core concerns:

(a) The Tribunal had failed to undertake its review function lawfully by failing to properly construe and apply the grounds of review under s 71C of the NEL and s 246 of the NGL. Errors of this kind led the Tribunal to carry out reviews of a kind that were not authorised by the legislation.

(b) In one instance, the Tribunal purported to review a decision of a type that did not and could not fall within its jurisdiction. This related only to the fifth matter, NSD 420 of 2016, which, as we have said, involves JGN and the NGL and the NGR and is the subject of separate reasons published today.

(c) The Tribunal allowed the distribution network service providers and the covered pipeline service provider to raise, in relation to whether a ground of review existed, matters that were not raised and maintained by the service providers in submissions to the AER before the reviewable regulatory decisions were made, thus contravening the constraints imposed by s 71O(2) of the NEL and s 258(3) of the NGL.

(d) The Tribunal erred in its construction of new provisions in the NER and the NGR relating to the determination of the rate of return on capital, the value of imputation credits and the operating expenditure criteria.

(e) The Tribunal made other reviewable errors in making its decision, including adopting reasoning that was irrational, unreasonable and/or uncertain.

1. At 36 [139] in *AER v ACT (No 2)*, the Full Court observed that, when considering an application for a review of the type under consideration in the present matter, the Tribunal does not start again. The Court said that, similarly, the limited form of administrative merits review under s 71C does not authorise the Tribunal to intervene on the basis of mere disagreement with the Regulator’s decision. The Full Court also noted that, in a particular case, there may be overlap between the grounds upon which an application may be made to the Tribunal to review a decision of the Regulator and, consequently, the grounds upon which the Tribunal might act.
2. At 36 [141], the Full Court said that the ground of review described in s 71C(1)(c) which, in all material respects, is the same as the ground of review specified in s 246(1)(c) of the NGL(WA), should be understood as encompassing the words in *House v The King* (1936) 55 CLR 499 at 505: *“If the judge acts upon a wrong principle, if he allows extraneous or irrelevant matters to guide or affect him … if he does not take into account some material consideration …”.*  Material error of law causing an incorrect exercise of discretion would be included. The Full Court went on to say that failure properly to exercise the discretion based on inference from the character of the result as *“unreasonable or plainly unjust”* is available under subpar (c) of s 71C(1) (and s 246(1)(c)) and may also be available under subpar (d) of s 71C(1) (and s 246(1)) in circumstances where the incorrect exercise of the discretion has the consequence that the Regulator’s decision is unreasonable.
3. At 36 [143], the Full Court said:

Having said that, in our opinion paragraph (d), that the AER’s decision was unreasonable, having regard to all the circumstances, is not limited to *Wednesbury* unreasonableness and indeed, as made clear by *Li* at [68], *Wednesbury* unreasonableness is not the starting point for the standard of reasonableness nor should it be considered the end point.

1. At 37 [144], the Full Court explained the meaning of *“discretion”* when used in the relevant regulatory provisions. The Full Court said:

As to the word “discretion”, we consider that in context this term does not extend to a choice by the AER between facts or opinions, which it has authority to decide, but primarily refers to express or implied statutory choices, where those assessments call for value judgments in respect of which there is room for reasonable differences of opinion, no particular opinion being uniquely right. The contrast is with an order the making of which is dictated by the application of a fixed rule to the facts on which its operation depends: *Norbis v Norbis* (1986) 161 CLR 513; 645 ALR 12; 10 Fam LR 819 at [4]. See also *ACCC v ACT* at [173].

1. The Full Court then went on to discuss the previous Full Court decision of *Australian Competition and Consumer Commission v Australian Competition Tribunal* (2016) 152 FCR 33 (*ACCC v ACT*).
2. At 73–74 [171]–[172] in *ACCC v ACT*, the Full Court considered a ground of review directed to errors in the Regulator’s finding of facts. In that part of the Court’s Reasons, the Court held that a choice between permitted methodologies for the calculation of total revenue mentioned in s 8.4 of the relevant code was not a finding of fact. The Court also held that it was not a fact finding error to base that choice upon one methodology rather than another. In In *ACCC v ACT,* the Full Court held that the relative weight to be given to the factors set out in the relevant statutory provision was a matter of discretion rather than a finding of fact which can be impugned as such.
3. At 37–38 [145] of *AER v ACT (No 2)*, the Full Court observed that the previous Full Court in *ACCC v ACT* had stated that findings of fact may include a finding which was the opinion about the existence of a future fact or circumstance. The Court noted that the previous Full Court expressed the opinion that the expression *“findings of fact”* should be interpreted so as to encompass opinions formed by the primary decision maker based upon approaches to the assessment of facts and methodologies which it had chosen to apply. At the end of [145], the Full Court said:

… In our opinion, an error in making a finding of fact would not always extend to an opinion about the existence of a future fact or circumstance but, for example, would include an error as to what the opinion of an expert was even where that opinion was about the existence of a future fact or circumstance.

1. The Full Court in *AER v ACT (No 2)* then expressed the following opinions (at 38–39 [146]–[150]):

As we have set out above, the AER submitted that when the Tribunal considered whether there was an “error of fact”, the concept of “error” set a threshold that was not passed simply because there was material that could support a different finding of fact or simply because the Tribunal might, if it considered the material afresh, prefer to make a different finding of fact: *DBNGP* at [326] and *WA Gas Networks* at [22]. Thus far we agree.

The AER went on to submit that before a finding of fact could be characterised as erroneous, more must be established by a review applicant: such as the absence of evidence supporting the finding made. In our opinion, although it is correct to say that more must be established than that the Tribunal prefers to make a different finding of fact, it is not to be thought that “no evidence” is any more than an example of a finding of fact which is erroneous. It was in that context that *Pfizer Pty Ltd v Birkett* [1999] FCA 1778 at [11], relied on by the AER, was decided in relation to the admissibility of expert opinion evidence. We do not see that decision as being of any wider assistance in the construction of s 71C of the *NEL* (or s 246 of the *NGL*).

For example, we accept the submission on behalf of the electricity network respondents that the concept of ‘findings of fact’ encompasses more than ‘primary’ fact finding. In our opinion, findings of facts within s 71C would generally include inferences drawn from primary facts or conclusions drawn from primary facts. We would also observe that we would not regard ‘evaluative judgment’ as an appropriate discrimen for the purposes of s 71C. In our opinion, depending on the particular circumstances, ‘findings of fact’ may include such a finding even where it is based on an ‘evaluative judgment’.

Considering the four available grounds in s 71C overall, and stating again that mere disagreement with the AER, whether as to facts or exercises of discretion or overall, is not a basis on which the Tribunal may intervene, it would in our opinion be strange as a matter of statutory construction if there were classes of material error on the part of the AER which the Tribunal discerned but which were beyond the Tribunal’s reach and resulted in areas of decision-making immune from (limited) review. To conclude that there were some findings of fact or exercises of discretion which were not susceptible to review by the Tribunal for material error seems to us to be unlikely as a matter of the intention of the legislature. In our view the touchstone for s 71C material error is that the Tribunal may not act where there is no error and error is not made out by choosing one available fact or opinion over others. For example, the mere availability of a different inference from facts would not establish error within s 71C: the Tribunal must find that there was error in the AER’s decision-making before it may intervene.

It is not, in our opinion, possible or desirable to attempt to bring any more precision to the concept of an error or errors of fact in the AER’s findings of fact. The parties will assert or deny that such an error or errors was or were made and it will then be necessary for the Tribunal to evaluate the nature of that claimed error or those claimed errors. In doing so, in our opinion, the Tribunal should recognise the permissible field of choice which the legislature has given to the AER.

1. At 39–40 [152]–[159], the Full Court interpreted the expression *“materially preferable NEO decision”*. The views expressed in these paragraphs are equally apt to be applied in respect of the same expression used in the NGL(WA) in relation to the NGO. The Full Court said:

As to the “materially preferable NEO decision”, we accept the AER’s submission that an implicit statutory premise is that a decision rectifying errors revealed by established grounds of review may not lead to a decision that is “materially preferable” to the decision made by the AER since, if the correction of errors revealed by established grounds of review necessarily resulted in a materially preferable NEO decision, then s 71P(2a) would have no work to do.

We construe the word “materially” in this context to mean not only that the error must be relevant or pertinent but that the future decision would be or would be likely to be preferable to an important degree or extent.

In our opinion the words “would, or would be likely to, result in” a materially preferable decision do not need lengthy explanation. The first permutation of the words, “would… result in” involves a conclusion on the part of the Tribunal at a high level of certainty, while the second permutation of the words, “would be likely to… result in” involves a conclusion on the part of the Tribunal at a lower level of certainty but requiring that the conclusion be “more likely than not”.

We see the first permutation as more applicable where the result of the Tribunal’s review is certain because the Tribunal has specifically varied the regulatory decision and the second permutation as more applicable where the Tribunal has set aside the regulatory decision and remit the matter back to the AER.

The identified mischief to which the amending legislation was directed was “cherry picking”. We accept the submission on behalf of the Minister that whether there will be, or would be likely to be, a materially preferable decision to the decision in fact made by the regulator depends on an assessment of the decision as a whole, and a comparison of that decision with a putative alternative decision, either by the Tribunal or by the AER on remitter: it does not depend simply on an assessment of errors in individual components of the decision under review.

At a general level, we see no reviewable error on the part of the Tribunal in its consideration of this issue of a materially preferable NEO decision, at [31]-[49], [65]-[101], and [1176]-[1226]. Each of those paragraphs must be read in context, as expressly recognised in the submissions on behalf of the Minister.

In relation to PIAC’s submission that s 16(1)(d) of the NEL is of present significance, we do not accept that submission. The submission was that s 16(1)(d) imposed a substantive obligation that sat atop, and confined, the discretions or judgements afforded to the AER under the NER and that this, in turn, had a consequential effect on the scope of the available grounds of review in the Tribunal, particularly s 71C(1)(c) and (d).

In our opinion, that provision requires, where there are 2 or more possible reviewable regulatory decisions that will or are likely to contribute to the achievement of the national electricity objective, the AER must make the decision that it is satisfied will or is likely to contribute to the achievement of that objective to the greatest degree. In our opinion, in so providing, the legislature is making express, perhaps unnecessarily, the content of what is preferable. The provision then goes on to require the AER to specify reasons as to the basis on which it is satisfied that the decision is the preferable reviewable regulatory decision.

1. After addressing the matters to which we have referred at [119]–[120] above, the Full Court went on to consider the particular grounds of review raised by the AER in the case before it.
2. At 145–173 [618]–[784], the Full Court examined several grounds of review directed to alleged errors made by the Tribunal in relation to the value of imputation credits (gamma). Much of what the Full Court said in this part of its Reasons is relevant to the present case and we shall return to discuss the observations of the Full Court when considering the issue of gamma.
3. In a further decision delivered on 18 January 2018 (*SA Power Networks v Australian Competition Tribunal (No 2)* [2018] FCAFC 3 (*SAPN*), the Full Court confirmed its reasoning in *AER v ACT (No 2)*. It also reaffirmed the basis of its decision in relation to gamma in n *AER v ACT (No 2)* (at [52] to [57]). The parties to this application were also given an opportunity to make submissions as to the significance of *SAPN* for the present matter. The ERA availed itself of that opportunity and lodged a Written Submission dated 3 April 2018. The owners did not lodge any submission in response to that invitation.

# The Grounds of Review

1. The owners rely upon two separate grounds of review although, unsurprisingly, they are inter-related.
2. First, the owners challenge the ROE decision. Second, the owners challenge the ERA’s determination of a value for imputation credits (gamma) of 0.4.
3. According to the owners, their challenge to the ROE decision involves a relatively narrow, though significant, issue concerning the approach adopted by the ERA in the final decision toward the *“downward bias”* or *“low beta bias”* in estimates of the return on equity for low beta stocks derived from the Sharpe Lintner Capital Asset Pricing Model (**SL-CAPM**) which was the ERA’s chosen model for determining the return on equity as part of the allowed rate of return under r 87 of the NGR.
4. The owners contended that the ERA’s approach to estimating the return on equity (and consequently, the allowed rate of return) is erroneous and contrary to the requirements of r 87 of the NGR, primarily because of its treatment of downward bias (or *“positive alpha”*) within its chosen model, the SL-CAPM.
5. The owners also argued that, in the final decision, the ERA took no account of, and made no adjustment for, the actual or potential bias in the SL-CAPM. Instead, the ERA derived a return on equity by an application of the SL-CAPM in its standard, theoretical form – absent any adjustment for actual or potential bias or underestimation.
6. Although the owners descended into great detail as to the circumstances in which the ERA came to make that decision and contended that a number of other errors were made in the reasoning process which led to the errors which we have identified at [126]–[128] above, nonetheless the critical errors are those identified in those paragraphs. The owners argued that they had made out several of the grounds specified in s 246(1) of the NGL(WA) in respect of those errors and were entitled to relief.
7. As to the owners’ challenge to the ERA’s decision in respect of gamma, the owners argued that the rules relating to gamma are essentially the same as between the NER and the NGR. They then submitted that the decisions of the Tribunal and of the AER, in relation to the equivalent provision in cl 6.5.3 of the NER which deals with gamma, are of immediate and direct relevance in considering the proper interpretation and application of r 87A of the NGR. In this regard, the owners relied upon *PIAC and Ausgrid*.
8. The owners argued that the ERA’s determination that gamma should be 0.4 (being the mid-point of a range of gamma of 0.28 to 0.55) was based upon an incorrect construction and application of r 87 and r 87A of the NGR and the application of an erroneous conclusion arrived at by the ERA to the effect that its figure derived from tax statistics of 0.48 for gamma is a point estimate, and not an upper bound, for theta. Had the correct conclusion been applied, the figure from the tax statistics would have been 0.34.
9. In considering the asserted grounds of review, it must be remembered that there will often be no clear distinction between the available grounds of review specified in s 246(1) of the NGL(WA). The section, and the regime, permit overlap between the available grounds of error identified.
10. In *Application by ATCO Gas Australia Pty Ltd* [2016] ACompT 10 (*ATCO Gas*)at [47], the Tribunal said that:

(1) the line between the several available grounds for review is not necessarily always clear cut;

(2) there is no clear line between factual error, opinion, and discretionary judgment, as one may feed into the other;

(3) any such error or errors — if accepted by the Tribunal — may be a combination of error or errors of fact, wrongful exercise of discretion, and the outcome of an unreasonable decision.

1. In order to determine whether the ERA made an error of fact for the purposes of s 246(1)(a) and (b) of the NGL(WA), the Tribunal must:
2. ascertain the precise conclusion of fact made by the ERA;
3. determine whether, within that conclusion, there is a finding of fact (or facts) that can properly be said to be erroneous (of erroneous in combination); and
4. if the finding or fact (or combination of facts) was erroneous, determine whether the error was material to the making of the decision,

(see *ATCO Gas* at [34]–[37]).

1. The phrase *“finding of fact”* should be interpreted broadly to be meaningful in relation to the function of the ERA under review. Findings of fact may concern the existence of a present or historical fact, being an event or circumstance. However, *“findings of facts”* do not include the making of choices between permitted methodologies. This was the clear view of the Full Court in *ACCC v ACT* and, although to some extent possibly qualified in some respects in *AER v ACT (No 2)*, seems to be nonetheless a correct statement of principle.
2. In *Application by ActewAGL Distribution* [2010] ACompT 4 at [34], the Tribunal considered the meaning of a *“discretionary decision”*. At [34], the Tribunal said:

… It is most commonly applied to decision making which involves essentially a weighing up of relevant facts. First the decision maker finds the facts. Then the decision maker undertakes a weighing up process which involves taking into account considerations that are found to be relevant, assessing the weight to be given to those considerations so assessed and determining what, as a result of that process, is the right result. …

1. In *ATCO Gas*, the Tribunal described certain classes of decision that may attract the conclusion that there had been an incorrect exercise of discretion in the following way (at [39]):

[Decisions]:

(1) based upon a misconstruction or misapplication of relevant principles, methodologies or factors required to be considered by the NGL or NGR;

(2) affected by a failure to have regard to a mandatory relevant factor prescribed by the NGL or the NGR;

(3) affected by the regulator taking into account factors which are extraneous to those relevant under the NGL or NGR; or

(4) affected by a failure to take into account a relevant submission.

[will involve an incorrect exercise of discretion.]

1. An incorrect exercise of discretion as a ground of review is not available merely because the Tribunal would exercise a discretion in a different way. If the ERA has exercised its discretion correctly, in accordance with correct principles, and if the particular exercise of discretion was open to it within the framework of the NGL, then it is not for the Tribunal to substitute a decision which it might prefer on the material before the decision maker (see *ATCO Gas* at [41] and *Application by Envestra Limited (No 2)* [2012] ACompT 4(*Envestra*)at [36]).
2. In *Envestra* at [51]–[54], the Tribunal explained the ground of review of *“unreasonableness”* in the following way:

The concept of unreasonableness goes beyond *Wednesbury* unreasonableness but is still limited. There must be logical error or irrationality in the decision. To make out this ground, the AER’s decision must not be justified by reference to its stated reasons. In ACCC v ACT, the Full Court stated at [178]:

The concept of ‘unreasonableness’ imports want of reason. That is to say the particular discretion exercised by the [regulator] is not justified by reference to its stated reasons. There may be an error in logic or some discontinuity or non sequitur in the reasoning. It may be that the decision has an element of arbitrariness about it because there is an absence of reason to explain the discretionary choices made by the [regulator] in arriving at its conclusion.

The Tribunal repeated and applied this statement in *ElectraNet (No 3)* at [65] and in *EnergyAustralia* at [66]-[67].

In *ActewAGL,* the Tribunal said that a decision will be unreasonable if it is arbitrary or capricious. It said at [35]:

It is, we think, neither possible nor necessary to give an exhaustive definition of what is an unreasonable decision. At one extreme a decision that is arbitrary or capricious will plainly be unreasonable. At the other extreme, it will not be sufficient merely to reach a different decision to the first instance decision maker; in many areas reasonable persons can perfectly reasonably come to opposite conclusions.

A decision which is not determined by reference to the applicable criteria in the NGL or the NGR is likely to be unreasonable in all the circumstances: *Energy Australia* at [68]. A failure to take into account a matter which is required to be considered or consideration of a matter which is irrelevant may also give rise to a decision which is unreasonable: *ActewAGL* at [35].

1. In similar vein, in *ATCO Gas* at [43]–[46], the Tribunal said:

For the unreasonableness ground in s 246(1)(d) of the NGL to be established, it must involve logical error or irrationality in the decision, and the decision must not be justified by reference to its stated reasons. A decision will be unreasonable if there is an absence of reason to explain the discretionary choices made by the ERA in arriving at its conclusions.

It is not possible to give an exhaustive definition of what constitutes an unreasonable decision. However, at one end of the spectrum, an arbitrary or capricious decision will be unreasonable, but at the other end of the spectrum, it is not sufficient merely to reach a different view to the original decision maker.

A decision which is not determined by reference to the applicable criteria in the NGL or the NGR is likely to be unreasonable in all the circumstances. A failure to take into account a matter which is required to be considered, or consideration of a matter which is irrelevant, may also constitute unreasonableness.

The unreasonableness ground in s 246(1)(d) and the incorrect exercise of discretion ground in s 246(1)(c) overlap to a certain extent. For example, if the reasons for a decision contain logical error or an unexplained discretionary choice made in reaching a conclusion, then the decision is likely to be unreasonable.

# Ground 1 – The Owners’ Challenge to the ROE Decision

1. Rule 87 and r 87A of the NGR provide:

**87 Rate of return**

(1) Subject to rule 82(3), the return on the projected capital base for each regulatory year of the *access arrangement period* is to be calculated by applying a rate of return that is determined in accordance with this rule 87 (*the allowed rate of return*).

(2) The *allowed rate of return* is to be determined such that it achieves the *allowed rate of return objective*.

(3) The *allowed rate of return objective* 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 reference services (the *allowed rate of return objective*).

(4) Subject to subrule (2), the *allowed rate of return* for a regulatory year is to be:

(a) a weighted average of the return on equity for the *access arrangement period* in which that regulatory year occurs (as estimated under subrule (6)) and the return on debt for that regulatory year (as estimated under subrule (8)); and

(b) determined on a nominal vanilla basis that is consistent with the estimate of the value of imputation credits referred to in rule 87A.

(5) In determining the allowed rate of return, regard must be had to:

(a) relevant estimation methods, financial models, market data and other evidence;

(b) 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

(c) any interrelationships between estimates of financial parameters that are relevant to the estimates of the return on equity and the return on debt.

**Return on equity**

(6) The return on equity for an *access arrangement period* is to be estimated such that it contributes to the achievement of the *allowed rate of return objective*.

(7) In estimating the return on equity under subrule (6), regard must be had to the prevailing conditions in the market for equity funds.

**Return on debt**

(8) The return on debt for a regulatory year is to be estimated such that it contributes to the achievement of the *allowed rate of return objective*.

(9) The return on debt may be estimated using a methodology which results in either:

(a) the return on debt for each regulatory year in the *access arrangement period* being the same; or

(b) the return on debt (and consequently the *allowed rate of return*) being, or potentially being, different for different regulatory years in the *access arrangement period*.

(10) Subject to subrule (8), the methodology adopted to estimate the return on debt may, without limitation, be designed to result in the return on debt reflecting:

(a) the return that would be required by debt investors in a benchmark efficient entity if it raised debt at the time or shortly before the time when the AER’s *decision* on the access arrangement for that *access arrangement period* is made;

(b) the average return that would have been required by debt investors in a benchmark efficient entity if it raised debt over an historical period prior to the commencement of a regulatory year in the *access arrangement period*; or

(c) some combination of the returns referred to in subrules (a) and (b).

(11) In estimating the return on debt under subrule (8), regard must be had to the following factors:

(a) the desirability of minimising any difference between the return on debt and the return on debt of a benchmark efficient entity referred to in the *allowed rate of return objective*;

(b) the interrelationship between the return on equity and the return on debt;

(c) the incentives that the return on debt may provide in relation to capital expenditure over the *access arrangement period*, including as to the timing of any capital expenditure; and

(d) any impacts (including in relation to the costs of servicing debt across *access arrangement periods*) on a benchmark efficient entity referred to in the *allowed rate of return objective* that could arise as a result of changing the methodology that is used to estimate the return on debt from one *access arrangement period* to the next.

(12) If the return on debt is to be estimated using a methodology of the type referred to in subrule (9)(b) then a resulting change to the service provider’s total revenue must be effected through the automatic application of a formula that is specified in the *decision* on the access arrangement for that *access arrangement period*.

**Rate of return guidelines**

(13) The AER must, in accordance with the *rate of return consultative procedure*, make and publish guidelines (the *rate of return guidelines*).

(14) The *rate of return guidelines* must set out:

(a) the methodologies that the AER 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 AER 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.

(15) There must be *rate of return guidelines* in force at all times after the date on which the AER first publishes the *rate of return guidelines* under these rules.

(16) The AER must, in accordance with the *rate of return consultative procedure*, review the *rate of return guidelines*:

(a) at intervals not exceeding three years, with the first interval starting from the date that the first *rate of return guidelines* are published under these rules; and

(b) at the same time as it reviews the Rate of Return Guidelines under clauses 6.5.2 and 6A.6.2 of the National Electricity Rules.

(17) The AER may, from time to time and in accordance with the *rate of return consultative procedure*, amend or replace the *rate of return guidelines*.

(18) The *rate of return guidelines* are not mandatory (and so do not bind the AER or anyone else) but, if the AER makes a *decision* in relation to the rate of return (including in an access arrangement draft *decision* or an access arrangement final *decision*) that is not in accordance with them, the AER must state, in its reasons for the *decision*, the reasons for departing from the guidelines.

(19) If the *rate of return guidelines* indicate that there may be a change of regulatory approach by the *decision* maker in future *decisions*, the guidelines should also (if practicable) indicate how transitional issues are to be dealt with.

**Division 5A**

**87A Estimated cost of corporate income tax**

1. The estimated cost of corporate income tax of a service provider for each regulatory year of an *access arrangement period* (ETCt) is to be estimated in accordance with the following formula:

ETCt = (ETIt × rt) (1 – γ)

Where

ETIt is an estimate of the taxable income for that regulatory year that would be earned by a benchmark efficient entity as a result of the provision of reference services if such an entity, rather than the service provider, operated the business of the service provider;

rt is the expected statutory income tax rate for that regulatory year as determined by the AER; and

γ is the value of imputation credits.

## The Final Decision (ROE)

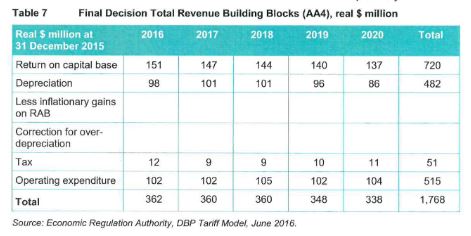
1. The final decision comprises 483 pages together with a number of Appendices.
2. At pp 69 to 247 (pars 206 to 1,182), the ERA addressed the concept of Total Revenue for the purposes of rr 72 to 87A.
3. At pp 69 to 75 (pars 206 to 222), the ERA set out the detail provided in the owners’ various proposals and the ERA’s various responses concerning the Revenue Building Blocks.
4. At pp 73 to 75 (pars 219 to 222), the ERA said:

**Considerations of the Authority**

The Authority’s Final Decision on DBP’s Total Revenue requirement is documented in the following sections.

* Operating Expenditure;
* Opening Capital Base;
* Projected Capital Base;
* Rate of Return;
* Gamma;
* Depreciation;
* Taxation;
* Incentive Mechanism; and
* Allocation of Total Revenue between Reference Services and Other Services

As a result of the Authority’s assessment of DBP’s proposed total revenue building blocks as per rule 76 of the NGR, set out in detail below, the Authority has not approved DBP’s proposed total revenue for the fourth access arrangement (AA4) period. The Authority’s Final Decision for approved total revenue by building block in real and nominal dollars is set out in Table 7 and Table 8 respectively.



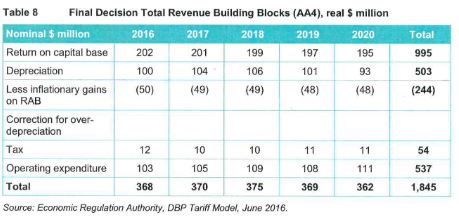


Figure 3 compares DBP’s proposed revenue building blocks with the building blocks approved in the Authority’s Final Decision.

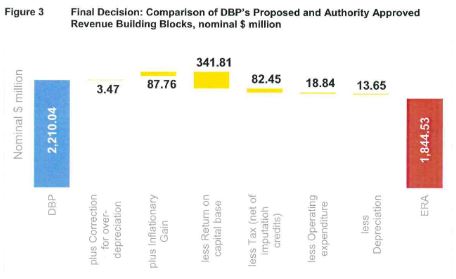
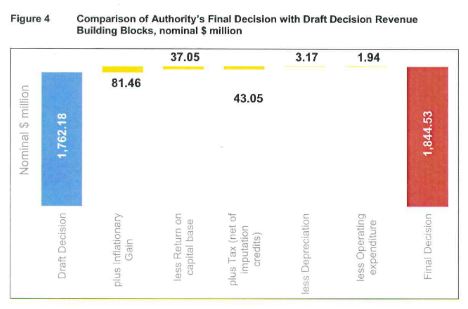


Figure 4 compares DBP’s proposed revenue building blocks with the building blocks approved in the Authority’s Final Decision. The key changes relate to the inflationary gain and return on capital base (reflecting a reduction in forecast inflation and increase in the real rate of return) and taxation (reflecting an adjustment to the opening tax asset base).



1. Table 8 reproduced at par 220 of the final decision is the Total Revenue Building Blocks in nominal dollars, not real dollars as described in that paragraph.
2. It is apparent from the information contained in those paragraphs of the final decision that the quantum of the ERA’s approved Revenue Building Blocks ($1,844.53 million in nominal dollars) was an increase over the quantum assessed in the ERA’s draft decision ($1,762.18 million in nominal dollars) but a decrease over the amount claimed by the owners ($2,210.04 million).
3. The Rate of Return determination made by the ERA is referred to in summary form at pp 218 to 222 (pars 1058 to 1070) of the final decision and also in Appendix 4 Rate of Return to that decision.
4. At pp 218 to 220 (pars 1058 to 1066), the ERA said:

In its Draft Decision the Authority did not accept DBP’s approach for estimating the rate of return and determined its own numbers.

The Draft Decision noted that, as provided in the *Final Decision on Proposed Revisions to the Access Arrangement for the Mid-West and South-West Gas Distribution Systems* (hereafter, the **ATCO GDS Final Decision**) published as amended on 10 September 2015, [Economic Regulatory Authority, *Final Decision on Final Decision on Proposed Revisions to the Access Arrangement for the Mid-West and South-West Gas Distribution Systems*, as amended 10 September 2015] the Authority had recently modified its approach to estimating the return on debt and the return on equity as outlined in the Authority’s Rate of Return Guidelines [Economic Regulation Authority, Rate of Return Guidelines, 16 December 2013].

The Authority considered that the modified approach aligned with the regulatory requirements for the rate of return as specified in the National Gas Law (**NGL**) and National Gas Rules (**NGR**). The Authority considered DBP’s proposal for estimating the rate of return, but was not convinced that it met the requirements of either the NGL or the NGR.

The detailed reasoning for the Authority’s Draft Decision is set out in Appendix 4 and is summarised below. The Authority:

* continued to estimate the rate of return based on the debt proportion of total capital – the gearing - for the benchmark efficient entity of 60 per cent;
* with regard to the estimate of the return on equity:
* retained the Sharpe Lintner Capital Asset Pricing Model (SL-CAPM) as the primary relevant model for estimating the return on equity;
* utilised information from other relevant models – including the Black Capital Asset Pricing Model (Black-CAPM) and the Dividend Growth Model (DGM) – to establish the value of parameters in the Sharpe Lintner CAPM;
* estimated the risk free rate parameter for input to the Sharpe Lintner CAPM from Commonwealth Government Securities, based on a 5 year term to maturity;
* estimated a range for the 5 year forward looking Market Risk Premium (MRP) based on historic excess return data and the DGM, in recognition that it fluctuates in response to prevailing conditions;
* drew on a range of forward looking information to establish the point value of the MRP; and
* estimated the beta parameter based a benchmark sample of Australian firms with similar characteristics to the benchmark efficient entity.
* with regard to the estimate of the return on debt:
* continued to estimate the cost of debt as the sum of the risk free rate, relevant Debt Risk Premium (DRP), and relevant debt raising and hedging transactions costs;
* estimated the risk free rate from the bank bill swap rate with the same term as the regulatory period, that is, 5 years;
* adopted a hybrid trailing average approach to estimating the return on debt, with the risk free rate estimated once, just prior to the regulatory period, and the DRP estimated using an equally weighted 10 year trailing average;
* estimated the DRP based on a BBB band credit rating, for a term of 10 years, using the Authority’s enhanced bond yield approach that included international bonds issued by domestic entities (and for estimates of the DRP prior to the proposed averaging period, utilise the Reserve Bank of Australia’s credit spread data for the BBB band); and
* annually updated the estimate of the DRP using a set of specified automatic formulas.

The Authority’s resulting *indicative* estimate for the overall post tax nominal rate of return for its Final Decision, for the 2016 calendar year, was 6.02 per cent:

* the *indicative* expected 5 year return on equity was 7.28 per cent, estimated as at 2 April 2015;
* the *indicative* estimate for the return on debt for the 2016 calendar year was 5.172 per cent, estimated as at 2 April 2015.

This rate of return was applied from 1 January 2016 to 31 December 2020 in the tariff modelling for the Draft Decision, in order to estimate *indicative* tariffs for the Draft Decision.

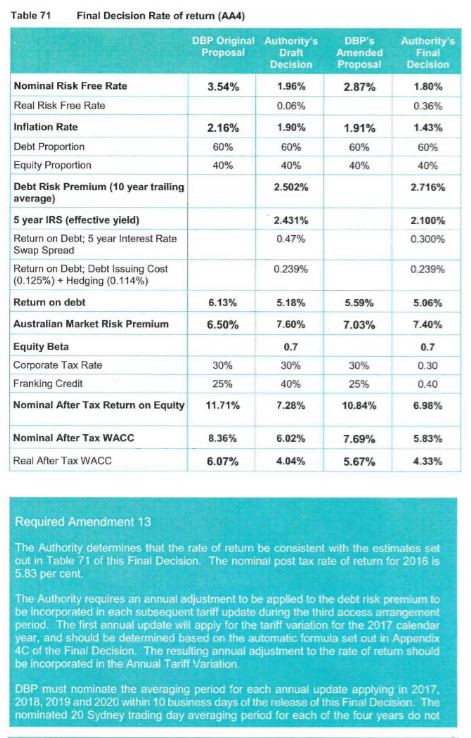
The Draft Decision noted the *indicative* estimate of the rate return on debt, would be updated in the Final Decision to account for DBP’s nominated averaging period for the 2016 estimate. The overall method for determining that revised calendar year 2016 estimate would follow that for the *indicative* estimate set out in the Draft Decision. The resulting estimated rate of return for 2016 would be applied in the tariff modelling for the Final Decision for 2016 to 2020.

The Draft Decision noted the 2017 to 2020 rates of return would then be progressively annually updated through the remaining years of AA4. The resulting revised rate of return would be included in the relevant tariff variations which occur in each calendar year.

The Draft Decision noted the process for implementing the annual update would be as follows:

* For each annual update for 2017, 2018, 2019 and 2020, the Authority would estimate the updated DRP following the relevant annual averaging period, recalculate the rate of return, and then notify DBP of the outcomes as soon as practicable. This would allow DBP to check the rate of return estimate, prior to its incorporation in the proposed annual tariff variation to occur on 1 January in each year.
* Following that notification, DBP would be required to respond on any issues as soon as practicable, in order to allow the updated DRP and rate of return estimates to be finalised prior to submission by DBP of its proposed annual tariff variation.
* In the event that there was a disagreement on the DRP annual update estimate, the Authority would work with DBP to ensure that any misapplication of the automatic formulas in Appendix 4G of the Draft Decision were corrected in a timely manner.

1. As a result of the reasoning and determinations summarised in those paragraphs, the ERA required an amendment to the owners’ amended proposal in respect of the Rate of Return.
2. The owners did not accept the ERA’s proposed amendment. The ERA then determined its own numbers which it then recorded in Table 71 on p 221 of the final decision. That table is in the following form:



1. The line items under challenge by Ground 1 of the owners’ grounds of review are the 0.7 figure for equity beta and the second last and third last line items in Table 71.
2. In addition, it is worth noting at this point that the second ground of review (the gamma ground) relates to the fourth last line item in Table 71, with particular reference to the figure in the last column (0.40).
3. The detailed reasoning of the ERA in relation to its ROE decision is found in Appendix 4. Appendix 4 is itself a lengthy document (233 pages).
4. At pp 2 to 10 (pars 7 to 42) of Appendix 4, the ERA summarised the terms of the owners’ original proposal in respect of the rate of return. At pars 41 and 42 of Appendix 4, the ERA said:

In revisions to the Access Arrangement, DBP proposed an allowed post tax nominal rate of return for the benchmark efficient entity of 8.36 per cent (as at 30 September 2014).

With debt gearing of 60 per cent, DBP’s proposed nominal rate of return was a weighted average of:

* a return on equity of 11.71 per cent; and
* a return on debt of 6.13 per cent.

1. At pp 10 to 13 (pars 43 to 60), the ERA described its response to the owners’ original proposal as reflected in its draft decision.
2. At pp 11 to 12 (pars 51 to 53), the ERA said:

The following conclusions were reached in relation to the approach for estimating the return on equity in the Draft Decision for DBP:

* The SL-CAPM should be utilised to estimate the return on equity.
* The Fama French three factor model is not relevant and as such, this model should not be used for the purpose of estimating a return on equity.
* The Black CAPM is relevant for the purpose of estimating a return on equity. However, given it is not reliable and practical to estimate a robust return on equity using this model, the model will not be used directly, but only to inform the point estimate of the equity beta from within its range for input to the SL-CAPM.
* The DGM is a relevant model for informing the market return on equity and also the forward looking MRP.
* Other information such as historical data on equity risk premium; surveys of market risk and other equity analysts’ estimates are also relevant for the purpose of estimating the MRP and the market return on equity. This other material should be used as a cross check for the return on equity.

Given that the only robust model for estimating the return on equity in the Australian context is the SL-CAPM, the Authority did not see any current need for data sourced from the SIRCA SPPR database, as suggested by DBP [DBNGP Transmission Pty Ltd, Proposed Revisions DBNGP Access Arrangement, 2016 – 2020, Rate of Return, Supporting Submission: 12, 31 December 2014, p. 55]. The SPPR database was required by DBP to form long time series of predictions for the model adequacy test [This need for a long time series was considered one of the weaknesses of the model adequacy test (Appendix 4B), one which can be circumnavigated by various approaches to cross-validation (Appendix 4Bi)]. As need for the model adequacy test was rejected, then so too was need for the SPPR database.

The Authority remained of the view that its reasons for adopting the SL-CAPM are sound. The Authority considered that its application of the SL-CAPM meets the requirements of the NGR, and the allowed rate of return objective.

* The Authority did not agree with DBP’s submission that it had not taken all of the relevant information into consideration with respect to its estimate of the return on equity. The Authority was of the view that all of the issues raised by DBP and its consultants were considered in the Draft Decision.
* The Authority also disagreed with DBP’s estimates of the rate of return on equity. The Authority conducted significant research into the rate of return and cross checked its estimate across various sources. The Authority’s estimate for the rate of return was in line with other industry estimates.
* The Authority considered that the estimated return on equity adopted in the Draft Decision was commensurate with the equity costs incurred by a benchmark efficient entity with a similar degree of risk as DBP with respect to the provision of reference services. The Authority therefore considered that the estimated rate of return meets the allowed rate of return objective and the requirements of the NGR and NGL.

1. The reference to *“DGM”* in par 51 is a reference to the Dividend Growth Model.
2. It is clear from the ERA’s references to its draft decision in Appendix 4 that the ERA had considered other models, information and material and was of the opinion that the only robust model for estimating the return on equity in the Australian context is the SL-CAPM.
3. At pp 14 to 32 (pars 61 to 156) of Appendix 4, the ERA recorded the substance of the owners’ response to its draft decision. Its references to the owners’ response in these passages included references to the owners’ response by way of further submissions (see, in particular, pp 30 to 32 (pars 146 to 156)).
4. At pp 15 to 16 (pars 69 to 78) of Appendix 4, the ERA summarised the owners’ responses in the following terms (references to ‘betastar’ being references to an algebraic formula adjustment propounded by the owners):

**Return on equity**

In response to the Draft Decision, DBP submits only a slightly amended approach to estimating the return on equity, as compared to that put forward in its initial proposal.

*First*, DBP updates its range of outcomes for the return on equity from its model adequacy test. This delivers a so-called ‘unbiased’ betastar range of 1.00 (25th percentile) to 1.70 (99th percentile), around a mean of 1.15 [A footnote to this sentence stated that DBP have revised slightly the betastar estimates to reflect a change in the benchmark efficient entity sample set. The revised sample set reflects the omission of Envestra and HDF, which are now both delisted from the ASX DBP states (DBP, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period Supporting Submission:* *56,* 24 February 2016, p. 97): We note in Appendix 4A(ii) that the ERA has dropped Envestra and HDF from its original sample set as they are now dead stocks. We are unclear as to why it did not do this at its last estimation; Envestra was trading until September 2014, but HDF ceased trading in November 2012, a year before the ERA undertook the beta calculations in its Guidelines. The ERA has not explained this change in stance.].

*Second*, the resulting range for the return on equity, when the betastar range is applied within the SL-CAPM, is between 9.9 per cent and 14.82 per cent. This result builds on DBP’s estimate of the 10 year risk free rate, of 2.87 per cent, and its estimate of the Market Risk Premium (**MRP**) of 7.03 per cent.

*Third*, DBP also utilises information from the return on debt to derive the final range of the return on equity, drawing on the insights of Merton. DBP considers that this ensures consistency between the return on debt and the return on equity. Based on its analysis, DBP argues that the range of the return on equity should be between 10.61 per cent and 11.06 per cent. This range is narrower, lying entirely within the range given by the betastar estimates. DBP then takes the midpoint estimate of the narrower range, which is 10.84 per cent, to be the best estimate of the return on equity.

In arriving at this position, DBP considers that two issues are central to the differences between DBP and the Authority, which are reflected in their respective approaches to the return on equity.

*First*, DBP is of the view that the Authority has not made a proper assessment of its betastar approach. DBP contends that the Authority had based its conclusions on superficial reasoning and irrelevant evidence, while ignoring relevant evidence. DBP submits that the Authority fails to make a proper application of the evidence which itself had produced in relation to the identification or quantification of bias within the SL-CAPM.

*Second*, DBP argues that the Authority did not test whether the outcome of its SL-CAPM approach to estimating the return on equity meets Rule 87(5). DBP, on the other hand, considers that it does this through the use of its model adequacy test. DBP also contends that the need to test outcomes as well as inputs is a fundamental aspect of the regulatory framework in the NGL and NGR.

DBP maintains substantially the same approach to determining the return on equity in its initial Access Arrangement Proposal; that is, the application of its ‘model adequacy test’. DBP considers that this tests the outputs of models, and whether they give rise to a range of unbiased outcomes; such that the model results then neither systematically overstate nor understate actual returns.

DBP notes that one of the amendments from the Authority requires the DBP to implement the SL-CAPM using the five-year risk-free rate and a beta of 0.7, along with the estimate of the MRP. DBP argues that the first two could be done, but not the third. This problem arises because the Authority’s estimate of the MRP changes at each regulatory decision, based upon how it interprets a number of “forward looking” indicator variables. DBP considers that the Draft Decision fails to outline the ERA’s methodology for quantifying the correlation between changes in these variables and the change in the MRP.

**DBP’s reasons for rejecting the Authority’s views on relevant asset valuation models**

DBP submits that the Authority accepts that the Black CAPM, dividend growth model (DGM) and SL-CAPM are relevant in principle, as it does. However, a key difference arises with respect to the Fama-French model (**FFM**); DBP considers it to be relevant in-principle (based on the advice of CEG) but the Authority does not.

1. At p 17 (par 83), the ERA recorded the owners’ submission that the notion that the SL-CAPM is biased downwards is hardly a new idea, noting that the ERA accepted that this downward bias exists when it chose 0.7 for beta, while specifically acknowledging that it was doing so in order to address the issue of bias. In the same paragraph, the ERA noted the owners’ submission that the model adequacy test utilised by the ERA produced results that no-one else had found suggesting that the ERA’s view was contrary to more than 40 years of empirical finance.
2. The ERA acknowledged that the owners had submitted that there was a need for an empirical test of outputs. The ERA also understood that the owners had submitted that there was no proper basis for the ERA’s rejection of the model adequacy test.
3. At p 26 (pars 124 to 126), the ERA recorded the owners’ submissions in the following terms:

**Reasons for maintaining betastar**

DBP considers that the Authority’s approach, given a finding of downward bias for low beta stocks in the SL-CAPM, is completely irrational. DBP argues that [DBP, Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period Supporting Submission: 56, 24 February 2016, p. 55]:

… the ERA is acknowledging that bias exists, acknowledging that different models can supply information which might help overcome the bias, but then explicitly rejecting any information from those models in order to solve the bias problem in order to satisfy itself that it is not deviating from the SL-CAPM in any material way.

DBP is of the view that its betastar adjustment is transparent and can be easily followed by any observer [DBP, Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period Supporting Submission: 56, 24 February 2016, p. 55].

DBP agrees with the Authority’s view that there are no literature or empirical studies which use a betastar approach. DBP accepts that it fails to provide a single reference to support its view that betastar is well established, or at least follows any standard economic or statistical theories. However, DBP argues that [DBP, Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period Supporting Submission: 56, 24 February 2016, p. 55]:

This, however, is not surprising; in the ordinary course of events, if the Black CAPM passed a test like the model adequacy test but the SL-CAPM did not, one would simply have used the Black CAPM. However, betastar was adopted so as to minimise departure from the Guidelines.

1. At p 28 (pars 134 to 137), the ERA recorded the following:

**Beta**

In its response to the Authority’s Draft Decision in relation to the estimates of equity beta, DBP submitted that it has no issue with the *estimation* of beta as undertaken by the Authority [DBP, Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period Supporting Submission: 56, 24 February 2016, p. 63].

However, DBP considered that there are two issues in respect of the Authority’s beta, including: (i) The *estimate* of beta the Authority has used of 0.7 produces a result which is not consistent with the approach it has used in the past, because it has failed to take into consideration the changes in its beta *estimation*; and (ii) a potential issue concerning the efficiency of the market portfolio.

*First*, DBP argued that as the confidence interval around beta has shifted upwards, the Authority’s choice of beta has not changed [DBP, Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period Supporting Submission: 56, 24 February 2016, p. 64]. DBP considered that systematic risk is measured relative to the market and one would expect change as either the actual risks facing the firm changed or risks in the market changed. DBP was of the view that a consistent regulator would also choose a point two basis points below the upper end of the same confidence interval to address the same bias issue. As such, DBP argued that doing so would require the Authority to adopt the estimate of equity beta of 0.79 [DBP, Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period Supporting Submission: 56, 24 February 2016, p. 64].

*Second*, DBP submitted that if the market portfolio is inefficient, then the SL-CAPM fails to hold, and the conclusions the Authority has drawn in respect of beta are wrong. DBP argued that, more importantly, DBP concluded that [DBP, Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period Supporting Submission: 56, 24 February 2016, p. 66]:

DBP is to show that the predictions made by an SL-CAPM predicated on an inefficient market portfolio are downward-biased estimators of the actual returns made firms with (imperfectly measured) systematic risk similar to (likewise imperfectly measured) systematic risk exposure to the benchmark efficient firm, whilst the Black CAPM does not produce downward-biased estimators.

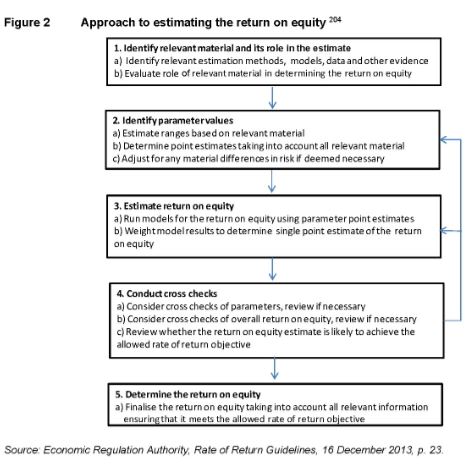
1. At pp 32 to 189 (pars 157 to 189), the ERA explained its reasoning in respect of the Rate of Return which it proposed to adopt for the purposes of its final decision.
2. At pp 32 to 33 (par 157), the ERA said that it did not accept the owners’ proposed approach for estimating the rate of return, as that approach does not comply with the regulatory requirements for the rate of return as specified in the NGL and NGR. The ERA said that, in evaluating the owners’ amended proposal, it had drawn on previous positions set out in the Rate of Return Guidelines, prior decisions, the draft decision and the owners’ response to the draft decision.
3. The ERA commenced its consideration of the issue of Return on Equity at p 50 (par 240). At pp 50 to 52 (pars 240 to 244), the ERA said:

**Return on equity**

In line with the requirements of NGR 87(5), the Authority evaluated the relevance of a broad range of material for estimating the return on equity in the Rate of Return Guidelines, covering relevant estimation methods, financial models, market data and other evidence [A footnote to this sentence referred to the Australian Energy Market Commission, Rule Determination: National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012, 29 November 2013, p. 36].

The Rate of Return Guidelines set out that the Authority will utilise a five step approach for estimating the return on equity. The five steps are summarised in Figure 2 below.

In applying this approach, the Authority has assessed a wide range of material, and identified relevant models for the return on equity, as well as a range of other relevant information. For this Final Decision, the Authority has had regard to and given weight to relevant material, according to its merits, seeking to fully achieve the requirements of the allowed rate of return objective.



204 The Authority considers that the term:

- ‘approach’ refers to the overall framework or method for estimating the return on equity, which combines the relevant estimation methods, financial models, market data and other evidence;

- ‘estimation material’ refers to any of the relevant estimation methods, financial models, market data and other evidence that contribute the ‘approach’; and

- ‘estimation method’ relates primarily to the estimation of the parameters of financial models, or to the technique employed within that model to deliver an output.

The Authority in the Rate of Return Guidelines determined that only a subset of the material evaluated at that time could be considered relevant in the Australian context, given the allowed rate of return objective. The Authority remains of the view that:

Rate of return estimate materials – the estimation methods, financial models, market data and other evidence – would need to be broadly consistent with the requirements of the NGL, the NGO, the NGR and the allowed rate of return objective to be considered relevant. Some estimation materials may perform better on some requirements and less well on others, and yet may still be considered relevant. Accordingly, the assessment is whether, on balance, estimation materials are consistent with the requirements of the NGL, the NGO, the NGR and the allowed rate of return objective.

Nevertheless, estimation materials would need to pass a threshold of adequacy to be considered relevant. To the extent that estimation materials failed the adequacy threshold, then they would be rejected. This rejection would be consistent with the AEMC’s purpose for the guidelines [Australian Energy Market Commission, Rule Determination, National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012, 29 November, p. 58]:

In order for the guidelines to have some purpose and value at the time of the regulatory determination or access arrangement process, they must have some weight to narrow the debate.

Once over the threshold for adequacy, then, as noted, any particular estimation material may meet the requirements of the NGL, the NGO, the NGR and the allowed rate of return objective to a greater or lesser degree. With this in mind, the criteria would then be used as a means to articulate the Authority’s evaluation of the estimation materials, in terms of how they performed in meeting the requirements of the NGL, the NGO, the NGR and the allowed rate of return objective. In this way, the criteria are intended to assist transparency around its exercise of judgement [Economic Regulation Authority, Explanatory Statement for the Rate of Return Guidelines, 16 December 2013, p. 12].

In that context, the following analysis provides the Authority’s determination for this Final Decision of the return on equity for the DBNGP benchmark efficient entity. The Authority considers that the estimate is consistent with delivering an outcome that meets the allowed rate of return objective, as well as the NGL and NGR more broadly [The allowed rate of return objective is set out at NGR 87(3):

The allowed rate of return objective 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 reference services].

1. The ERA then moved through the steps depicted in Figure 2 which is set out at p 51 (par 242) and explained its approach at each of those steps.
2. After referring to the Rate of Return Guidelines, the ERA then moved to consider the approach which it had adopted in its draft decision.
3. At pp 55 to 56 (pars 252 to 255) of Appendix 4, the ERA recorded its opinion, reflected in its draft decision, that the SL-CAPM and the Black CAPM are both relevant models for estimating the return on equity. However, the ERA took the view that it was not appropriate for it to regard the Black CAPM as suitable for use directly for estimating the return on equity. The ERA concluded that the owners’ proposed betastar method had significant empirical flaws. These flaws were summarised at pp 55 to 56 (par 253) as follows:

* the zero beta portfolio is sensitive to the data set used, highly variable through time with a wide standard error, and is therefore not robust [Economic Regulation Authority, Draft Decision on Proposed Revisions to the Access Arrangement for the Dampier to Bunbury Natural Gas Pipeline, 22 December 2016, Appendix 4, p. 45];

- DBP’s estimates – which use a single average estimate of zero beta premium – disguise the significant instability of the Black CAPM model;

- DBP’s model adequacy test is selective in its interpretation of the Black CAPM model;

* the betastar approach does not produce sensible results [Economic Regulation Authority, Draft Decision on Proposed Revisions to the Access Arrangement for the Dampier to Bunbury Natural Gas Pipeline, 22 December 2016, Appendix 4, p. 45.];

- the indicative overall market return on equity for a long period, estimated at the time of the Draft Decision, was approximately 10.83 per cent, [Economic Regulatory Authority, Final Decision on Proposed Revisions to the Access Arrangement for the Mid-West and South-West Gas Distribution Systems, as amended 10 September 2015, p. 255] which is lower than DBP’s estimated return for low asset beta entities such as the DBP;

- DBP is therefore suggesting that its return on equity is more risky than the market as a whole;

- but this is not sensible on conceptual grounds.

1. In addition, the ERA did not accept the owners’ model adequacy test for the reasons set out at p 56 (par 254) of Appendix 4. Those reasons were:

* relying on the historical data alone – as DBP does – for testing the relative adequacy of the Authority’s approach, is erroneous;
* other forward looking information needs to be taken into account, as the Authority does in its approach to estimating the return on equity;
* it follows that DBP’s model adequacy approach does not actually test the Authority’s approach in using the SL-CAPM for estimating the return on equity;
* DBP in essence compares two models that are not robust in the Australian context (the Black CAPM and FFM) with another method that is not relied on either – an ex post SL-CAPM with an MRP that is based on historic data only.

1. The ERA then moved on to address the owners’ response to the ERA’s draft decision. It noted that the owners continued to seek to apply its model adequacy test to determine the relevance of models for the return on equity. On this occasion, the owners tested the outputs of three models – the SL-CAPM, the FFM and the Black CAPM – in terms of their ability to predict actual (*ex post*) market outcomes. The ERA noted that the owners had submitted that only the outcomes of the Black CAPM provide for unbiased estimates of the return on equity whereas the results from the other two models are considered to be biased and hence poor forecast predictors.
2. As noted by the ERA, the owners then transformed the two percentile Black CAPM outcomes into *“betastar”* estimates, for use in the SL-CAPM, as a means to estimate an unbiased range for the return on equity. The ERA noted that the owners narrowed the return on equity range using the so-called *“Merton framework”* cross check method, before choosing the mid-point as the resulting return on equity.
3. At p 57 (pars 260 to 262) of Appendix 4, the ERA said:

Consequently, the core of DBP’s proposal relates to the model adequacy test, the associated inference that only the Black CAPM leads to unbiased results for the return on equity, and the use of the betastar transformation so as to implement the results of the Black CAPM within the framework of the SL-CAPM. DBP’s claims with regard to the Merton framework cross check method are also key to its estimate.

The Authority considers these four elements of DBP’s response in turn regarding the return on equity in what follows.

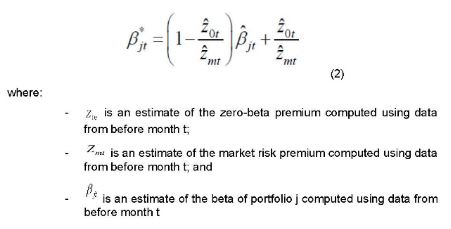
*Further evaluation of DBP’s model adequacy test and application of betastar*

The Authority has significant concerns – both conceptual and empirical – with DBP’s model adequacy test and betastar transformation. The following two sections set out the Authority’s reasoning regarding DBP’s proposed approach from these conceptual and empirical perspectives.

1. Over the ensuing 30 pages or so, the ERA considered, in great detail, the conceptual and empirical elements of the owners’ suggested approach.
2. At p 61 (par 278), the ERA concluded that there were significant issues with the construct of the owners’ model adequacy test. The ERA observed that no method tests the ERA’s actual implementation of the SL-CAPM and that all methods seek, erroneously, to compare expected returns with *ex post* actual returns.
3. The ERA then moved on to consider the question of whether there was bias in the performance of the SL-CAPM or merely an anomaly.
4. At pp 61 to 66 (pars 279 to 299), the ERA said:

**Bias or anomaly?**

DBP’s model adequacy test is intended to uncover ‘bias’ in the performance of the SL-CAPM. DBP then makes an adjustment to the beta in the SL-CAPM, as a means to counter the perceived bias. That ‘betastar’ adjustment is based on the Black CAPM, and is of the form [DBP, Proposed Revisions DBNGP Access Arrangement, 2016 – 2020 Regulatory Period, Rate of Return, Supporting Submission: 12, 31 December 2014, p. 68]:



However, it is not the beta in the SL-CAPM that is biased. As noted by Pink Lake in its evaluation of the statistical properties of the SL-CAPM and the Black CAPM [Pink Lake Analytics, Statistical Advice to ERA on DBP Submission 56, May 2016, p. 4]:

Upon review it is clear that the positions of the ERA and DBP are divergent. The Authority derives an RoE calculation from the Henry [Henry, O.T., Estimating 𝛽: An update, April 2014] statistical version of the Sharpe-Lintner Capital Asset Pricing Model (SL CAPM). The statistical model itself is valid – in predicting the data it minimises the squared error difference between observations and model predictions. Furthermore, the model includes a free intercept term in excess of the risk-free rate (𝛼), so for its class of models (i.e., linear models with a single predictor) it provides an unbiased estimate of 𝛽, the measure of an asset’s exposure to systematic risk in the market. The ERA then omits the 𝛼 estimate of abnormal returns from the Henry model in its implementation of the Sharpe-Lintner CAPM, deeming these abnormal returns as not reflective of the systematic risk in market prices that is faced by benchmark efficient firms…

In contrast, DBP implements the Black CAPM model by first estimating a zero-beta premium (ZBP). Effectively, this ZBP estimate is a measure of the abnormal returns in excess of the risk-free rate. As such, although the Black CAPM is marginally biased in terms of its predictions (as it does not include a free intercept term) this bias is statistically insignificant. Where DBP and the Authority differ in their positions is that DBP include the full weight of the ZBP, as a de facto measure of abnormal returns in their RoE calculation…

Pink Lake has set out very clearly the mathematical underpinnings of the two modelling approaches, so these are not reproduced here [Pink Lake Analytics, Statistical Advice to ERA on DBP Submission 56, May 2016, p. 4]. Pink Lake’s evaluation confirms that the Authority’s estimate of the SL-CAPM beta is not biased. However, by loading the betastar adjustment into the SL-CAPM beta, DBP biases the estimate of beta in its estimate. At the same time, in so doing, DBP imports all of the deficiencies of its Black CAPM into the resulting SL-CAPM estimate.

It is clear that DBP is mistakenly comparing one form of model (a model of ex-post actual returns – the Black CAPM with a full intercept term, where the zero beta return captures all ex-post anomalies) with another form of model (a model of ex-ante expected returns – the SL-CAPM with no α intercept included). As Partington and Satchell observe [Partington, G. and Satchell, S., Report to the ERA: The Cost of Equity and Asset Pricing Models, May 2016, p. 34.]:

We need to be clear what unbiased means. If it means that the DBP Black CAPM estimates, when subject to a model adequacy test as proposed by DBP, are such that the model adequacy test is not rejected, then they are generally unbiased, at least with respect to the beta sorted portfolios.

However, this view of unbiasedness then gets translated into a view that the regulator who uses the SL CAPM is providing investors with approximately 4% per annum less compensation. This treats low beta ex-post returns as equilibrium returns. Here and elsewhere in the document we take the view that the [SL-CAPM] low beta anomaly is indeed an anomaly. The correct regulatory return would be more sensibly based on subtracting the intercept term from [ex post SL-CAPM] returns, not adjusting the slope and certainly not treating the Black CAPM (unbiased) returns as fair compensation. The more so since the SL CAPM industry portfolios also pass the unbiasedness test.

It follows that if there is any ‘bias’ arising in the Authority’s estimate, that bias occurs with the Authority’s omission of the α intercept term from its statistical estimation process. DBP in essence agrees with this point [DBP, Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period Supporting Submission: 56, 24 February 2016, p. 51].

…the only theoretical difference between the SL-CAPM and the Black CAPM lies not in beta, but on the intercept... The practical effect of this theoretical change is to shift the intercept of the security market line upwards, and thus lessen its slope. This, in turn, makes the expected returns of low beta stocks higher and of high beta stocks lower than predicted by the SL-CAPM.

This is important when considering the bias adjustments made by the ERA and DBP (through its betastar model). The ERA, motivating the “theory” of the Black CAPM, changes beta, using a higher level of beta than the mean value it obtains from its own regressions. However, the theoretical change from the SL-CAPM to the Black CAPM has nothing whatsoever with beta, it is a shift of the intercept.

Pink Lake also recognises that the ‘low beta bias’ issue relates to the interpretation of the intercept in the SL-CAPM estimation process. Pink Lake points out that this makes the whole model adequacy exercise redundant, in so far as it is testing for beta bias [Pink Lake Analytics, Statistical Advice to ERA on DBP Submission 56, May 2016, p. 4]:

For the Authority, the statistical model employed is already an optimally fitting model under reasonable model assumptions. Hence, there is no reason to undertake further the model validation proposed by DBP when adopting the Authority’s position. In contrast, DBP propose to apply the model validation to the RoE calculation itself. As the DBP RoE calculation is essentially the same as their statistical model, then it is self-evident that their RoE calculation does not exhibit significant model bias. Similarly, it is self-evident that the Authority’s RoE calculation does exhibit model bias, as it deliberately excludes the abnormal return component estimated in the Henry model in excess of the risk-free rate. Both the Henry model and the Black CAPM are valid, depending on the position being adopted. The question of which position to accept - either the Authority’s or DBP’s - is therefore not a statistical question, but a question of economics, and one that falls outside the scope and expertise of this consultancy.

Consequently, the Authority now recognises that there is no justification for changing the value of beta in the SL-CAPM. The further implication is clear: DBP, by adjusting beta, is introducing a highly significant bias into the beta estimate in its implementation of the SL-CAPM. The Authority considers DBP’s approach to be in error on this ground.

**The case for an alpha adjustment**

Having examined the implications of DBP’s arguments with regard to the bias in the SL-CAPM, and rejected the case for any adjustment to beta in the SL-CAPM, the Authority now turns to consider whether there is any case to adjust for α in the estimates derived from the model tests.

The Authority considers that there is little compelling evidence about the degree to which the α intercept term, or even part of it, should be included.

A positive intercept in tests of the SL-CAPM does not automatically imply that the Black CAPM applies. Positive intercepts (α) in ex-post outcomes are not automatically estimates of a zero beta premium [Partington, G. and Satchell, S., Report to the ERA: The Cost of Equity and Asset Pricing Models, May 2016, p. 17].

The theory of the SL-CAPM does not include the α term. Rather, the presence of positive (or indeed, a negative value of) α relates to differences (so-called ‘anomalies’) between the *required* (or expected or equilibrium) returns and *realised* returns [Refer paragraph 265 for the links between required, expected and equilibrium returns]. The Authority seeks to ensure that investors in the benchmark efficient entity obtain the required return, consistent with NGR 87 (see paragraph 264). As Partington and Satchell observe [Partington, G. and Satchell, S., Report to the ERA: The Cost of Equity and Asset Pricing Models, May 2016, p. 7]:

When prices are in equilibrium this required return is equal to the expected return, but there is no guarantee that expectations will be realised, or that prices are always in equilibrium. If there were a guarantee that expectations would be realised then the asset would have no risk.

Consistent with that view, the α intercept in *observed* returns should be subtracted in its entirety, in order to establish the required forward looking equilibrium returns [Partington, G. and Satchell, S., Report to the ERA: The Cost of Equity and Asset Pricing Models, May 2016, p. 15:

This usual argument for the Black CAPM is based on the premise that actual returns are equal to equilibrium returns on average and thus a positive intercept in tests of the SL CAPM are assumed to be driven by the SL CAPM underestimating (overestimating) realised returns for low (high) beta stocks. An alternative premise is that the results are a consequence of actual returns outperforming (underperforming) equilibrium returns for low (high) beta stocks. In the parlance of funds management such outperformance is expressed as alpha. Thus low beta stocks have positive alphas. In this case an estimate of the equilibrium return is obtained by subtracting alpha from the actual return. Whether the resulting return is then higher or lower than the regulated return is an open question and will depend upon the magnitude of alpha.

For similar reasons, this subtraction of the intercept term was employed by Henry, in estimating beta, and indeed the same subtraction is adopted by the Authority in its updated estimates of beta for input to the SL-CAPM [It is noted that the alphas in tests of the SL-CAPM, based on beta portfolio sorts, are not identical to the intercept term identified in the Henry-style beta estimation process. Nevertheless, they originate from the same source – that is, from anomalous returns observed in the ex post outcomes]. That is, the intercept in excess of the risk free rate is ignored, forcing the SL-CAPM security market line through the origin, consistent with the theory of the SL-CAPM.

The Authority considers that there is no justification to ‘add back in’ any alpha from the observed returns to the SL-CAPM, where those are simply differences, ex-post, as compared to the ex-ante required returns.

At the same time, the Authority is not convinced there is any empirical evidence at the current time to justify an adjustment to the SL-CAPM for expected alpha for the benchmark efficient entity. As noted above at paragraph 265, theory suggests that if such an expectation was widespread among investors, it would be bid away as part of a movement toward equilibrium asset pricing.

To examine this, the Authority turns to DBP’s own model adequacy test results (even though, for the reasons stated above, the Authority does not consider the model adequacy approach a valid rationale for rejecting the SL-CAPM). DBP’s own estimates indicate that, based on industry sorts, the model adequacy tests conducted by DBP tends to support the SL-CAPM. DBP tests two versions of the SL-CAPM – a vanilla version and an ‘ERA’ version, where it takes the 95th percentile beta of beta for each industry – in two tables in Appendix D of its initial proposal [DBP explain this as follows (DBP, Proposed Revisions DBNGP Access Arrangement, 2016 – 2020 Regulatory Period, Rate of Return, Supporting Submission: 12, 31 December 2014, Appendix D, p. 14):

The results of tests of the SL-CAPM that use industry returns appear in Table 7 below while the results of tests of the ERA’s version of the SL-CAPM, which uses the 95th percentile of an estimate of the distribution of an OLS estimator for beta rather than an estimate of the mean of the distribution (the OLS point estimate), appear in Table 8]. As noted by Partington and Satchell [Partington, G. and Satchell, S., Report to the ERA: The Cost of Equity and Asset Pricing Models, May 2016, p. 21]:

Tables 7 and 8 from DBP [2015]… provide statistics for the mean forecast error for the SL CAPM by industry. The description in DBP’s text says that the results of the ERA’s version of the SL CAPM are in Table 8, whereas according to the title on Table 7 it gives the ERA’s version of the SL CAPM. We think the latter is correct, but fortunately, the labelling is of no real consequence as there is relatively little difference in the nature of the results between the two tables.

The results in Tables 7 and 8 generally are supportive of the SL CAPM. Across the 104 tests in the two tables significant bias is only observed with respect to 3 industries. These are retailing, pharmaceuticals and utilities, which provide six results significant at the 5% level. With the exception of retailing, these results are only significant for Method B. In short there is very little evidence of significant bias and the number of significant results is approximately the number expected by chance. With a type 1 error of 5% we would expect 5.2 of the 104 hypotheses to be rejected even if the null is true. Thus finding only 6 rejections suggests to us that the SL CAPM is supported by these testing procedures.

The Authority agrees with Partington and Satchell that the evidence in these tables is supportive of the SL-CAPM. This is particularly the case for method A, which is the more relevant test (method B does not test any form of expected return, as noted above). DBP dismisses this, on the basis that the industry tests are of low power. However, it is notable that DBP’s argument relates to the – in the Authority’s view – discredited method B [DBP, Proposed Revisions DBNGP Access Arrangement, 2016 – 2020 Regulatory Period, Rate of Return, Supporting Submission: 12, 31 December 2014, Appendix D, p. 14]:

The low power of the tests is illustrated by the fact that a Method B test of the null hypothesis that the ERA’s version of the SL-CAPM provides an unbiased estimator of the return required on a portfolio of utilities is unable to reject at the five percent level the null despite the mean forecast error associated with the estimator being 0.557 percent per month.

The Authority therefore is not convinced that there is strong evidence from DBP’s analysis to reject the standard theoretical form of the SL-CAPM.

The Authority now considers, given these insights, that there is inadequate evidence, at this time, to justify departure from an ex-ante alpha estimate of zero in its implementation of the SL-CAPM:

* a positive intercept in tests of the SL-CAPM does not automatically imply that the Black CAPM applies;
* the theory of the SL-CAPM does not include the α term; rather, the presence of positive (or indeed, a negative value of) α relates to anomalies; and
* DBP’s own estimates indicate that, based on industry sorts, the model adequacy tests conducted by DBP tend to support the SL-CAPM.

On this basis, the resulting implementation of the SL-CAPM becomes consistent with the theoretical form of the SL-CAPM: ex-ante, the SL-CAPM security market line is expected to pass through the zero intercept on the y axis. If positive alpha was expected ex-ante, prices would be expected to adjust to restore equilibrium and an expectation of zero alpha (refer to paragraph 265 above for this rationale).

The corollary is that while the theoretical insights of the Black CAPM are relevant – for example, for informing the theoretical position of the efficient market portfolio on the frontier in mean variance space in the absence of a riskless asset – the thorough exploration of this issue by the Authority identifies that the empirical estimate of the zero beta return, adopted by DBP, contains a large measure of anomalous alpha, and hence overestimates the required return. It is therefore not fit for purpose for estimating the return on equity for the benchmark efficient entity

1. For the reasons discussed by the ERA in the passages which we have extracted at [179] above, the ERA expressed its views at p 65 (par 297) of Appendix 4 in the following terms:

The Authority now considers, given these insights, that there is inadequate evidence, at this time, to justify departure from an ex-ante alpha estimate of zero in its implementation of the SL-CAPM:

* a positive intercept in tests of the SL-CAPM does not automatically imply that the Black CAPM applies;
* the theory of the SL-CAPM does not include the α term; rather, the presence of positive (or indeed, a negative value of) α relates to anomalies; and
* DBP’s own estimates indicate that, based on industry sorts, the model adequacy tests conducted by DBP tend to support the SL-CAPM.

1. The ERA then moved on to discuss the relative acceptability of the SL-CAPM and the Black CAPM.
2. This discussion led to the conclusions expressed at p 69 (par 308) that it was reasonable for the ERA to use the SL-CAPM and that the Black CAPM could not be relied upon.
3. The ERA then moved on to discuss empirical elements of the owners’ return on equity estimates.
4. After referring to a number of reports and items in the financial literature (at pp 69 to 84 of Appendix 4 (pars 309 to 369), at pp 85 to 86 (pars 370 to 382) the ERA said:

On that basis, DBP acknowledges that there is a reversal of ranking of the Fama French model and the CAPM when the method of portfolio formation changes.

Partington and Satchell note that the SL CAPM does not fare particularly well in the Kan, Robotti and Shanken tests, although the Inter temporal CAPM is a clear winner. Their view is that the results of Kan, Robotti and Shanken show the difficulty of all attempts to fit asset pricing models to realised returns, including the work of NERA/HoustonKemp [Partington, G. and Satchell, S., Report to the ERA: The Cost of Equity and Asset Pricing Models, May 2016, p. 28].

The Authority notes the sensitivity of model performance ex post to model specification and portfolio formation. This flags further caution with regard to the findings of DBP, as their work is based on a beta sort, rather than an industry sort.

On balance, the Authority considers that there are still many unsolved issues in relation to the estimates of the zero beta premium. As such, the Authority considers that DBP’s estimates – which use a single estimate of zero beta premium – disguises the significant instability in the model. Therefore, the Authority does not consider that DBP’s model adequacy test is empirically true to the Black CAPM model.

The Authority notes that the unresolved issues in relation to the estimates of the zero beta premium may explain why the Black CAPM has never seen widespread adoption by financial practitioners.

**DBP’s model adequacy test produces nonsensical outcomes**

The Authority notes that based on the findings from its model adequacy test, DBP is of the view that the bias in its Sharpe Lintner CAPM analysis is not only statistically significant, but economically significant as well, with a mean forecast error of around four percentage points per annum. DBP considers that this means that a regulator using the Authority’s approach to setting prices would provide investors with returns that are four percentage points lower than they could be earning by facing similar levels of systematic risk elsewhere in the economy [DBP, Proposed Revisions DBNGP Access Arrangement, 2016 – 2020 Regulatory Period, Rate of Return, Supporting Submission: 12, 31 December 2014, p. 60].

The implication of DBP’s finding is that the expected return on equity for low beta assets, such as the ATCO GDS, the GGP and the DBNGP, needs to be increased by 4 percentage points, based on DBP’s analysis and conclusion. For example, DBP argues that the expected return for DBP or ATCO (a low asset beta) using historical data on DBP’s model adequacy test should be 11.28 per cent.

The Authority notes that the market return on equity for a long period is approximately 10.3 per cent [See the section ‘Lower bound of the MRP range’ below for the Authority’s estimate of the long run historic return on the market], which is lower than DBP’s estimated return for low asset betas such as DBP and ATCO. DBP is therefore suggesting that its return on equity is more risky than the market as a whole. The Authority does not consider that this view is sound.

There is conceptual support for the equity beta of an infrastructure network benchmark efficient entity being less than 1:

* business risk – which may be disaggregated into intrinsic (economic) risk and operational risk – is the primary driver of systematic risk, and this risk is low for the benchmark efficient entity relative to the market average;
* despite relatively high financial leverage, the benchmark efficient entity does not have high financial risk – rather it is the intrinsic risk of the firm which is the key driver of systematic risk.

McKenzie and Partington endorse the view that the equity beta is likely to be below 1, concluding that there is [McKenzie, Partington, Report to the AER: Estimation of the Equity Beta (Conceptual and Regulatory Issues) for a Gas Regulatory Process in 2012, April 2012, p. 15]:

…evidence to suggest that the theoretical beta of the benchmark firm is very low. While it is difficult to provide a point estimate of beta, based on these considerations, it is hard to think of an industry that is more insulated from the business cycle due to inelastic demand and a fixed component to their pricing structure. In this case, one would expect the beta to be among the lowest possible and this conclusion would apply equally irrespective as to whether the benchmark firm is a regulated energy network or a regulated gas transmission pipeline.

The Authority noted these views in its Draft Decision and considered that the reasoning is relevant. This provided further support for the Authority’s view that DBP’s model adequacy test produces a nonsensical results.

DBP took issue with this point, submitting the Authority has ignored standard errors, has failed to take account of the expected return on debt for high risk firms in portfolio 9, and has overlooked that the return on equity can be below the return on debt for long periods [DBP, Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period Supporting Submission: 56, 24 February 2016, p. 42]. However, the fact that the return on equity can be below the return on debt, ex post, simply amplifies the point that ‘no rational investor invests in shares expecting decades of negative real returns ex ante, or expecting that bonds will outperform equities, yet these were actual outcomes. Thus differences between ex ante expectations and ex post outcomes are a major problem for tests of asset pricing models’ [Partington, G. and Satchell, S., Report to the ERA: The Cost of Equity and Asset Pricing Models, May 2016, p. 7]. The Authority remains of the view that the outcomes for portfolio 9 highlight the extreme empirical problems of DBP’s approach.

On balance, the Authority remains of the view that the findings of DBP’s analysis are not robust and the approach produces nonsensical outcomes.

1. The ERA then moved on to consider cross validation issues and the question of consistency between debt and equity.
2. At pp 93 to 96 (pars 425 to 443) of Appendix 4 the ERA expressed its conclusions with respect to relevant models and information produced to it. The ERA said that it had significant concerns with the owners’ estimate for the return on equity – both conceptual and empirical. In particular, the ERA expressed the view that:
3. the model adequacy test approach, which sought to evaluate the forecasting power of various models of the return on equity, was not appropriate for the purpose of estimating the return on equity for regulatory purposes;
4. the ‘betastar’ method (which was intended to transform the results of the Black CAPM into the SL-CAPM) was fraught with conceptual and empirical problems and could not be relied upon to meet the requirements of the NGL (WA) and the NGR because it:
   1. introduced a full quantum of *ex post* anomalous returns into the SL-CAPM beta term;
   2. thereby introducing an adjustment for beta in the SL-CAPM which perversely introduced significant bias into what is an unbiased beta estimate; and
   3. is ill-posed in mathematical terms (that is, is increasingly distorted) as the ZBP/MRP ratio approaches 1, raising serious questions about the veracity of the resulting return on equity;
5. based on the Black CAPM, the owners’ proposals suffered from the fact that estimates of the zero-beta return are unstable and cannot be relied upon in the Australian context. As a consequence, the ERA was not convinced that the Black CAPM is an acceptable pricing model for estimating the return on equity, given that the empirical implementation of the Black CAPM:

(i) is not robust. In contrast to the risk-free rate, the expected return on the zero beta asset is unobservable and there is no apparent consensus on methods for estimating this return;

(ii) relies upon average zero beta return estimated over more than 20 years of data, which typically results in estimates of the zero beta return, and the imputed zero beta premium, being less reflective of prevailing market conditions than the risk free rate estimates utilised in the SL-CAPM; and

(iii) is not widely used in practice. There is little evidence that other regulators, academics or market practitioners used the Black CAPM to estimate the return on equity.

1. At pp 95 to 96 (pars 437 to 443), the ERA said:

The Authority acknowledges that there is much debate about whether an adjustment needs to be made to the SL-CAPM. This was recognised by the Authority in the Guidelines and Draft Decision, with reference to the theoretical properties of Black CAPM. However, analysis since, by the Authority and its consultants, in response to DBP, has made the Authority concerned that it would likely be making a greater error by making an adjustment to the SL-CAPM – through alpha – than by making no adjustment. The Authority is not convinced such an adjustment would meet the allowed rate of return objective, or the requirements of the NGO or the RPP.

Accordingly, the Authority has determined to retain the use of the ‘vanilla’ SL-CAPM for this Final Decision, with the beta parameter based on the central, best estimate. Further, in light of the foregoing, no adjustment is made for alpha.

The Authority is satisfied that the resulting return on equity derived using the SL-CAPM is consistent with the allowed rate of return objective, and with the other requirements of the NGL and NGR. The Authority considers that the resulting SL-CAPM estimate for the return on equity:

* is reflective of economic and finance principles and market information;
* is fit for purpose, which is reflected in its broad acceptance in the finance industry as a means for estimating the cost of capital;
* can be implemented in accordance with good practice;
* is parsimonious, is not unduly sensitive to errors in inputs or arbitrary filtering, and is therefore difficult to game;
* uses input data that is credible and verifiable, comparable and timely and clearly sourced;
* is sufficiently flexible to allow for changing market conditions and new information to be reflected in regulatory outcomes, as appropriate.

In summary, the Authority determines the following for the purpose of estimating a return on equity in this Final Decision:

* The SL-CAPM will be utilised to estimate the return on equity.
* The Fama French (three factor) Model is not relevant and will not be used for the purpose of estimating a return on equity.
* The Black CAPM is relevant for informing the theory of the return on equity.
* However, given it is not reliable and practical to estimate a robust return on equity using this model, the model will not be used directly.
* Neither is it used indirectly. It is only used now to inform the theory of the return on equity.
* A revised consideration of the theoretical implications of the model makes clear that no adjustment to equity beta is appropriate. In addition, the Authority considers that there is no compelling evidence to apply an alpha adjustment to the return on equity determined by the vanilla CAPM, as a means to account for ‘low beta bias’ observed in ex post returns, at the current time.
* The DGM is a relevant model for informing the market return on equity and also the forward looking MRP.
* Other information such as historical data on equity risk premium; surveys of market risk and other equity analysts’ estimates are also relevant for the purpose of estimating the MRP and the market return on equity. In addition, DBP’s primary cross-check method is also accepted. This other material will be used as a cross check for the return on equity.

The Authority remains of the view that its reasons for adopting the SL-CAPM are sound. The Authority considers that its application of the SL-CAPM meets the requirements of the NGL and NGR, including the allowed rate of return objective.

Accordingly, the Authority considers that the estimated return on equity adopted in this Final Decision is commensurate with the equity costs incurred by a benchmark efficient entity with a similar degree of risk as DBP with respect to the provision of reference services. The Authority therefore considers that the estimated rate of return meets the allowed rate of return objectives and the requirements of the NGR and NGL.

In line with the requirements of NGR 87(5), the Authority has evaluated the relevance of a broad range of material for estimating the return on equity, covering relevant estimation methods, financial models, market data and other evidence for this Final Decision.

1. At pp 97 to 98 (pars 446 to 458) of Appendix 4, the ERA set out its reasoning as to why it had come to the view in the final decision that its estimate of the equity beta for use in the SL-CAPM is not biased. Those paragraphs are in the following terms:

**Estimate of the equity beta**

Following further evaluation of DBP’s betastar claims, set out above, the Authority has determined that its estimate of the equity beta for use in the SL-CAPM is not biased. Accordingly, the Authority has determined that it will not adjust beta in determining the return on equity for this Final Decision. The task then is to determine the best, central estimate of beta.

Under the CAPM, the total risk of an asset is divided into systematic and non-systematic risk. Systematic risk is a function of broad macroeconomic factors (such as economic growth rates) that affect all assets and cannot be eliminated by diversification of the investor’s asset portfolio.

The key insight of the CAPM is that the contribution of an asset to the systematic risk of a portfolio of assets is the correct measure of the asset’s risk (known as beta risk), over and above the return on a risk free asset.

In contrast, non-systematic risk relates to the attributes of a particular asset. The CAPM recognises this risk can be managed by portfolio diversification. Therefore, the investor in an asset does not require compensation for this risk.

In the CAPM, the equity beta value is a scaling factor applied to the market risk premium, to reflect the relative systematic risk for the return to equity of the firm in question, as compared to the systematic risk for all assets. Two types of risks are generally considered to determine a value of equity beta for a particular firm: (i) the type of business, and associated capital assets, that the firm operates; and (ii) the amount of financial leverage (gearing) employed by the firm.

In the Rate of Return Guidelines, the Authority considered that empirical evidence provides the best means to inform its judgment for equity beta [Economic Regulation Authority, Explanatory Statement for the Rate of Return Guidelines: Meeting the Requirements of the National Gas Rules, December 2013, p. 161].

However, as discussed above (paragraphs 378 to 380, there is conceptual support for the equity beta of an infrastructure network benchmark efficient entity being less than 1 [See for example Australian Energy Regulator, Draft Decision Jemena (NSW), Attachment 3: Rate of return, November 2014, p. 3-235]. The Authority noted these views in the Draft Decision and considered that the reasoning is relevant [In the Draft Decision, the Authority noted DBP’s view that model adequacy tests suggest that application of the SL-CAPM is not estimating what low beta firms ‘actually earn for their equity investors’ (Dampier Bunbury Pipeline, DBP Submission to ATCO Draft Decision, 7 January 2015, p. 3). However, the Authority considers that the evidence provided by DBP does not accord with the well accepted theoretical underpinnings of the CAPM, in that it suggests that as beta (systematic risk) declines, the equity risk premium increases. This raises significant issues for the DBP empirical analysis, and the underlying quality of the data that is used for that analysis. Similarly, the Authority considers that the points made by the ENA also refer to the same matters (Energy Networks Association, WA ERA Draft Decision for ATCO Gas ENA Response, 12 January 2015, p. 4). In particular, the evidence on the performance of SL-CAPM for low beta stocks evaluated by the ENA’s consultant NERA utilises the same SIRCA database which is used by DBP (see NERA Economic Consulting, Estimates of the zero-beta premium, June 2013, p. 15). Furthermore, as a related point, the Authority does not consider that the four estimates cited by ENA are robust in the Australian context. At the current time, the Authority remains of the view that the conceptual foundation of the CAPM supports the estimates of the return on equity set out in this Final Decision.].

Nonetheless, the conceptual analysis does not provide sufficient grounds to establish the point value of the equity beta. To inform its decision on the point value, the Authority conducted a detailed empirical estimation of the required equity beta as part of the development of the Rate of Return Guidelines [Econometric analysis of beta was conducted in: Economic Regulation Authority, Explanatory Statement for the Rate of Return Guidelines, December 2013, Chapter 12. Justification and explanation for econometric techniques was provided in Economic Regulation Authority, Appendices to the Explanatory Statement for the Rate of Return Guidelines, December 2013, Appendix 17, 22 and 23].

In its Guidelines, the Authority evaluated the following issues in relation to the estimates of equity beta; including:

* the level of imprecision for any empirically estimated value of the equity beta [Economic Regulation Authority, Explanatory Statement for the Rate of Return Guidelines, 16 December 2013, p. 162.];
* a range of other issues, including those relating to sampling and instability; and
* that it was inappropriate to include overseas businesses in the comparator sample which was used to estimate the required equity beta of the benchmark efficient entity [Economic Regulation Authority, Explanatory Statement for the Rate of Return Guidelines, December 2013, p. 188].

The Authority noted in the Guidelines that it would update its estimate of beta at the time of each access arrangement decision [Economic Regulation Authority, Explanatory Statement for the Rate of Return Guidelines, 16 December 2013, p. 197].

For this Final Decision, the Authority will continue to estimate beta in the way that was set out in the Guidelines, albeit updated. Given the decision not to adjust beta – as set out in ‘Step 1 – Identifying relevant materials’ above – the Authority adopts the best, central estimate of beta.

The Authority notes that DBP states that it has no issue with the Authority’s revised estimates for beta that were set out in the Draft Decision [DBP, Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period Supporting Submission: 56, 24 February 2016, p. 63]:

In respect of beta, DBP has no issue with the estimation of beta as undertaken by the ERA; when we use five years of weekly, end-of-the-week returns, we obtain roughly the same results the ERA does.

The Authority therefore takes DBP’s broad acceptance of the beta material set out in the Draft Decision, apart from a number of issues which it raised in its response to the Draft Decision. For example [ibid]:

We do, however, have two issues in respect to beta:

(a) The estimate of beta the ERA has used of 0.7 produces a result which is not consistent with the approach it has used in the past, because it has failed to take into consideration the changes in its beta estimation.

(b) The second relates to a potential issue concerning the efficiency of the market portfolio.

1. At pp 99 to 100 (pars 459 to 466), the ERA set out its response to the submissions made by the owners in respect of beta. The ERA said:

First, the issue raised by DBP that the Authority's Draft Decision estimate of beta, of 0.7, was not consistent with the approach used in the past, refers to the Authority’s previous practice of adjusting beta for so-called low beta bias. However, the Authority indicated in the Rate of Return Guidelines that it would review the evidence for beta adjustment [Economic Regulation Authority, Explanatory Statement for the Rate of Return Guidelines, 16 December 2013, p. 162]. On the basis of the review set out in this Final Decision, the Authority now considers that there is no evidence to support it making an adjustment to beta. Accordingly, the Authority adopts the central, best estimate of beta for this Final Decision. DBP’s point has no bearing on the central, best estimate, as no adjustment is being made. Accordingly, it is not considered further.

However, relevant to that central estimate, DBP raises the issue of a structural break in the estimate of beta, around late 2014, for rolling three year betas, and for five-yearly betas in April 2012 (value-weighted portfolios) and September 2013 (equal weighted portfolios) [DBP, Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period Supporting Submission: 56, 24 February 2016, p. 65]. DBP contends that [DBP, Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Access Arrangement Period Supporting Submission: 56, 24 February 2016, p. 64]:

The changing confidence interval in the ERA’s own analysis points to a deeper issue in respect of beta. That is, beta appears to be changing, and changing substantially, over the past twelve months. Figure 5 provides a comparison of rolling three and five-year betas over the past several years.

However, it is not exactly clear what DBP’s point is [ibid]:

Both beta calculations give roughly similar results until around the end of October 2014. From the end of that date, both begin to trend upwards (as do the ERA’s results), but the three-year betas trend upwards much more sharply. For a value-weighted portfolio, the mean beta estimate, before an adjustment for bias (like the ERA’s choice of 0.7 is around 0.95) and, as CEG points out, the lower bound of the 95 percent confidence interval for a three-year beta is, at present, above the bias-adjusted figure that the ERA uses for beta.

The Authority takes the point that the beta is changing, and that there is then a question of the appropriate averaging period. The Authority notes conflicting views on this topic. For example, SFG submitted to the Authority that it considers it ‘implausible’ that equity beta estimates could change over a two year period [ATCO Gas Australia, ATCO Gas Australia’s Response to the ERA’s Draft Decision, 22 December 2014, Appendix 9.1, p. 9]. However, the rolling beta estimates produced by the Authority in the Guidelines convinced it that, for individual firms, the relative sensitivity to systematic risk can vary quite dramatically [Only HDF falls outside the estimated range]. The Authority has no reason to believe that this does not reflect a re-rating by the market of the respective firms, in terms of risk relative to the market.

Therefore, the Authority considers there is no issue with the fact that the measure of beta does change over time – that is exactly why it undertook, in the Rate of Return Guidelines, to update its estimate of the beta just prior to its Final Decision [Economic Regulation Authority, Explanatory Statement for the Rate of Return Guidelines, 16 December 2013, p. 197]. That said, the Authority considers that five years provides an appropriate estimation period which smooths out short term fluctuations in beta. The Authority does not consider it appropriate to depart from its current practice, of placing emphasis on the five year estimates, simply because the data suggests that a higher estimate of beta could be obtained by using a shorter averaging period. Nonetheless, the Authority notes that information.

Second, the Authority dealt with the issue of the efficiency of the market portfolio at paragraph 324 to 326 above.

DBP also argued that the Authority's approach to selecting beta based on confidence intervals is flawed. DBP argued that [DBP, Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Regulatory Period Supporting Submission: 60 Response to Australian Competition Tribunal Decisions, 22 March 2016, pp. 8-9]:

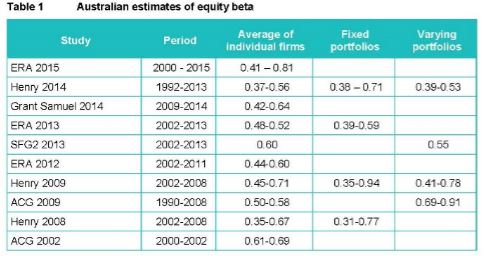
In essence, confidence intervals tell one something about the precision of a parameter estimate (such as of beta) within a given model. However, it tells one nothing about the performance of that model itself. A model can perform very poorly but still have very precisely estimated parameters. The issue of low-beta bias is not a problem in the estimation of beta per-se. As DAA point out, that can be improved simply by increasing sample size. The issue is rather that the outputs of the model produce results which are systematically wrong; too low where the beta of a stock is below one and too high when the beta of a stock is above one.

However, the Authority does not accept DBP’s point here, for the reasons set out under ‘Step 1’ above. DBP is wrong to criticise the Authority’s beta estimates on a basis that is, at its essence, a point about model adequacy. The Authority has rejected DBP’s ‘model adequacy test’ approach to estimating the return on equity. However, the Authority notes that DBP considers that ‘the issue of low-beta bias is not a problem in the estimation of beta per-se’.

1. At pp 100 to 103 (pars 467 to 478) of Appendix 4, the ERA set out its updated estimates of beta for the purposes of its final decision. In those paragraphs, the ERA said:

***The Authority’s updated estimates of beta for this Final Decision***

The following Table 1 reports a range of estimates of Australian infrastructure betas from various sources, with an emphasis on the most relevant and recent.

*Source*: The AER’s Draft Decision for ActweAGL Distribution Determination, Table 3-55, page 3-262 and the ERA’s 2015 study (Economic Regulation Authority, *Draft Decision on Proposed Revisions to the Access Arrangement for the Dampier to Bunbury Natural Gas Pipeline,* 22 December 2016, Appendix 4Aii, p. 233 – 234.

The detail of the Authority’s 2015 study set out in the table was reported at Appendix 4Aii of the Draft Decision.

The Authority noted in the Draft Decision it considered that the 95 per cent confidence interval for the beta estimate was 0.3 to 0.8 [Economic Regulation Authority, Draft Decision on Proposed Revisions to the Access Arrangement for the Dampier to Bunbury Natural Gas Pipeline, 22 December 2016, Appendix 4, p. 52]. The Authority then determined a point estimate for beta at 0.7, allowing for some adjustment towards the top end of the range to account for the theory underpinning the Black CAPM.

DBP contends that the Authority's approach to calculating averages has the effect of artificially lowering the range for beta and does not accord with the Henry approach considered by the Tribunal. DBP states [ibid]:

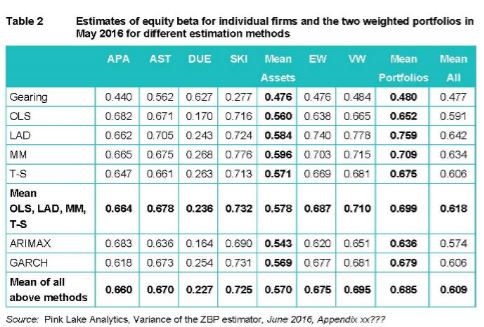
Specifically, the ERA makes four estimates for the individual firms and then two different portfolio estimates. The upper and lower bounds of 0.81 and 0.41 (respectively) are formed by averaging across the six upper bounds of confidence intervals for the LAD regression estimates and the six lower bounds of the LAD regression estimates (the LAD estimates exhibit the widest range - see DDA4 Table 29, page 194). By contrast, Henry (2014) does not mix portfolio and individual estimates in this way, and reports his ranges as the minimum and maximum of the confidence intervals for each set of regressions, rather than the averages across lower and upper bounds.

Three of the four firms examined by the ERA (APA, AST and SKI) give similar results to the portfolio results, generally, but one (DUET) gives results which are substantially below the other three firms, and the portfolios. By forming the averages in the way that it has, the ERA has effectively given disproportionate weight to DUET, and has dragged down its averages accordingly.

The Authority accepts these points in principle, rather than substance (there are issues with the numbers DBP quotes, and its subsequent inferences). The Authority takes account of those points in what follows.

**The Authority’s 2016 estimates**

For this Final Decision, the Authority had Pink Lake Analytics further update the beta estimates for this Final Decision, in part to address the data issues that had been raised by HoustonKemp [Pink Lake Analytics, Variance of the ZBP estimator, June 2016, Appendix G, p. 59]. The detailed results are reported at Appendix 4A, with a key table reproduced here (Table 2).



Drawing on the results reported in Appendix 4A, the Authority considers that a 95 per cent confidence interval range of equity beta using the most recent data is from 0.479 and 0.870 based on the portfolio results (see Appendix 4A, Table 21 and Table 22). The central estimate given by the average of the portfolios is 0.699. The Authority notes that portfolio estimates have a narrower range than the individual assets.

Based on its own analysis and the other evidence before it, together with the recognition that estimates of equity beta from empirical studies exhibit a high level of imprecision, the Authority is of the view that the point estimate of equity beta of 0.7 (rounded) provides a conservative and appropriate central best estimate for beta for use in the SL-CAPM.

*Conclusions with regard to equity beta*

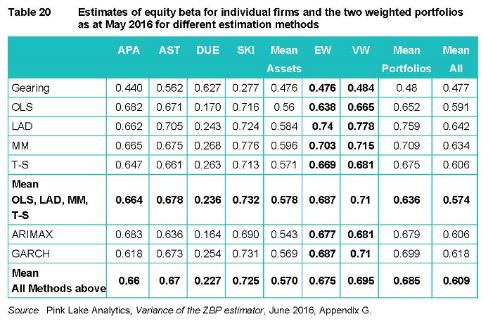
Based on the above considerations, the Authority is of the view that available Australian estimates of equity beta are reliable and that the estimates from these studies should be used to determine an appropriate equity beta for a network service provider.

The Authority considers that available estimates of equity beta in Australia, including Henry’s studies and the Authority’s own analyses, as presented in Table 1 and Table 2 above, as well as submission material from DBP, indicate a best equity beta estimate of (a rounded) 0.7. Rounding the estimate to one significant figure accounts for the acknowledged imprecision of the estimate.

That estimate gives greatest weight to the Authority’s 2016 estimates of equity beta – using data for the most recent 5 years.

On balance, the Authority remains of the view that it is appropriate to account for a range of evidence in its determination of the equity beta point estimate. Based on its considerations outlined above, the Authority has determined to adopt the estimate of equity beta of 0.7 for this Final Decision for the DBNGP.

1. The conclusions expressed by the ERA at pp 100 to 103 (pars 467 to 478) were supported by detailed calculations in Appendix 4A. Appendix 4A reported updated estimates for beta for use in the SL-CAPM. The ERA noted (at p 190 (par 915)) that the ERA engaged Pink Lake Analytics to assist with its analysis.
2. At p 193 (par 930) of Appendix 4A, the ERA produced Table 20. That Table was in the following form:



1. At p 193 (pars 930 to 931) of Appendix 4A, the ERA said:

Table 20 reports estimates of each firm’s beta across the different regression methodologies, with a data set from June 2011 to May 2016. Equally-weighted and value-weighted portfolios are also reported.

The point estimate of 𝛽 for purposes of the Authority’s RoE evaluation is taken fro the mean 𝛽, averaged across the two weighted portfolios and the OLS, LAD, MM and T-S estimators. This results in a 𝛽 = 0.699, rounded to 𝛽 = 0.7 (Table 20)

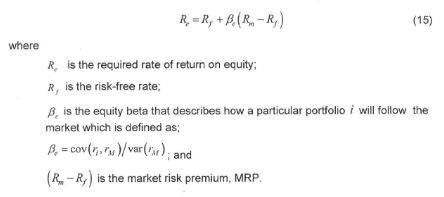
1. In order to establish Ground 1, the owners must satisfy the Tribunal that the ERA has committed a reviewable error within the meaning of s 246 of the NGL(WA) and that, if that ground is made good any likely reconsidered decision would, or would be likely to, result in a material preferable designated NGO decision.
2. We now move to consider the owners’ arguments in relation to Ground 1.

## The Owners’ Submissions

1. The owners submitted that they were low equity beta corporations. That is, investments in them would be considered low risk by the financial markets.
2. The owners also submitted that it is well accepted in financial literature that the application of a *“pure”* or *“vanilla”* SL-CAPM will produce a *“downward bias”* or *“low beta bias”* in estimates of the return on equity for low beta stocks derived from the SL-CAPM.
3. The owners argued that, in those circumstances, it was incumbent upon the ERA to take account of and make an adjustment for that actual or potential bias in the outcomes produced by the SL-CAPM.
4. It is common ground that the ERA applied the SL-CAPM in its pure form and made no adjustment of the kind for which the owners contended.
5. The owners submitted that the ERA committed reviewable error when it failed to make such an adjustment.
6. The owners furnished the Tribunal with very detailed Written Submissions in support of Ground 1. In addition, it addressed the Tribunal orally for some time on the same point. In the paragraphs which follow in this section, we will endeavour to encapsulate the essence of those submissions. Subject to the need to protect legitimate confidentiality claims, those submissions will be available in the Tribunal’s file should recourse to them in the future be necessary.
7. The owners submitted that the ERA’s decision in respect of the allowed rate of return (as to which, see r 87(1) to (7) of the NGR) represents a significant departure from the approach previously adopted by the ERA. The owners also submitted that the ERA’s approach in the final decision diverges materially from the approach of the AER which was considered by the Tribunal in *PIAC and Ausgrid.* In that case, the Tribunal endorsed an approach which used the SL-CAPM but selected the upper end of the derived range for beta in order to account for the potential for underestimation.
8. The owners noted that, in the final decision, the ERA selected the *“central, best estimate”* for beta produced by the SL-CAPM (having separately acknowledged that beta had increased significantly between the date of its ROR Guidelines of 2013 and the final decision in mid-2016) on the basis that:
9. any bias in the SL-CAPM is not due to a bias in beta but is instead due to the fact that low beta stocks have *“positive alpha”* and the SL-CAPM omits the **α** intercept term which records actual alpha, applicable to observe returns;

but that

1. there was insufficient evidence, at this time, to justify an adjustment to the SL-CAPM for expected alpha.
2. The owners accepted that the proposition referred to at [203(a)] above may be accepted as correct in general terms but that there was reviewable error in the second proposition.
3. The owners claimed that the Tribunal should set aside the ERA’s decision in relation to the return on equity because of the error described at [203(b)] above and remit that decision to the ERA to make it again in accordance with any direction or recommendation of the Tribunal. The owners did not put forward a specific solution to the problems created by the alleged error committed by the ERA.
4. Rule 87 was introduced into the NGR in 2013.
5. Previously, the equivalent to r 87 required that the return on equity be determined using *“a well accepted financial model such as the SL-CAPM”*. Those words were removed when the new r 87 was promulgated. Regard must now be had to relevant estimation methods, financial models, market data and other evidence. This approach was confirmed by the Tribunal in *PIAC and Ausgrid* at [650]–[651].
6. The owners’ submissions and the final decision referred in detail to the history of the interactions between the owners and the ERA in relation to the access determination under consideration here.
7. The owners pointed out that, in its ROR Guidelines and in its draft decision, the ERA had suggested an appropriate equity beta was 0.7. Ultimately, in its final decision, the ERA used 0.7. The owners also pointed out that the reasons which underpinned the selection of 0.7 as the appropriate equity beta changed between the time when the ROR Guidelines were first formulated and the date of the final decision.
8. That submission is correct.
9. In the *Explanatory Statement to the Rate of Return Guidelines* promulgated by the ERA, the ERA described in its simplest form the components of the SL-CAPM as follows:



1. For the purposes of its ROR Guidelines, the ERA had formed the view that, of the various models used for the calculation of the return on equity, only the SL-CAPM is relevant for forming the ERA’s estimate of the prevailing view of equity for the regulated firm. The ERA considered that other models were not relevant within the Australian context at the current time, at least without some new developments in terms of the theoretical foundations or in the empirical evidence. This was a view which the ERA maintained throughout the regulatory process in the present case. That approach was not criticised by the owners.
2. As submitted by the owners, however, the ROR Guidelines and the explanatory documents published with them contained acknowledgements from the ERA of the existence of actual or potential downward bias in the SL-CAPM for low beta stocks and of the need to adjust for it. In those documents, the ERA purported to make such an adjustment by determining a range for beta of 0.5–0.7 and then selecting a beta from the top end of that range (0.7). This method of adjusting for the alleged bias was, according to the owners, well accepted by June 2016.
3. By the time of the draft decision, the ERA had derived a different range for equity beta. At p 57 (par 250) of Appendix 4 to the draft decision, the ERA said that it considered that a value of 0.8 would be excessive for a gas distribution network such as the pipeline here, with its highly diversified demand base. Its selection of 0.7 was not the top of that range but rather *“towards the top”* of that range. That range was 0.3 to 0.8.
4. Ultimately, in the final decision, the range for equity beta had again increased. By mid-2016, the 95% confidence interval range for equity beta, using the most recent data, was between 0.479 and 0.870. The central point estimate given by the average of the portfolios which fed into that range for equity beta was 0.6999. In its final decision, the ERA chose to round that central point estimate up to 0.7 and to use that equity beta in the SL-CAPM.
5. The essential error in the approach of the ERA is said by the owners to have been its failure to make any adjustment for the well-accepted proposition that outcomes from the application of the pure SL-CAPM contain a downwards bias in respect of low equity beta stocks. As submitted by the owners, this was a departure from the approach previously taken by the ERA in its ROR Guidelines and also in its draft decision which involved selecting an equity beta at the top or very near to the top of the range under consideration.
6. The owners submitted that it was accepted by both parties that it was not mandatory for the ERA to apply its own guidelines when making its final decision. It was also accepted by both parties that the rule of thumb which efficiently adjusted equity beta by selecting as the appropriate equity beta the top figure in the derived range, an approach which had been adopted in both the ROR Guidelines and in the draft decision, was a rough and ready way of accommodating the actual or potential downwards bias in the outcomes produced by the SL-CAPM in respect of low equity beta stocks.
7. In their submissions, the owners referred in some detail to the empirical work which they had carried out designed to demonstrate that the output of the application of a pure or vanilla SL-CAPM systematically underestimated equity betas for low income stocks when a comparison is made between the actual performance of those stocks over a period of time and the assumptions contained in the SL-CAPM designed to reflect the investors’ expectations with respect to returns on their investments in such stocks. We pause to note that it is not necessary for us to delve into the work in this regard that was carried out by the owners and submitted to the ERA as the owners did not contend before us that the ERA’s decision not to accept the validity of the work which the owners had done and the approach which then deployed that work did not constitute relevant error. In addition, the owners did not press before us that the betastar adjustment which was the subject of submissions to the ERA should be accepted by us as the correct, proper or only way of addressing the problem of what, in the language of the submissions, came to be called low beta bias.
8. The same may be said of the ERA’s rejection of the Black CAPM which records a zero beta premium, something which is not found in the pure or vanilla SL-CAPM and which serves to, in effect, overcome the low beta bias or the high beta bias by what is sometimes called the flattening the security market line. The owners accepted that, in the pure or vanilla SL-CAPM and in the Black CAPM, the equity beta is the same. As we have already mentioned, in the Black CAPM there is a zero risk premium, which is identified by the symbol α in the formula. Making an adjustment to alpha, so the argument ran, is one way of addressing the problem caused by actual or potential low beta bias. There is no alpha in the pure or vanilla SL-CAPM but there is an alpha in the Black CAPM.
9. During oral argument, the owners accepted that applying the betastar model in effect adjusted the SL-CAPM model relevantly so as to make the result the same as the result that would have been achieved had the Black CAPM model been applied. The owners went on to submit that, over a long period of time, the Black CAPM (or empirical model) performed without bias whereas the SL-CAPM did not. Nonetheless, the owners accepted that it was open to the ERA not to apply the Black CAPM model in the present case. Indeed, they accepted that they were not *“taking on that model* *head on”* but rather were seeking to replicate the impact of the model, had it been applied, in the present case.
10. The owners submitted that the ERA committed an error when it declined to use historical data in informing the required rate of return. The submission was that the only reliable way of checking the validity of the SL-CAPM was to compare the assumptions made in that model with the results achieved in fact.
11. The owners also submitted that the ERA committed an error by using an unadjusted SL-CAPM and effectively setting alpha to zero. The owners submitted that this led to a biased outcome and was unjustifiably inconsistent with the previous approaches taken by the ERA.
12. During their oral submissions, the owners (correctly) accepted that, when they used the expression *“a low beta bias”*, they meant to describe the circumstance that the outputs derived through the SL-CAPM will produce returns that are too low for firms that have a low equity beta. It is the outcome which will be biased downwards. It is not the beta integer itself that will be biased.
13. The owners relied upon the reasoning in *PIAC and Ausgrid* in which the Tribunal held that it did not consider that the regulator in that case (the AER) made an error of fact by selecting the SL-CAPM as its foundation model. It arrived at that holding being fully aware of the shortcomings of the SL-CAPM and after a detailed analysis of the relevant underpinnings. Ultimately, the Tribunal also held that no error was made by the AER in selecting the upper point of the range (in that case, 0.7) for the equity beta to be deployed in the SL-CAPM. In the end, the Tribunal accepted that in *PIAC and Ausgrid* there was evidence of a low beta bias but concluded that the way that the AER had responded to that low beta bias did not reveal error.
14. The owners submitted that the ERA had committed an error when it proceeded to derive the figure for equity beta without making some appropriate adjustment for the alleged low beta bias. The source of that error was the ERA’s acceptance that, on the evidence before it, there was no proven alleged bias. The owners submitted that that was illogical when proper regard was had to historical data and appropriate model testing. The owners accepted that one cannot investigate and establish the validity of actual expectations. However, they submitted that the way that models are tested in the world of finance is to test them by reference to outcomes *ex post*. This was a legitimate approach and one which was permitted by r 87 of the NGR.
15. In the present case, the owners did not go so far as to submit that the use of the SL-CAPM, in and of itself, constituted an error on the part of the ERA. The complaint was that, if that model was to be used, it needed to be adjusted to take account of the accepted low beta bias. The owners submitted that the use of the SL-CAPM without adjustment will inevitably produce a return that does not meet the RPP under the NGL(WA).
16. The owners submitted that even the expert retained by the ERA (Pink Lake) expressed the opinion that it would be a legitimate exercise of regulatory discretion for the ERA to have selected the top of the range of equity betas when ultimately making its decision because both it and other regulators had taken that rough and ready approach in the past. However, the owners accepted that making this kind of adjustment to the output of the SL-CAPM was indeed *“rough and ready”*.
17. Senior Counsel for the owners summarised the owners’ submissions in support of Ground 1 at Transcript pp 61–63. In essence, those submissions were:
18. There was no evidence before the ERA that, in the real world of finance, the SL-CAPM is consistently deployed in its pure theoretical form;
19. The SL-CAPM is built on unrealistic assumptions in the sense that they involve expectations of rates of return which are generally not those which are actually achieved;
20. There is a long and widely held view that the SL-CAPM performs poorly in empirical testing;
21. There is a long and widely held view that the SL-CAPM tends to underestimate returns for low risk or low beta stocks. In the past, and including in the ROR Guidelines and in the draft decision in the present case, the ERA has sought to accommodate this low beta bias phenomenon by selecting beta from the high end of the derived range;
22. The Pink Lake Report obtained by the ERA and upon which it relied did support the proposition that addressing low beta bias by selecting a beta from the high end of the derived range is not necessarily the most principled way of dealing with the phenomenon. That is because low beta bias does not mean that estimations of beta are biased downwards. It simply means that the results or outcomes or outputs produced by the SL-CAPM are biased downwards in that returns are too low for low beta stocks;
23. In light of the above matters, the RPP and r 87 of the NGR require the ERA to address the problem of low beta bias in some way. It cannot do nothing. To do so is to commit error. It must make an adjustment to the inputs of the SL-CAPM either by adopting the rough and ready approach reflected in its own guidelines or by adjusting alpha;
24. Taking no action to adjust for low beta bias was an error. The problem had to be addressed. The only two ways that immediately come to mind are through an alpha adjustment or by reverting to the common practice of adopting a beta from the high end of the derived range for equity beta;
25. The ERA committed reviewable error by not making some adjustment. In particular, it preferred theory over reality. The returns may be equilibrium returns insofar as the model is concerned but they will be inadequate when assessed against reality;
26. The NGR do not mandate that the return on equity must be the equilibrium returns identified by the pure form of the SL-CAPM. That may once have been the case, but, since 2013, with the relevant rule amendments, that is certainly not the case any longer; and
27. Here, the ERA has failed, one way or another, to deal with low beta bias with the consequence that the return on equity that has been derived is likely to be insufficient to generate or to attract an efficient level of investment in the network with a further consequence that the ERA has failed to allow a rate of return that achieves the allowed rate of return objective within r 87.

## The ERA’s Submissions

1. The ERA made detailed Written Submissions and oral submissions to the Tribunal. In the succeeding paragraphs, we will endeavour to summarise those submissions.
2. The ERA submitted that in determining the *“allowed rate of return”* (as to which, see r 87(4) and r 87(3) of the NGR) regard must be had to:
3. relevant estimation methods, financial models, market data and other evidence;
4. 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
5. any interrelationships between estimates of financial parameters that are relevant to the estimates of the return on equity and the return on debt.
6. The ERA argued that the return on equity for an *access arrangement period* is to be estimated such that it contributes to the achievement of the *allowed rate of return objective* (as to which, see r 87(3)). In estimating the return on equity under r 87(6), regard must be had to the prevailing conditions in the market for equity funds (r 87(7)).
7. At [715] in *PIAC and Ausgrid*, the Tribunal made a number of observations as to the true interpretation of a rule in the NER which is equivalent to r 87(5). In particular, it addressed remarks to the correct application of the equivalent rule to r 87(5)(a). The Tribunal said:

The relevant textual features, in the view of the Tribunal, are the breadth and generality of the words “relevant estimation methods, financial models, market data and other evidence”. They do not suggest a prescriptive obligation to consider particular methods, models or data. If that were intended, one would expect it to be more prescribed. Rather, it is left to the AER to decide what is “relevant” and a dispute about relevance is not itself a basis for asserting error of the character now asserted. In fact, the AER did have regard – in the sense of considering – the material put forward by the Network Applicants. The same reasoning suggests that the obligation to “have regard to” certain material is to consider it and to give it such weight as the AER decides. Again, if a more sophisticated obligation were intended, it is likely it would have been differently expressed. The main contextual matter indicating the nature of the obligation is the regulatory framework where the RoR Objective is as set out above. It, too, indicates that the requirement to have regard to certain material is not prescriptive in the sense argued for by the Network Applicants. The RoR Objective is the general umbrella concept which the prescribed process is to serve; it would not serve it by requiring particular weight to be given to particular materials. That conclusion is also supported by the AEMC’s views referred to, which indicate that it is left to the AER as the regulator to decide within the relevant Rules how it arrives at a rate of return which is robust and sensible and best achieves the RoR Objective.

1. After referring to the ROR Guidelines, the owners’ proposals and the ERA’s draft decision, the ERA made brief submissions as to the import of its final decision. In particular, it submitted (correctly) that it had concluded in its final decision that the owners’ model adequacy test had conceptual and empirical flaws and was not suitable for assessing the ability of various models of the return on equity to estimate the prevailing return on equity required by investors. The ERA also concluded that the owners’ proposed betastar transformation was unsuitable and determined to use the SL-CAPM as the primary means of estimating the return on equity.
2. The ERA submitted that, in the course of evaluating the owners’ proposals, it also reached the view that there was little evidence that its estimate of beta in the SL-CAPM led to a biased outcome. Even if an adjustment could be justified, the ERA considered that it should be applied to the intercept term in the SL-CAPM, thereby taking account of the alpha term arising in *ex post* tests of the model. However, it was not convinced that there was adequate evidence to justify such an adjustment.
3. The ERA then noted that, for the above reasons, it had determined to use the *“vanilla”* SL-CAPM, with the beta parameter based on the central best estimate (0.6999) with no adjustment made for alpha.
4. The result was that the ERA determined an indicative nominal after tax return on equity of 6.98% giving a nominal after tax WACC of 5.83%.
5. The ERA submitted that there were three prongs to the owners’ challenge to the final decision in respect of ROE. The ERA submitted that, according to the owners, it made errors of fact that were material to the making of its decision, and/or exercised its discretion incorrectly, by:
6. rejecting the owners’ use of historical data to test the outcomes produced by asset pricing models against actual returns on equity;
7. using an unadjusted SL-CAPM (with any estimation alpha ignored or set to zero); and
8. misconstruing the *“industry’s portfolios”* used by the owners as part of their model adequacy test.
9. The ERA submitted that it had not rejected the use of historical data in principle. Rather, so it submitted, it rejected the owners’ methods which had been applied to that data, by its model adequacy test and betastar adjustment, because there were too many flaws in those methods to be able confidently to rely upon them.
10. The ERA noted in its Written Submissions that, in reaching its decision to reject the owners’ proposed use of historical data, the ERA considered the submissions lodged by the owners and others and relied upon advice from its own experts (including, in particular, the views of Pink Lake Analytics and Professors Partington and Satchell).
11. We pause to note at this point that the owners do not advance a case to the effect that the ERA committed an error or errors by not accepting the owners’ approach to historical data. In particular, the owners do not argue before the Tribunal that the ERA’s rejection of its betastar approach was, in and of itself, a reviewable error (see, in particular, the concession made by Senior Counsel for the owners at Transcript p 83 ll 29–34).
12. The ERA submitted that, in the final decision, it had recognised the importance of having regard to observable historical data in determining the return on equity. The ERA used peer reviewed and published historical return data, forward looking data and other relevant models (such as the Dividend Growth Model) when considering the alternative methods for estimating the market risk premium (**MRP**). However, as submitted by the ERA, the ERA was not convinced that the approach advanced by the owners provided an effective test of how well a model estimates investor expectations in the *ex ante*. The ERA considered that the owners’ approach placed undue reliance on testing asset pricing models using *ex post* realised returns.
13. The ERA then made a number of submissions addressing well known issues associated with using expected returns to test asset pricing models.
14. The ERA submitted that actual returns can never be a proxy for expected returns because such a proposition is conceptually unsound. The ERA rejected the notion that differences between actual and expected returns over an extended period influence, or are believed to influence, the rate of return demanded by investors. Such an approach is not a standard approach in investment analysis.
15. It must be remembered, so the ERA submitted, that asset pricing models are not tools for forecasting actual returns.
16. While the ERA accepted that some element of past returns performance might contribute, at least to some extent, to investor expectations for the future, it made the point in its submissions that it is not aware of any reliable empirical measure of the degree to which its investor expectations are influenced by such historical data. The owners did not bring forward any such measure.
17. The ERA noted that the owners had submitted that its approach materially differed from the approach of the AER which had been endorsed by the Tribunal in *PIAC and Ausgrid.* So much may be accepted, so the ERA submitted. However, it went on to submit that its different approach was amply supported by a significant amount of other material, including the Partington and Satchell report of 15 May 2016.
18. The ERA submitted that, on review of this additional material, it was apparent that there was much debate about whether an adjustment needed to be made to the SL-CAPM to account for *“low beta bias”*. The ERA ultimately concluded that there was little evidence that its estimates of beta used in the SL-CAPM were biased in the manner alleged. It then observed that, to the extent that there is any bias in the SL-CAPM, it is more likely to be due to the omission of the alpha intercept term of the SL-CAPM. However, on the evidence available, the ERA concluded that no adjustment for alpha in the estimates derived from the SL-CAPM was justified.
19. Ultimately, the ERA concluded that the available evidence did not justify the kinds of adjustments which were urged upon it by the owners and that, were it to make such adjustments, it would likely be making a greater error than by failing to make any adjustment.
20. The ERA submitted that the above conclusions expressed in its final decision involved the exercise of regulatory judgment by the ERA in deciding which estimation models, financial models, market data and other evidence was relevant and what weight to give to those materials. The ERA did not err, nor was it unreasonable, in reaching the conclusions which it did after having adopted such an approach.
21. In its oral submissions to the Tribunal, the ERA made a number of detailed references to the Pink Lake Analytics report and to the report of Professors Partington and Satchell in order to demonstrate that the evidence allegedly supporting the proposition that the vanilla SL-CAPM contained a low beta bias was not sustainable. It went on to submit that there was no statistically significant provable basis for that proposition.
22. The difficulties in the owners’ approach were highlighted when, during the course of the hearing, the owners propounded (in MFI-2) the precise relief which they now sought. That form of relief (if granted) required the ERA to make a wholesale reassessment of its conclusions in respect of return on equity and ultimately the allowed rate of return within the meaning of r 87. The ERA submitted that the Tribunal would never make an order in such general terms.
23. The ERA submitted that there was ample support in the May 2016 report from Pink Lake Analytics and the report from Professors Partington and Satchell for the proposition that the so-called low beta bias in the SL-CAPM did not exist or, to put the matter more accurately, the evidence suggesting that such a bias existed was not sufficient to justify the conclusion that such a bias actually existed.
24. In oral submissions, Senior Counsel for the ERA emphasised that the SL-CAPM was never intended to incorporate assumptions as to investment returns which bore a close resemblance to reality. The assumptions to be fed into the SL-CAPM involved making rational and justifiable assumptions about investor expectations. Necessarily, that exercise involves looking to the future. Past performance would not necessarily provide a useful guide to making an assessment of such expectations.
25. The ERA also reminded the Tribunal in oral submissions that not only did the owners not now advance a case that error was committed by the ERA in rejecting the betastar model, but also they did not advance a case to the effect that rejecting the Black CAPM constituted a reviewable error or that adopting the SL-CAPM *per se* was such an error. In the end, the owners’ case came down to two alleged errors: First, the ERA committed a reviewable error by failing to acknowledge and proceed upon the basis that the SL-CAPM had a low beta bias. Second, having reached the conclusion that the model contained such bias, it committed errors in failing to adjust the SL-CAPM for that bias. The only two potential adjustments that were identified in argument before us were the *“rough and ready”* approach of adopting as the equity beta that beta which was at the top of the derived range at any given point in time or adjusting the alpha interceptor from zero upwards. The ERA submitted that, even if the owners were correct in their submissions in respect of those two alleged errors, they did not undertake the task of establishing and plainly failed to establish that the adjustments for which they contended would, or would be likely to, result in a materially preferable designated NGO decision.
26. The ERA submitted that, in relying upon the expert advice which it received from Pink Lake Analytics and from Professors Partington and Satchell, it did not misunderstand the import of the opinions expressed by the authors of those reports.
27. The ultimate submission made by the ERA was that, far from failing to take account of the burden of the owners’ responses during the regulatory process, far from proceeding upon false assumptions and far from misunderstanding the issues concerning the need to adjust the SL-CAPM, the ERA had devoted considerable attention to the requirements of s 24 (in respect of the RPP) and r 87 and had not failed to apply that which was required by those stipulations.

## Consideration

1. The RPP require that a service provider (here, the owners) should be provided with a reasonable opportunity to recover at least the efficient costs which it incurs in providing the relevant services (here, the pipeline) and in complying with all relevant regulatory requirements (s 24(2) of the NGL(WA)). According to the RPP, a service provider should be provided with effective incentives to promote economic efficiency in the provision of the relevant services by (amongst other things) the means spelt out in s 24(3) of the NGL(WA). Subsections (4) to (7) of s 28 identify a number of other matters to which *“regard should be had”* by the relevant Regulator when making economic regulatory decisions to which the RPP apply.
2. In performing or exercising its economic regulatory functions or powers under the WA Act, the NGL(WA) and the Regs, the ERA must perform or exercise those functions or powers in a manner that will or is likely to contribute to the achievement of the NGO (s 28(1)(a) of the NGL(WA)). This obligation extends to preferring the decision that the ERA is satisfied will or is likely to contribute to the achievement of the NGO over any other decision that might also contribute to the achievement of the NGO (s 28(1)(b)). In addition, the ERA must take into account the RPP (s 28(2)(a)).
3. The return on the projected capital base for each regulatory year of a particular access arrangement period is to be calculated by applying a rate of return determined in accordance with s 87 (the *allowed rate of return*). The *allowed rate of return* is to be determined so that it achieves the *allowed rate of return objective*. Subject to subrule (2) of r 87, the *allowed rate of return* for a regulatory year is that rate of return which meets the requirements specified in subrules (4) and (5) of r 87 of the NGR. The return on equity is to be estimated upon the basis that it contributes to the achievement of the *allowed rate of return objective* (r 87(6)). In estimating the return on equity under r 87(6), regard must be had to the prevailing conditions in the market for equity funds.
4. The regulatory requirements to which we have referred at [257]–[259] above comprise the relevant regulatory requirements governing the ERA’s decisions which are under challenge by Ground of Review 1.
5. The principles enunciated in *PIAC and Ausgrid* to which we have referred at [106]–[107] and [232] above are highly persuasive and should be applied for the sake of consistency that sensible administration mandates should underpin the regulatory regime.
6. In the end, the owners’ challenge to the ERA’s selection of 0.7 for the equity beta to be applied in the present case comes down to two matters. These are:
7. whether the ERA committed reviewable error by deciding that the available evidence did not justify the conclusion that there was a low beta bias in the outputs from the SL-CAPM; and
8. whether, in any event, the ERA committed reviewable error by declining to adjust the equity beta produced by the SL-CAPM to accommodate the actuality that such bias existed or the potentiality for such bias to exist or, alternatively, by declining to adjust alpha upwards to accommodate such low beta bias (actual or potential).
9. Despite the fact that the owners maintained the position that the ERA had not taken due account of the historical data provided to it by the owners as to actual relevant rates of returns, this complaint did not, in the end, feature prominently in the arguments advanced by the owners before us.
10. In addition, in the end, it seemed to be common ground between the parties that the only means currently available for making the adjustment which the owners said should have been made in the present case were:
11. arbitrarily selecting an equity beta at the top of the derived range, a crude and unprincipled adjustment, at best; or
12. adjusting alpha upwards.
13. Notwithstanding this, for some time, the owners refrained from submitting that the Tribunal should direct the ERA to adopt one or other of these approaches, in the event that the Tribunal were of the opinion that the matter should be remitted to the ERA to reconsider its ROE decision.
14. When it received the owners’ response to its draft decision, the ERA analysed in detail the owners’ model adequacy tests and betastar transformation, which constituted the substance of the owners’ proposal contained in that response.
15. In Appendix 4 to its final decision, the ERA said that it had significant concerns with the owners’ approach—both conceptual and empirical. It then explained those concerns (at pp 57 to 63 (pars 264 to 285)).
16. In the course of that explanation, the ERA repeatedly referred to and relied upon two expert reports which it had obtained: These were the report provided by Pink Lake Analytics entitled *“Statistical Advice to ERA on DBP Submission 56”,* May 2016 (**the Pink Lake Report**) and a report provided by Partington G and Satchell S entitled *“The Cost of Equity and Asset Pricing Models”*, May 2016 (**the Partington and Satchell Report**). The ERA also referred to other academic sources such as, for example, Professor Davis’ well-known paper *“Cost of Equity Issues: A Report for the AER”*, January 2011.
17. At p 57 (par 264), the ERA noted the substance of r 87. At p 57 (par 265), it observed that, when equity prices are in equilibrium in the market, the required return is equal to the expected return. However, the ERA noted that there was no guarantee that expectations will be realised or that prices will always be in equilibrium. That could only be the case if the asset had no risk.
18. There is nothing controversial about the propositions referred to at [269] above.
19. At p 58 (pars 266 and 267), the ERA noted (correctly) that this conceptual difference between expectations and outcome is a major problem for *ex post* tests of asset pricing models, such as that proposed by the owners in the present case. The ERA said (correctly) that rational investors do not take on the additional risk of equity expecting it to deliver less than risky debt, yet this has been an actual outcome in the market over recent times. The ERA noted that the approach of the owners did not actually test the return on equity models against investors’ expectations for that return, *ex ante*, as it would need to do in order to determine whether the outputs of the asset pricing models are biased. Rather, so the ERA said, the owners are testing those models against actual outcomes, realised in *ex post*.
20. At p 59 (par 270), the ERA observed that the method which the owners had adopted in sorting portfolios had reflected its focus on beta bias which was not the appropriate way of testing whether the SL-CAPM was the appropriate model to be used in the present case.
21. At pp 59 to 61 (pars 271 to 278), the ERA examined the owners’ alternative methods for model testing. It ultimately concluded that there were significant issues with the construction of the owners’ model adequacy tests.
22. At pp 61 to 63 (pars 279 to 285), the ERA explained its reasons for thinking that the better way of describing the so called low beta bias was to regard it as an *“anomaly”* rather than a bias. In these paragraphs, the ERA drew substantially upon the Pink Lake Report. The authors of that Report noted (correctly) that the ERA had derived its ROE calculation from the Henry statistical version of the SL-CAPM. The Pink Lake Report went on to explain the methodology of the ERA. This material is recorded at pp 61 to 62 (par 280) of Appendix 4 to the final decision.
23. At p 62 (par 281), the ERA noted that the authors of the Pink Lake Report had confirmed that the ERA’s estimate of the SL-CAPM was not biased.
24. At p 62 (par 283), the ERA concluded that, if there is any *“bias”* arising in the ERA’s estimate, that bias occurs because of the ERA’s omission of the alpha intercept term from its statistical estimation process.
25. After again referring to the Pink Lake Report (at p 63 (par 284)), the ERA expressed its conclusion on the questions of the existence of low beta bias at p 63 (par 285). The ERA said that it had now come to the view that there was no justification for changing the value of beta in the SL-CAPM. In addition, if that beta were to be adjusted in the manner suggested by the owners or, indeed, in any other manner, such an adjustment would introduce a highly significant bias into the beta estimate in its implementation of the SL-CAPM.
26. The ERA then moved to consider the question of whether it was appropriate to make an alpha adjustment. Its consideration of that matter is found at pp 63 to 66 (pars 286 to 299). Throughout its discussion in this part of Appendix 4 to the final decision, the ERA drew heavily on the Pink Lake Report and the Partington and Satchell Report.
27. Ultimately, at p 65 (par 297), the ERA considered that there was inadequate evidence available to it, at this time, to justify a departure from an *ex ante* alpha estimate of zero in its implementation of the SL-CAPM. That is to say, it rejected the notion that an appropriate adjustment could and should be made through an adjustment of the alpha intercept.
28. The ERA then went on to point out that it did not consider the Black CAPM to be the best asset pricing model to be deployed in the present case. We note that the owners do not challenge that conclusion.
29. The ERA then undertook a detailed analysis of the betastar transformation and rejected that approach. Again, we note that the owners do not challenge that decision.
30. At pp 93 to 96 (pars 425 to 443), the ERA gathered together the views which it had expressed at pp 56 to 93 (pars 256 to 424) of Appendix 4 to the final decision and ultimately decided that it would retain the use of the *“vanilla”* SL-CAPM for the final decision, with the beta parameter based on the central best estimate. The ERA also said that, in light of the matters which it had discussed, no adjustment would be made for alpha.
31. At pp 95 to 96 (pars 439 to 443), the ERA said:

The Authority is satisfied that the resulting return on equity derived using the SL-CAPM is consistent with the allowed rate of return objective, and with the other requirements of the NGL and NGR. The Authority considers that the resulting SL-CAPM estimate for the return on equity:

* is reflective of economic and finance principles and market information;
* is fit for purpose, which is reflected in its broad acceptance in the finance industry as a means for estimating the cost of capital;
* can be implemented in accordance with good practice;
* is parsimonious, is not unduly sensitive to errors in inputs or arbitrary filtering, and is therefore difficult to game;
* uses input data that is credible and verifiable, comparable and timely and clearly sourced;
* is sufficiently flexible to allow for changing market conditions and new information to be reflected in regulatory outcomes, as appropriate.

In summary, the Authority determines the following for the purpose of estimating a return on equity in this Final Decision:

* The SL-CAPM will be utilised to estimate the return on equity.
* The Fama French (three factor) Model is not relevant and will not be used for the purpose of estimating a return on equity.
* The Black CAPM is relevant for informing the theory of the return on equity.
* However, given it is not reliable and practical to estimate a robust return on equity using this model, the model will not be used directly.
* Neither is it used indirectly. It is only used now to inform the theory of the return on equity.
* A revised consideration of the theoretical implications of the model makes clear that no adjustment to equity beta is appropriate. In addition, the Authority considers that there is no compelling evidence to apply an alpha adjustment to the return on equity determined by the vanilla CAPM, as a means to account for ‘low beta bias’ observed in ex post returns, at the current time.
* The DGM is a relevant model for informing the market return on equity and also the forward looking MRP.
* Other information such as historical data on equity risk premium; surveys of market risk and other equity analysts’ estimates are also relevant for the purpose of estimating the MRP and the market return on equity. In addition, DBP’s primary cross-check method is also accepted. This other material will be used as a cross check for the return on equity.

The Authority remains of the view that its reasons for adopting the SL-CAPM are sound. The Authority considers that its application of the SL-CAPM meets the requirements of the NGL and NGR, including the allowed rate of return objective.

Accordingly, the Authority considers that the estimated return on equity adopted in this Final Decision is commensurate with the equity costs incurred by a benchmark efficient entity with a similar degree of risk as DBP with respect to the provision of reference services. The Authority therefore considers that the estimated rate of return meets the allowed rate of return objectives and the requirements of the NGR and NGL.

In line with the requirements of NGR 87(5), the Authority has evaluated the relevance of a broad range of material for estimating the return on equity, covering relevant estimation methods, financial models, market data and other evidence for this Final Decision.

1. The ERA recognised that it had changed its approach to the question of assessing equity beta from the position which it had adopted in the ROR Guidelines and in the draft decision. It restated that conclusion at p 99 (par 459) of Appendix 4 to the final decision.
2. The Pink Lake Report provided to the ERA an updated range for equity beta derived from the SL-CAPM. The work undertaken by Pink Lake Analytics in order to provide that range to the ERA is found in Appendix 4A to the final decision. Based upon the Pink Lake Analytics report, the ERA concluded that a 95% confidence interval range of equity beta using the most recent data is from 0.479 to 0.870. It went on to say that the central best estimate given by the average of the portfolios is 0.699. Senior Counsel for the ERA pointed out to the Tribunal (correctly) that the central best estimate was the mean of the mean portfolios that fed into the model.
3. There is no doubt that the ERA’s conclusion that there is insufficient evidence to support the notion that the use of a pure *“vanilla”* SL-CAPM will produce outputs which have a low beta bias was based upon the opinions of the experts which it retained and did not involve any misunderstanding on the part of the ERA as to the substance of those opinions. Further, there is also no doubt that the ERA’s decision to adopt the central best estimate from the range of beta so derived and not to make any arbitrary adjustment to that central best estimate was also based upon the opinions of the experts who were providing advice to it. Again, there can be no suggestion that the ERA misunderstood the import of those opinions. Similarly, the ERA’s decision not to make an adjustment to alpha was also based upon the advice of its expert advisers.
4. We think that it is well to remember the function which a capital asset pricing model performs. At a general level, this is explained succinctly at p 161 (pars 739 to 743) of the *“Explanatory Statement for the Rate of Return Guidelines”* promulgated by the ERA. In those paragraphs, the ERA said:

Under the capital asset pricing model (**CAPM**) model, the total risk of an asset is divided into systematic and non-systematic risk. Systematic risk is a function of broad macroeconomic factors (such as economic growth rates) that affect all assets and cannot be eliminated by diversification of the investor’s asset portfolio.

The key insight of the CAPM is that the contribution of an asset to the systematic risk of a portfolio of assets is the correct measure of the asset’s risk (known as beta risk) and the only systematic determinant of the asset’s return, over and above the return on a risk free asset.

In contrast, non-systematic risk relates to the attributes of a particular asset. The CAPM assumes this risk can be managed by portfolio diversification. Therefore, the investor in an asset does not require compensation for this risk.

Formally, there are three main components of the Sharpe Lintner CAPM for measuring the return on an asset: (i) the market risk premium (MRP), which is the return on the market portfolio in excess of the risk free rate of return, (ii) the beta risk *ß*, which correlates the return on the specific asset, in excess of the risk free rate of return, to the rise and fall of the return on the market portfolio and iii) the risk free rate of return. The most common formulation of the CAPM directly estimates the required return on the equity share of an asset as a linear function of the risk free rate and a component to reflect the risk premium that investors would require over the risk free rate:

*Re = Rf + ße(Rm – Rf)*

where

*Re* is the required rate of return on equity;

*Rf* is the risk-free rate;

*ße* is the equity beta that describes how a particular portfolio *i* will follow the market which is defined as;

*ße* = cov(r*i*, r*M*)/var(r*M*); and

*(Rm – Rf*) is the market risk premium, MRP

*Rf* is the market risk premium, MRP. 743.

In the CAPM, the equity beta value is a scaling factor applied to the market risk premium, to reflect the relative risk for the return to equity of the firm in question. Two types of risks are generally considered to determine a value of equity beta for a particular firm: (i) the type of business, and associated capital assets, that the firm operates; and (ii) the amount of financial leverage (gearing) employed by the firm.

1. The SL-CAPM is a well-known, well-understood, robust, acceptable and tried-and-true capital asset pricing model. No criticism can be made of the ERA for deploying that model in the present circumstances. Indeed, no such criticism is made in the present case.
2. In the end, the issue before us was very narrow indeed. It was confined to the question of whether some adjustment to the output or alternatively to the alpha intercept should be made in order to reflect some alleged low beta bias.
3. We are of the opinion that, in adopting the approach which it did, the ERA did not commit reviewable error.
4. The discussion of similar issues at [719] to [788] in *PIAC and Ausgrid* is not inconsistent with our conclusions in respect of the current challenges to the ERA’s decision concerning equity beta. Indeed, the reasoning in those paragraphs supports the use of the SL-CAPM.
5. The approach advocated by the owners in its response to the draft decision cannot truly be classified as a methodology for the assessment of equity beta. However, on the assumption that it can be so classified, the present case is covered by the reasoning of the Full Court in *ACCC v ACT* (at 73 to 74 ([171] to [172]) to which we have referred at [117] above. It is not a finding of fact for the decision maker to make a choice between permitted methodologies for the calculation of total revenue nor is it an error of fact for the decision maker to base its ultimate decision upon a choice of one methodology over another. As the Full Court said, the relative weight to be given to the factors set out in the relevant statutory provision was a matter of discretion (or regulatory judgment) rather than a finding of fact which can be impugned as such.
6. Here, the exercise by the ERA of regulatory judgment (or discretion) was correct, having regard to all of the circumstances, nor was it unreasonable. Furthermore, even if we are wrong in those conclusions, we are of the opinion that the owners have fallen well short of establishing that a reconsideration by the ERA of its assessment of equity beta would, or would be likely to, result in a materially preferable designated NGO decision (as to which, see s 246(1)(a)). *Prima facie*, such a result would seem extremely unlikely.
7. We should also record that we have found the submissions made on behalf of the ERA in relation to Review Ground 1 which we have summarised at [229]–[256] above to be both correct and persuasive. We accept those submissions.
8. The form of relief ultimately sought by the owners in relation to Review Ground 1 is found in MFI-2. In that document, the owners claimed that the final decision, insofar as it estimated the owners’ return on equity as a component of the required rate of return, should be set aside and remitted to the ERA upon the basis that the ERA be directed to, in effect, adjust for the so-called low beta bias:
9. by relating actual/historical returns to the SL-CAPM; or
10. if it reasonably considers that it is unable to make such an adjustment in a sufficiently transparent way, by selecting that beta which is at the top of the range in the final range of betas supplied to the ERA by Pink Lake Analytics (0.87), as to which, see the extracts from Appendix 4 set out at [192] above.

If it were necessary to decide, we would not be prepared to grant relief in that form because:

1. the primary claim for relief would, if granted, present a near impossible task for the ERA; and
2. the second claim for relief, namely, the selection of 0.87 as the appropriate equity beta, would produce an arbitrary result.
3. For all of the above reasons, we reject Review Ground 1.

# Ground 2 – The Owners’ Challenge to the Gamma Decision

## The Issue

1. The owners complain about the ERA’s final decision to deploy a gamma of 0.4 as the value of imputation credits to be inputted into the building block model. The critical questions raised by this ground of review involve the true interpretation of r 87A and its correct application in the circumstances of the present case insofar as the assessment of the value of imputation credits (gamma) is concerned. As the ERA said in Appendix 5, the gamma parameter accounts for the reduction in the effective corporate taxation that is generated by the distribution of franking credits to investors. As a general rule, investors who are able to utilise franking credits will accept the lower required rate of return, before personal tax, on an investment that has franking credits, compared with an investment that has similar risk and no franking credits, all other things being equal. As the owners also submitted, if the benefit to investors from imputation credits is not taken into account, the amount of revenue required to provide an appropriate return to investors would be overstated. Since allowable revenue has to include (*inter alia*) an amount to cover the costs of corporate income tax and an amount for the return on equity, mathematically the benefit that investors obtain from imputation credits could be deducted from either with the same effect. The NGR adopts the approach of deducting the benefit from the cost of corporate income tax.
2. In its final decision, the ERA derived a gamma of 0.4.
3. In the present case, the owners complain that the ERA’s derived gamma overstated the value of the imputation credits to be deducted. The owners contended that this was brought about by the application to the relevant formula of an incorrect utilisation rate (theta). The owners’ proposition (based upon the Tribunal’s decision in *PIAC and Ausgrid*), was that the ERA has utilised methods that measure the wrong thing. It was submitted that the ERA’s approach is inconsistent with the proper construction of r 87A, inconsistent with the proper conceptual approach to the treatment of imputation credits in the scheme of economic regulation, inconsistent with the ERA’s approach to return on equity and inconsistent with the satisfaction of the NGO.
4. The owners observed that the common approach to the assessment of gamma is that gamma, in the formula in r 87A of the NGR, is to be calculated as the product of:
5. The distribution rate for imputation credits, usually expressed as a decimal ratio; and
6. The value of distributed imputation credits (theta), again expressed as a decimal ratio.

That is, gamma equals distribution rate times theta.

1. The ERA’s decision in respect of gamma is effectively the same decision as it made in the *ATCO Gas* case and the same as the decision that the AER made that was subject to review by the Tribunal in *Application by SA Power Networks* [2016] ACompT 11 (*SA Power Networks*). The decision of the Tribunal in *PIAC and Ausgrid* employed different reasoning and supports a position adopted by the owners in the present case. The ERA adopted the same gamma (0.4) as it had adopted in *ATCO Gas* and as the AER had adopted in *SA Power Networks*. The owners contended for a gamma of 0.25 which they said was supported by *PIAC and Ausgrid*.
2. The owners also relied upon the concession made by the ERA in the *ATCO Gas* case to the effect that it had made a reviewable error by applying a gamma of 0.4 and that the best estimate of gamma on the basis of the material before the ERA at the time of its decision in the *ATCO Gas* case was 0.25.
3. At pars 266 to 269 of their Written Submissions, the owners said:

As a matter of discretion, this Tribunal should not embark upon another reconsideration of the same decision that has recently been found by a differently constituted panel of the Tribunal to involve error, but rather should simply adopt the earlier Tribunal decision. Aside from the cost to the parties of re-hearing the same issues for what will be a fourth time, any reconsideration would also give rise to the risk of inconsistent Tribunal judgments on the very same decision. Amongst other difficulties with such a result, it would undermine confidence and certainty in the regulatory regime, and would therefore not promote the objects of the statutory schemes under which the Tribunal carries out its review functions (i.e. the NGO). Those considerations apply *a fortiori* in respect to the ERA’s inconsistent approaches between ATCO Gas and the Applicant, including its concession in *ATCO Gas* that it would be against the public interest, in promoting consistency of decision making, to reargue the matters determined in *PIAC and Ausgrid*.

A further reason not to reconsider the issue is because of the AER’s judicial review application (including the gamma ground) which is being heard by the Full Court of the Federal Court in October 2016 [Australian Energy Regulator v Australian Competition Tribunal & Anor, NSD 415 - 420 of 2016. As at the date of these submissions, the hearing is part heard and commenced on 18 October 2016]. If there is any error in the previous Tribunal decision, then this will be considered by the Full Court. This provides two further reasons for the present Tribunal not to embark upon a reconsideration. First, the issue is being considered elsewhere. Secondly, if the present Tribunal was to embark upon a reconsideration of the gamma issue, then there would be separate consideration by each of the current Tribunal, and the Full Court, of the question of whether the previous Tribunal decision was affected by any relevant error. This would present the obvious risk of inconsistent judgments from the current Tribunal and the Full Court.

Therefore, the Tribunal’s consideration in the present case should, as a matter of discretion, be limited to a consideration of whether there is anything in the present ERA decision that distinguishes it from the earlier decisions.

It is only against the possibility that the Tribunal does not accept this submission that we have, commencing in the next section, addressed the wider issues dealt with in *PIAC and Ausgrid*.

1. The owners then embarked a very detailed set of submissions seeking to support the reasoning in *PIAC and Ausgrid* and seeking to demonstrate that the ERA committed reviewable error.
2. As we have mentioned at [122] above, the Full Court in *AER v ACT (No 2)* considered the question of gamma in considerable detail. The Full Court adopted the same approach in *SAPN*. The decision of the Full Court in that matter is important for present purposes. We shall discuss that decision after the next section of these Reasons in which we set out the terms of the final decision relevant to gamma.

## The Final Decision (Gamma)

1. At p 223 (pars 1071 to 1075), the ERA set out its ultimate conclusions in relation to the value of gamma. In those paragraphs, it said:

The Authority is required by the NGR to estimate the value of gamma, a parameter in the building block revenue model.

The gamma parameter accounts for the reduction in the effective corporate taxation that is generated by the distribution of franking credits to investors. As a general rule, investors who are able to utilise franking credits will accept a lower required rate of return, before personal tax, on an investment that has franking credits, compared with an investment that has similar risk and no franking credits, all other things being equal.

DBP’s original proposal included a gamma of 0.25. In its Draft Decision the Authority did not accept this value and instead determined a gamma of 0.4. The Authority required the following amendment:

Required Amendment 15

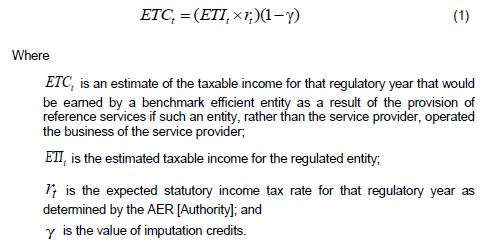
DBP is required to adopt a gamma of 0.4.

In its response to the Draft Decision, DBP did not accept Required Amendment 14.

The Authority’s consideration of DBP’s amended proposal is set out in Appendix 5. The Authority has determined a gamma of 0.4. Reasoning for the Authority’s decision is set out in Appendix 5 of this Final Decision.

1. The reasoning of the ERA in respect of gamma is found in Appendix 5 to the final decision.
2. In Appendix 5 to the final decision, the ERA gave a brief account of the history of its assessment of gamma.
3. At p 7 (par 41) of Appendix 5, the ERA recorded that, for the purposes of its draft decision, it had re-examined its method for estimating gamma and had adopted a different estimate to that which it had set out in the ROR Guidelines.
4. At pp 7 to 8 (pars 42 to 44), the ERA said that it had further considered its position in light of the owners’ response to its draft decision and that, in evaluating its position, it had taken into account a large number of factors and reports listed in those paragraphs. At p 8 (par 43), the ERA noted that the experts to whom it had had regard differed in their interpretation of the best approach to estimating gamma in the regulatory setting. This was particularly the case with regard to the value of the utilisation rate (theta). The ERA stated that it did not consider that the Tribunal had come to a firm position in relation to the correct approach to gamma in the regulatory context and that it was not, therefore, bound to follow the Tribunal’s decision in relation to gamma in *PIAC and Ausgrid*.
5. At pp 1 to 2 (pars 3 to 10) of Appendix 5, the ERA explained its understanding of the relevant regulatory requirements in the following manner (omitting footnotes):

Rule 87A of the NGR requires that the estimated cost of corporate income tax of a service provider for each regulatory year of an access arrangement period (ETCt) is to be estimated in accordance with formula (1).



Rule 87A accounts for the ability of imputation credits to reduce the effective corporate tax rate for equity investors.

In determining the value of imputation credits, the Authority is required to account for the national gas objective, the National Gas Law (**NGL**) (including the revenue and pricing principles) and the NGR.

In the Rate of Return Guidelines, the Authority estimated gamma (*y*) as the product of the distribution rate *F* and the estimate of the utilisation rate *ø (*theta), consistent with the approach set out in the Rate of Return Guidelines (equation 2)

*y = F × ø*

Under this Officer formulation (as extended by Monkhouse), gamma depends on the degree to which imputation credits are distributed and the degree to which investors utilise those credits that are distributed.

Contributing to the estimate of gamma, the Rate of Return Guidelines adopted an estimate for the distribution rate, *F*, of 0.7. The 0.7 rate was based on Australian Taxation Office (**ATO**) data showing around 70 per cent of cumulative imputation credits created had been distributed.

For the utilisation rate, the Rate of Return Guidelines adopted a range of 0.35 to 0.55. This estimated range was based on the results of Dividend Drop Off (**DDO**) studies.

The resulting range for gamma adopted for the Rate of Return Guidelines – given by the product of distribution rate and the range for the utilisation rate – was 0.25 to 0.385.

1. At p 10 (par 51), the ERA said that it took the view that the benefit arising from imputation credits can be interpreted as the proportion of franking credits distributed, multiplied by the proportion of those that are utilised by the representative investor. The ERA then referred to an expert report from the owners’ consultant (Gray) and noted that the key challenge to the ERA’s revised view of gamma therefore related to the estimate of the utilisation rate (theta).
2. Then, at pp 11 to 15 (pars 55 to 69) of Appendix 5, the ERA explained the essence of its view in relation to the utilisation rate (theta). In those paragraphs, the ERA said (omitting footnotes):

The Authority considers that the benefit of distributed imputation credits will rely on the proportion of franking credits received that are utilised by the representative investor. The estimate of this proportion is the utilisation rate, theta (*ø*).

The Authority notes that the utilisation rate is a market-level parameter, meaning that the same value applies to all firms.

Individual investors have differing utilisation rates; investors who are able to fully use tax credits are assigned a value of one whilst investors who cannot are assigned a value of zero. These individual utilisation rates may be weighted to produce the required market-level utilisation rate *θ*. The Authority therefore considers that θ ‘is a complex weighted average over all investors holding risky assets, where the weights incorporate each investor’s investment in risky assets, and their level of risk aversion.

To this end, the Authority’s previous (Rate of Return Guidelines) estimation approach for estimating theta – using DDO studies – may not correctly estimate the utilisation rate required, as, among other things:

* The utilisation rate is a complex weighted average over investors, reflecting their relative wealth and risk aversion, and this need not correspond to the market value of the credits whether estimated by a DDO study or any other market based method. Even Gray accepts that, if theta is not defined as the market value of the credits, then market value studies such as DDO analysis will be of limited relevance.
* DDO studies at best only estimate the utilisation rate around just two days, the cum-dividend and ex-dividend dates. As a consequence, they provide an estimate of the utilisation rate with weights that reflect the composition of investors around the cum and ex dividend dates, not the weighted average across all points in time, as required. Furthermore, such investors may be quite untypical of investors in general. The ‘market’ value in these studies are influenced by the *marginal* investor over those dates, rather than the value attributed across all investors.
* DDO studies may not accurately separate out the effect of the taxation benefits associated with imputation credits on the share price change from the effect of the cash dividend. There are a range of statistical models that could be used, choices over which data to use, and the results seem to be quite sensitive to a small number of outlying observations.
* There is considerable evidence of anomalous share price behaviour around ex days, which raises the possibility that any estimate of the utilisation rate from a DDO is instead reflecting that anomalous behaviour.
* Estimates of the market value of the credits from methods other than DDOs produce markedly different results, which undermines the credibility of such market-based estimates.

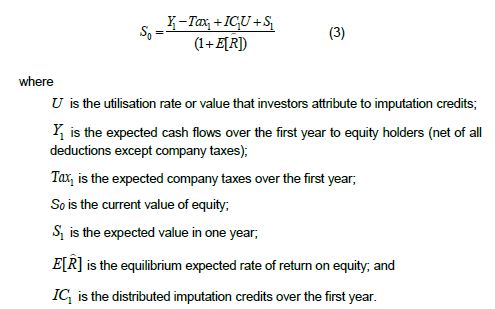
For these reasons, the Authority has determined to place limited weight on the DDO estimates, and on the range of applied market value estimates more generally.

The Authority instead considers other approaches to estimating the utilisation rate.

In response, DBP’s consultant Gray has argued that the Authority is in error in interpreting theta (and hence gamma) as the utilisation rate, rather than in terms of the value to the representative investor.

First, Gray points to the revised language of NGR 87A, which states that ‘gamma is the value of imputation credits’, rather than the previous term ‘utilisation of imputation credits’. Gray acknowledges that the Australian Energy Market Commission did not provide a detailed explanation about the changed language in its Final Determination, but considers that its apparent intention was to be clear that imputation credits did not rely on utilisation. The Authority notes that the AER sought clarification from the AEMC on the reason for the change, which was unable to provide ‘any further insight’.66 In any event, the definition of a parameter within a model can only be determined from a rigorous derivation of the model.

Second, Gray has argued that the parameter U in the following equation from Lally’s analysis, specifically within the term IC1U, is defined as the value that investors attribute to imputation credits:



However, the Authority notes that Lally clearly states in context that U in the equation is a market level parameter, derived as a complex weighted average over all investors holding risky assets:

So, relative to the standard form of the CAPM, the Officer CAPM and the associated cash flows requires three additional parameters: the ratio of market-level imputation credits to the value of the market portfolio (ICm/Sm), the ratio of firm-level imputation credits to firm level company tax payments (IC/TAX) and the utilisation rate (U). The second of these parameters is called the “distribution rate” and the product of the last two is called “gamma”.

The utilisation rate referred to here is a market-level parameter, i.e., the same value applies to each firm. Individual investors also have utilisation rates: one for those who can fully use the credits and zero for those who can’t. Consequently it might be presumed that U is some type of weighted average over investors. Although Officer (1994) provides no clarification on this matter, because his derivation of the model is intuitive rather than formal, Lally and van Zijl (2003, section 3) provide a formal derivation of a generalisation of Officer’s model (with the Officer model being a special case), in which variation of utilisation rates across investors is recognised. In this derivation, they show that U is a complex weighted average over all investors holding risky assets, where the weights involve each investor’s investment in risky assets and their risk aversion. Individual investors’ levels of risk aversion are not observable. Accordingly it is necessary to (reasonably) act as if risk aversion is uncorrelated with utilisation rate at the investor level, in which case the weights reduce to investors’ relative investments in risky assets, i.e., U is a value-weighted average over the utilisation rates of individual investors.

Third, Gray considers that there is a material difference between the utilisation rate (the proportion of credits that are redeemed at the tax office) and the value of those credits to shareholders. Gray’s core argument is that there is a cost for an investor to obtain and redeem a credit. Gray considers that:

• some credits that are distributed are never redeemed, for example because;

– the investors are non-residents; and

– the 45 day rule precludes it;

• record keeping creates administrative costs;

• there is a time delay in obtaining the benefit;

• imputation credits are taxed at their face value;

• as resident investors adjust their portfolio to hold domestic shares for imputation, their portfolios will become less diversified, at a cost; and

• a rational investor would increase the concentration of domestic shares in their portfolio until the marginal benefit of imputation is zero.

The Authority has noted these points, but has come to the view that:

• the first of these points is uncontroversial; it reduces both the utilisation rate as properly defined and the market value of the credits;

• the remaining points do or may give rise to a divergence between the utilisation rate as properly defined and the market value of the credits, but any such divergences make the market value of the credits less suitable as an estimator of the utilisation rate;

• these are arguments against using market prices to estimate the utilisation rate rather than arguments in support of using market prices;

• the effects of the time value of money are likely to be minimal, given the period of delay; and

• there is no empirical evidence on the diversification effect of imputation credits, and no clear theoretical position for the effect either.

In addition, transaction and other costs are unlikely to materially affect redemption of imputation credits, as investors are required to report franked dividends and eligible imputation credits, such that the incremental cost of these other costs to shareholding is likely to be small.

The Authority’s view then is that these considerations do not detract from the fact that some investors will redeem credits, and thus have a utilisation rate of 1, and other investors in the Australian share market will not redeem credits, and will thus have a utilisation rate of 0. In the Authority’s view, there is no case here that the utilisation rate is not a complex weighted average across all investors, both domestic and international. That complex weighted average depends on risk aversion and wealth.

Therefore the Authority is of the view that approaches that directly inform the degree of utilisation of imputation credits will provide relevant information. Those approaches include the domestic ownership share of equity, and taxation statistics on the proportion of redeemed imputation credits.

1. Throughout the paragraphs which I have extracted from Appendix 5, the ERA supported its observations by references to two reports. Those reports were: Lally M, *The Estimation of Gamma*, Report for the AER, November 2013; and Lally M and van Zijl T, *Capital Gains Tax and the Capital Asset Pricing Model*, Accounting and Finance, Vol 43, 2003. The ERA also referred to the experts relied upon by the owners, being the report of Gray (SFG Consulting) and a report from Frontier Economics.
2. The ERA continued to discuss the various experts’ reports at pp 15 to 21 (pars 68 to 92) of Appendix 5.
3. At p 21 (pars 90 to 92), the ERA said:

The Authority notes that both Handley and Lally consider that it is appropriate to assume a domestic capital market for the purpose of estimating theta. Further, both take the position – in opposition to Gray – that the complex weighted average approach is preferable to market based approaches. The main point of difference between Handley and Lally is whether or not international investors should be excluded from the model.

Based on the foregoing, the Authority considers, on the balance of the arguments, that use of the CAPM and interpretation of theta as the utilisation rate (as a complex weighted average) is consistent with the assumption that the CAPM applies to a domestic market that includes the presence of international investors.

In light of the foregoing, the Authority considers that there is considerable uncertainty surrounding the estimation of the utilisation rate. The Authority therefore considers that applying a range of approaches is desirable in determining the estimate.

1. The ERA utilised data from all equity (both listed and unlisted).
2. At pp 25 to 26 (pars 107 to 112), the ERA set out its conclusions in relation to the utilisation rate and the reasons for those conclusions. In those paragraphs (omitting footnotes) the ERA said:

The Authority estimates the utilisation rate of imputation credits as being in the range of 0.47 to 0.59 at the current time (based on the most recent ABS data for December 2015, and using the ‘refined’ approach), depending on whether the estimate is based on listed or all equity respectively.

The Authority notes that this is somewhat lower than Handley’s estimate, which is that the corresponding range is 0.5 to 0.7, depending on whether listed or all equity is used. The Authority notes that Handley’s estimate is based on earlier ABS data (March 2014), and also took account of the estimate of Hathaway, that ‘domestic investors held between 75 per cent and 81 per cent of Australian equity between 1988 and 2012’. The Authority has not accounted for Hathaway’s data, given its preference to focus on the estimates for the post-2000 period.

In respect of the choice between listed and all equity, the fact that only listed equity is used to estimate the MRP and beta suggests that the same limitation be applied to the present issue. However, Lally argues that the limitation is only imposed for the MRP and beta because data from unlisted firms is entirely inadequate for estimating returns.

The Authority notes this argument for the use of listed equity, but is also aware that there is a lack of consensus in relation to this point. In the recent AusNet Services decision, the AER responded by considering both listed equity, and all equity (both listed and unlisted). The Authority has adopted a similar approach in this decision.

In its recent PIAC-AusGrid Decision, the ACT argues that the estimate of theta from the equity ownership approach is an upper bound, due to time delays, administrative costs in distributing the credits, portfolio effects, and the effect of the 45 day rule. Given the ACT’s belief that theta is the market value of the credits, this would seem to follow. However, the Authority considers that the ACT’s belief about theta is in error; theta is not the market value of the credits but is instead a complex weighted average over investors’ utilisation rates.

In addition, even if theta were the market value of the credits, the belief that the equity ownership proportion necessarily exceeds the market value of the credits due to administrative costs, time delays, portfolio effects, *et cetera* is erroneous. For example, if 50 per cent of Australian equities were foreign owned on average, tax arbitrage involving local investors buying shares shortly before dividend ex-days and selling them shortly afterwards could lead to all credits being redeemed by locals and therefore the market value on the credits could be close to 1.0. Consequently, the market value of the credits may be above the proportion of equity owned by Australian investors.

1. The ERA then turned to the question of the appropriate use of taxation statistics. In that context, it discussed various expert opinions. At pp 27 to 28 (pars 123 to 125), the ERA set out its conclusions in relation to utilising taxation statistics to derive an estimate of gamma in the following terms (omitting footnotes):

The Authority notes that the AER recently set out the evidence for the estimate based on tax statistics in a further review, drawing on, and further, considering views from the experts:

• the evidence assembled by Hathaway, NERA, Gray, and the AER points to a range of around 0.4 to 0.6 for the utilisation rate;

• based on the observation that the post-2004 taxation statistics data is more reliable than data available prior to that date:

In this current work I only consider franking credit flows for the period for 2004 onwards and can provide a much more detailed insight into the flows and utilisations of franking credits for that period

I would caution anyone, including the AER, against relying on those parts of my earlier reports which focussed on ATO statistics [up to 2004]. The data was then not as clear as it is today. I had to rely on separate analyses of ATO tax data and the ATO financial data. As I am now aware with the new data, there is an extremely large discrepancy between these two subsets of data. The missing link was the data on the flows of credits between companies which is now visible after the changes of 1 July 2002. I would recommend that the AER do not rely on that earlier report.

• informed by two estimates of the distribution rate for the period 2004 to 2011, being 0.43 and 0.61;

• more recently updating the 0.44 estimate to 0.48 using ATO FAB data to the 2014 tax year, with;

* the (updated) 0.48 estimate of the utilisation rate (using ATO FAB data) corresponds to estimates of the distribution rate of around 0.7;
* the 0.61 estimate of the utilisation rate (using ATO dividend data) corresponds to estimates of the distribution rate of around 0.5; and

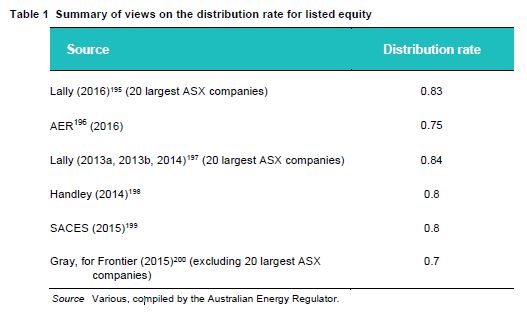
• with the updated 0.48 estimate based on post-2004 data being preferred as reasonable as it is consistent with an estimate of the distribution rate for ‘all equity’ of 0.7.

The Authority has reviewed this evidence and considers that the Hathaway study provides the best estimate of the utilisation rate derived from taxation statistics. The Authority has also been guided by Hathaway’s finding that the ATO FAB data is more reliable than the ATO dividend data. On that basis, the Authority considers that a point estimate of 0.48 (as updated by the AER) should be applied, paired with a distribution rate based on all equity of 0.7.

However, the Authority remains mindful of Hathaway’s concerns with the ATO data, and the pointed caution about relying on it for estimating utilisation rates:

Unfortunately, there are too many unreconciled problems with the ATO data for reliable estimates to be made about the utilisation of franking credits. The utilisation rate of franking credits is based on dividend data (from the tax office) and I have demonstrated that this data is questionable.

1. At pp 44 to 49 (pars 196 to 225) of Appendix 5, the ERA set out its conclusions in relation to gamma in the following terms:



Having considered Gray’s arguments, the estimates made by Handley, Lally, and other experts, the AER’s recent determination, and the reliability of the data underpinning these various estimates, the Authority considers that a reasonable estimate of the distribution rate for listed equity is a rounded estimate of 0.8.

**Estimate of gamma**

The Authority considers that three different approaches to estimating gamma are appropriate, based on the following methods for estimating the utilisation rate:

• the equity share approach;

• the taxation statistics approach; and

• the DDO method.

The Authority considers that, consistent with this conclusion, the ‘most important approaches to estimation in order of importance to be the equity ownership approach, the taxation statistics approach, and DDO studies (being the most relevant within the class of implied market value studies)’ [J.C. Handley, *Advice on the Value of Imputation Credits,* 29 September 2014, p. 31]. However, the Authority agrees that ‘all approaches are subject to substantial uncertainty and so the estimate of theta is imprecise’[J.C. Handley, *Advice on the Value of Imputation Credits,* 29 September 2014, p. 32].

In considering the weight to be given to each approach, the Authority notes the AER’s conclusion that [Australian Energy Regulator, *AusNet Services distribution determination final decision 2016-20: Attachment 4 – Value of imputation credits*, 26 May 2016, p. 4-17]:

…estimating the value of imputation credits consistent with the Officer framework will best promote the National Electricity Objective/National Gas Objective (NEO/NGO) and other requirements of the [National Electricity Rules/National Gas Rules].

In identifying a methodology consistent with the Officer framework, the AER noted that the equity share ownership, and tax statistics approaches are reasonably consistent with the Officer framework. However, DDO studies are affected by factors such as personal taxation and other costs. As such, they are inconsistent with the Officer framework unless adjusted [Australian Energy Regulator, *AusNet Services distribution determination final decision 2016-20: Attachment 4 – Value of imputation credits,* 26 May 2016, p. 4-11].

The Authority agrees with Handley that the equity ownership and tax statistics on utilisation of imputation credits provide key evidence for the utilisation rate. The Authority has also considered DDO estimates.

In what follows, these estimates are considered.

**The equity share ownership estimate**

The Authority’s estimate of the utilisation rate based on the equity share ownership approach is either 0.59 (all equity – both listed and unlisted) or 0.47 (listed equity).

Combining the utilisation rate estimate for all equity, of 0.59, with the estimate of the distribution rate of all equity, of 0.7, gives an estimate of gamma of 0.41.

Combining the utilisation rate estimate for listed equity, of 0.47, with the estimate of the distribution rate for listed equity, of 0.8, gives an estimate of gamma of 0.38.

**The taxation statistics estimate of the redemption rate**

The Authority’s estimate of the utilisation rate based on taxation statistics approach (using ATO FAB data) is 0.48. Combining that estimate with the relevant estimate of the distribution rate of 0.7 (all equity) gives a point estimate of gamma of 0.3, at one significant figure.

**The dividend drop off estimate**

As discussed above, the Authority’s estimate of the utilisation rate from DDO studies is fairly broad, at 0.35 to 0.69, reflecting concerns with the robustness of the method.

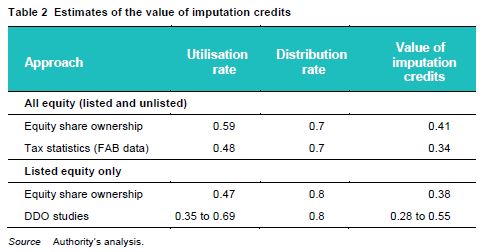
That range for the utilisation rate combines with an estimate of the distribution rate for listed equity of 0.8 [The Authority considers that it was in error in the Guidelines and Draft Decision in applying an estimate of the distribution rate that was based on all equity]. The resulting range for gamma is 0.28 to 0.55, rounded to one significant figure.

**Estimate of gamma**

The Authority bases its estimate of gamma on the following, with estimates given most weight ranked first:

* the equity share ownership approach gives an estimate of gamma of 0.41 based on all equity, and 0.38 based on listed equity with a distribution rate of 0.8;
* the taxation statistics approach, using ATO FAB data, gives an estimate of gamma of 0.34; and
* the DDO approach gives a range for the estimate of gamma of 0.28 to 0.55 assuming a distribution rate of 0.8.

The resulting range for the Authority’s estimate of gamma is 0.28 to 0.55, as shown in Table 2.



Consistent with its approach set out in the Draft Decision, the Authority places most reliance on the equity share ownership approach. It suggests a point estimate for gamma of 0.4.

Taxation statistics, using the ATO FAB data, suggest that the estimate of gamma could be lower, at 0.34. However, the Authority does not place much weight on the estimate, or on its ability to inform a point estimate of the utilisation rate, given concerns about the robustness of the taxation data used for estimating the utilisation rate.

Similarly, the DDO estimate suggests that the estimate of gamma could be higher or lower than 0.4, although the mid-point of the estimate range is reasonably consistent with an estimate of 0.4. The Authority gives only limited weight to the estimated range, and to the point estimate, given its concerns with regard to the sensitivity of the estimates to the dividend sample, parametric form of the regression equation and regression technique used.

The Authority notes that DBP has suggested that the foregoing estimates do not develop an appropriate range [DBP, *Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Regulatory Period Response to ERA Issues Paper Submission 26*, 2 June 2015, p. 13]:

DBP does not believe that the ERA ought to continue to deviate from its own Guidelines by using the AER’s approach to estimating gamma. However, if it does deviate from the Guidelines in respect of gamma, it should at least do so properly, and with relevant information. Instead of ranges based on somewhat irrelevant and misleading historical data, what one actually has using the AER’s preferred approach is three estimates of gamma:

(a) One based on the share of ownership of all equity would give a gamma of 0.42 (0.6 for theta and 0.7 for the distribution rate).

(b) One based on the share of ownership of listed equity would give a gamma of 0.315 (0.45 for theta and 0.7 for the distribution rate; based on NERA’s work).

(c) One based on taxation statistics would give a gamma of 0.3 (0.43 for theta, according to the AER, and 0.7 for the distribution rate).

The relevant range formed by these three estimates is not 0.3 to 0.5, but 0.3 to 0.42; the larger range is only created by using ranges for theta which give equal weight to single instances of outliers far from the mean and multiple instances of data-points close to the mean, effectively giving each outlier a much greater weight compared to each point close to the mean [[DBP footnote] We note that giving weight to outliers at the expense of values close to the mean (which we submit is wrong in any event) would run counter to the ERA’s own approach of using so-called Robust regression in estimates of beta to limit the influence of outliers. It would be curious if the ERA adopted an approach which minimised the influence of outliers in respect of beta, and maximised the influence of outliers in respect of gamma]. Moreover, two of these estimates, including one which the AER’s own advisor and the ERA have previously suggested forms an upper bound for gamma, [[DBP footnote] We note that the AER’s adviser, Handley, has more recently reversed himself on this point, but his reasoning is not particularly convincing; see SFG (2015, p22-3) for a more detailed treatment.] are towards the lower end of the range and are in fact almost the same. This would suggest that a prudent, objective regulator, having regard to the information which the AER suggests it believes is most relevant, would form an estimate of gamma in the lower half of the range between 0.3 and 0.42, not at the upper end of that range as the AER has done.

However, in relation to the following points raised by DBP:

* First, as noted above, the Authority does not accept DBP’s view on the distribution rate for listed equity. That leaves the Authority’s estimate based on the equity share ownership approach at 0.4.
* Second, DBP does not dispute that the estimate based on taxation statistics is proximate to 0.34.
* Third, the use of DDO estimates – which is preferred by DBP but which is omitted from the above list – is 0.28 to 0.55.
* On that basis, the overall range is 0.28 to 0.55. Furthermore, the Authority considers that it is prudent and objective – in giving weight to those estimates – to adopt an estimate of 0.4.

DBP also quotes Officer to support its view that only implied market value studies are capable of estimating theta [DBP, Proposed Revisions DBNGP Access Arrangement 2016 – 2020 Regulatory Period Response to ERA Issues Paper Submission 26, 2 June 2015, p. 13.]. The Authority does not dispute that implied market value studies, however imperfect, provide relevant information as to the value of theta. Accordingly, the Authority has taken DDO studies into account. However, as articulated above, the Authority does not consider that to be the only method available.

In summary, based on the foregoing, the Authority considers that the evidence supports a prudent point estimate of gamma of 0.4. Therefore, the Authority does not accept the value of 0.25 put forward by DBP.

The Authority considers that the resulting estimate of 0.4 is consistent with its approach used elsewhere in this Final Decision, and in particular the use of the value of imputation credits within the building block framework. The estimate is supported by a range of evidence, including relevant academic literature, and also the views of academic experts:

* the estimate is within the range set out by Handley for his preferred estimate of gamma, of 0.4 to 0.5 [J. Handley, Advice on the value of imputation credits, 29 September 2014, p. 3.]; and
* the estimate is primarily based on the equity share ownership approach, which is Lally’s second preference as a method for estimating gamma (after a strict Officer CAPM approach, which gives a value of 0.7 based on a utilisation rate of 1) [M. Lally, The Estimation of Gamma, Report for the AER, 23 November 2013, p. 5.].

**Consistency with the National Gas Law and National Gas Rules**

Consistent with the expert advice considered for this Final Decision, the Authority has determined that the Officer framework rightly provides the basis for the rate of return framework in the NGL and the NGR. It follows that estimating the value of imputation credits consistent with the Officer framework will best promote the NGO and the other requirements of the NGR.

To this end, the Authority has considered the differing expert opinions on the proper interpretation of the gamma parameter in the Officer framework. The Authority considered Handley's expert advice for the AER on the Officer framework at length in the Draft Decision. An important aspect of that advice is that the framework is on a ‘before-personal-tax and before-personal-costs' basis.

By determining a value of imputation credits in a manner consistent with the Officer framework, the Authority considers that this Final Decision is made in a manner that will or is likely to contribute to the achievement of the NGO. Further, when exercising its discretion in making the relevant parts of a decision, the Authority has accounted for the revenue and pricing principles (**RPP**). The RPP provide, amongst other things, that:

* a service provider should be provided with a reasonable opportunity to recover at least the efficient costs the operator incurs providing regulated services and complying with regulatory obligations;
* a service provider should be provided with effective incentives in order to promote economic efficiency with respect to the regulated services it provides; and
* a price, charge or tariff for the provision of a regulated service should allow for a return commensurate with the regulatory and commercial risks involved in providing the regulated service.

Therefore, the gamma determined for this Final Decision will promote the achievement of the NGO (via its application in the estimated cost of corporate income tax building block) if it takes into account the RPP, being:

* not too low, in that it contributes to providing a reasonable opportunity to recover at least efficient corporate tax costs; and
* not too high, in that it contributes to a return that is not excessive and is commensurate with the relevant risks.

Finding the right balance in this task has been served by having regard to the merits of the full range of relevant evidence. The Authority has considered, and relied upon, the range of relevant evidence set out in this Appendix. The Authority is satisfied that the gamma balances first, the opportunity for service providers to recover at least efficient costs, and second, the relevant risks.

The Authority therefore considers that its estimate is fit for purpose, notwithstanding concerns with the data and the resulting robustness of the estimates. Importantly, the use of a range of approaches for estimating gamma assists in overcoming limitations associated with any particular study. This helps to ensure that the estimation method is consistent with accepted economic and financial principles, informed by sound empirical analysis. For these reasons, the Authority considers that its estimates meet the requirements of the NGL and the NGR.

In contrast, the Authority notes that DBP’s proposed estimate is based on a single study, of questionable robustness. The Authority considers that DBP’s proposed estimate does not provide the best estimate for the purposes of the NGL and the NGR, and therefore has determined to amend DBP’s value of gamma for use in the building block model.

We have reproduced the footnotes to the above extracts in order to identify with particularity the sources in the expert materials relied upon by the ERA.

## The Full Court’s Decision in AER v ACT (No 2)

1. The Full Court considered the issues relating to gamma at 145–173 [618] to [784].
2. Ground 17 of the AER’s challenge to the Tribunal’s decision in relation to gamma was that the Tribunal erred in its construction of the expression *“the value of imputation credits”* in the NER, which error was based upon its rejection of the estimation methodologies preferred by the AER. The relevant rule in the NER was the same as r 87A.
3. In the course of considering the various grounds relating to grounds of review relating to gamma, at 167 [742], the Full Court said:

The substantial point of difference between the Tribunal and the AER was as to the meaning of “value” in that statutory context: the *NER*. It was not merely as to the weighing of evidence, or preference on the part of the Tribunal for one type of evidence over another. The measures which were used flowed from the interpretation of the statutory expression “the value of imputation credits”. For example, the respondents contended, and the Tribunal accepted, that the equity ownership and tax statistics measures were not appropriate because those measures were not measuring the correct thing but a subset of it, and therefore were not in accordance with the correct interpretation of the *NER*. It would follow that there was error, reviewable by the Tribunal, in the AER giving primary weight to such measures. Put differently, the appropriate method, sources of information and/or weight to be attributed to each data source when determining “the value of imputation credits” was a derivative of the interpretation of that term.

1. At 168 [746], the Full Court said:

Ground 17 was to the effect that the Tribunal misconstrued and misunderstood the meaning of the expression “value of imputation credits” in r 6.5.3 of the *NER* and the requirements of the *NER*, including the revenue and pricing principles set out in s 7A of the *NEL*.

1. At 168 [748], the Full Court said that the correct interpretation of the expression *“value of imputation credits”* was the key dispute for the Court to resolve. The Tribunal had taken the view that it was necessary to consider both the eligibility of investors to redeem imputation credits and the extent to which investors determined the worth of imputation credits to them.
2. At 168 to 169 [750] to [757], the Full Court said:

The Tribunal expressed its conclusion on the question of construction at [1081], stating, in effect, that in light of its discussion of the competing views and the implications of those views, it did not accept the AER’s approach that imputation credits were valued at their claimable amount or face value. The Tribunal said the value was not what can be claimed or utilised, but what is claimed or utilised as demonstrated by the behaviour of the shareholder recipients of the imputation credits.

In our opinion, the Tribunal erred in law in construing r 6.5.3 of the *NER* and r 87A of the *NGR* as invalidating the AER’s approach to estimating the estimated cost of corporate income tax of the respondents where gamma is the value of imputation credits. In our opinion, the expression “the value of imputation credits” is to be construed as a whole, in its context and having regard to the subject matter of the exercise. It would be an error to limit attention to the word “value” and give it a meaning in isolation. In essence, we think this is what the Tribunal did. The Tribunal thereby misunderstood the function of imputation credits under the Rules in relation to the return on capital and the tax building block.

We accept the AER’s submission that the context is the determination of a regulated return using a post-tax revenue model based on a nominal vanilla WACC. We accept the AER’s submission that the Rules require consistency in the way the relevant building blocks interact, that is, a post-company tax and pre-personal tax and personal costs basis. We also note that the nature of gamma is an estimate to be used in a model.

The present context relates to a statutory model rather than the value of something which exists. In our opinion the Tribunal was distracted by the apparent simplicity of the concept of market studies and data into mistaking what was to be estimated as real in a market rather than as estimates within a model.

This is what led the Tribunal into error at [1081]-[1082] in concluding that the value of gamma is (only) what is claimed or utilised as demonstrated by the behaviour of the shareholder recipients of the imputation credits.

While we reject the AER’s submission that the Tribunal exceeded the limits of its jurisdiction by failing to make a clear finding that a s 71C ground of review was made out, since we think it is clear that the Tribunal proceeded on the basis that the relevant ground was error of construction leading to errors of discretion, we accept the AER’s submission the Tribunal’s approach to gamma was underpinned by a misunderstanding on its part about how return to investors was conceptualised in a WACC framework. In our opinion the Tribunal assumed that other parameters in the WACC calculations were market values that already incorporated investors’ tax positions and transaction costs but that misconstrued the “post-tax” framework. The rules required gamma to be determined consistently with return on equity.

In our opinion, it was not therefore a reviewable error for the AER to prefer one theoretical approach to considering the determination of gamma over another. This means that it is not an error of construction for the AER to focus on utilisation rather than on implied market value. This is not to say that the AER’s approach to gamma is immune from (limited) merits review. For example, if it erred in principle and thereby omitted to take into account a mandatory relevant consideration or arrived at a conclusion which meant that its decision was unreasonable within the meaning of s 71C(1)(d) of the NEL, the Tribunal may intervene. It may also be that the AER would err within s 71C(1)(c) or (d) in acting on economic learning outside the mainstream of that discipline, at least if it did so without explaining the basis for so doing.

Ground 17 is made out.

1. At 169 to 170 [759] to [767], the Full Court considered Ground 18 of the grounds of review. The Full Court said:

Ground 18 was, in summary, that the Tribunal failed to consider or address significant aspects of the reasons for the AER’s decision in relation to the valuation of imputation credits. The ground referred to the detailed consideration which the AER had given to why the tax statistics published by the ATO could be used to give a point estimate for gamma, rather than merely providing an upper bound or check. The ground also referred to the AER considering in detail the appropriate use of market value studies generally and the SFG study in particular and providing reasons for its conclusions as to the appropriate use to make of such studies.

These matters were said to involve the Tribunal not having jurisdiction to make its decision, that its decision was not authorised by the *NEL*, that the Tribunal’s decision involved an error of law and that the Tribunal’s decision was otherwise contrary to law: see paragraphs (c), (d), (f) and (j) of s 5(1) of the *ADJR Act.*

In substance, as we understood it, the complaint here was that the Tribunal had exceeded the jurisdiction available to it on the limited merits review established by s 71C of the *NEL*. In our opinion it would not be a legal error on the part of the Tribunal to fail to deal with the entirety of the reasons given by the AER for its use of tax statistics where, for example, the Tribunal found, on limited merits review, that an error on the part of the AER displaced those reasons. Similarly, in our opinion, it would not be a legal error on the part of the Tribunal to fail to deal with the entirety of the reasons given by the AER on the appropriate use of market value studies where the Tribunal found, on limited merits review, that an error on the part of the AER displaced those reasons.

In our opinion, this is what the Tribunal did. We again refer to *Applicant WAEE*: see [278] above.

In relation to tax statistics, the Tribunal concluded that as a matter of principle tax statistics can only provide an upper bound on the estimate of theta. It stated at [1095] that the AER’s tax statistics approach made no attempt to assess the value of imputation credits to shareholders and ignored the likely existence of factors which reduced the value of imputation credits across all eligible shareholders below the “face” value assumed by the AER. The Tribunal considered that approach to be inconsistent with a proper interpretation of the Officer Framework underlying r 6.5.3 of the *NEL*. The Tribunal said, in the same paragraph, it was the reason that the theta estimates produced by the tax statistics could be no better than upper bounds on the market value of imputation credits.

We see no separate legal error on the part of the Tribunal in so concluding. In our opinion, it stands or falls with the construction issue raised by ground 17. The Tribunal was not required, in light of that approach, to give further consideration to the AER’s reasons for using the tax statistics as it did. The Tribunal anchored its conclusion in an available ground of limited merits review within s 71C.

In relation to market value studies, the Tribunal explained at [1049] that market studies of the value of imputation credits was the third source of estimates of the utilisation rate. It referred, at [1092], to the value of theta produced not only by taxation statistics, but also by market value studies to some extent, was evidence that Australian investors did not value imputation credits at their face value, including because they may be unable to use them. Then, at [1095], the Tribunal said that the AER’s approach was inconsistent with a proper interpretation of the Officer Framework underlying r 6.5.3 of the *NER*. It followed, the Tribunal said at [1096], that the assessment of theta must rely on market studies. It said that of the various methodologies for estimating gamma employed by the AER, market value studies were best placed to capture the considerations that investors made in determining the worth of imputation credits to them. At [1097], the Tribunal said that it considered the use of market studies to estimate the value of imputation credits was consistent with the method used to calculate other parameters of the costs of debt and equity from market data.

We see no separate legal error on the part of the Tribunal in so concluding. The Tribunal was not required, in light of that approach, to give further consideration to the AER’s reasons for its conclusions as to the appropriate use to make of market value studies. The Tribunal anchored its conclusion in an available ground of limited merits review within s 71C.

In our opinion ground 18 is not made out as a separate source of legal error on the part of the Tribunal.

1. The Full Court introduced these observations by recognising that they were *obiter dicta*. They are, however, persuasive.

## Consideration

1. As we have already mentioned at [110] above, the parties to the present matter were invited to make written submissions in relation to the impact of the Full Court’s decision in *AER v ACT (No 2)* and did so pursuant to that invitation.
2. The owners accepted in its submissions that market-value estimates of gamma ought not to form *“the sole basis”* for determining theta. Nonetheless, they persisted with their challenge to the ERA’s final decision.
3. The owners went on to submit that the ERA’s model used in the present case did not ignore or fail to incorporate personal transaction costs whereas the AER’s position in *AER v ACT (No 2)* reflected in *PIAC and Ausgrid* is that modelling of the relevant costs is not required because they are already reflected in asset prices. For this reason, the owners submitted that the decision of the Full Court does not determine the outcome of the present case.
4. The owners then submitted that the ERA in the present case had adopted an unorthodox approach by not estimating a complex weighted average but rather a simple average and thus acted on economic learning outside the mainstream of the relevant disciplines. This argument is new and has never been raised before either with the ERA or before this Tribunal.
5. The owners endeavoured to persuade the Tribunal that resort to tax statistics was still available for the purposes of assessing the value of imputation credits under r 87A. The ultimate submission in this regard was that consideration of tax statistics was permissible and might lead the Tribunal to determine a different value for gamma, even accepting the ERA’s theoretical framework, and focussing solely on the issue of tax statistics as an upper bound for gamma.
6. The owners accepted that the Full Court’s decision had implications for those aspects of the owners’ application relying on the plain meaning of the term *“the value of imputation credits”*. However, they went on to submit that the decision of the Full Court did not otherwise determine the Tribunal’s assessment of the gamma topic. They went on to submit that the Tribunal ought to consider three topics. These were adumbrated at pars 29 to 31 of the owners’ Written Submissions dated 12 July 2017 in the following terms:

*First*, whether the ERA erred in failing to indicate where and how it has considered relevant transaction costs associated with imputation credits, if not explicitly in the formulation of a gamma estimate.

*Secondly,* whether the ERA’s use of a simple rather than a complex weighted average, as required by the theoretical framework, represents “economic learning outside the mainstream of that discipline” and, if so, whether that has been sufficiently well-explained to avoid error.

*Thirdly*, whether the Tribunal’s finding in *PIAC and Ausgrid*, that tax statistics form an upper bound even within the theoretical framework used by the ERA, which finding has not been disturbed by the Full Court, has implications for the gamma value (even if the ERA’s principal point as to value is accepted). In particular, based on the material before this Tribunal, including issues as to the reliable use of FAB data, is 0.4 a feasible value for gamma, or should it be reduced to 0.34?

1. The ERA submitted that the Full Court’s decision in *AER v ACT (No 2)* disposes of the primary ground of review relied upon by the owners in its Review Application. That ground was that the ERA erred in construing and applying the phrase *“the value of imputation credits”* in r 87A.
2. As submitted by the ERA, the Full Court relevantly found that:
3. The method, sources of information and/or weight to be attributed to each data source when determining *“the value of imputation credits”* is a derivative of the interpretation of that term (at [742]).
4. The expression *“the value of imputation credits”* is to be construed as a whole, in its statutory context and having regard to the subject matter of the exercise. It would be an error to limit attention to the word *“value”* and give it a meaning in isolation. The relevant context is the function of the imputation credits under the NER (and, by analogy, under the NGR) in relation to the return on capital and the tax building block and, in particular, the determination of a regulated return using a post-tax revenue model based on a nominal vanilla WACC. The NER (and NGR) require consistency in the way the relevant building blocks interact (at [744], [751] and [752]).
5. It is a misconstruction of the expression *“the value of imputation credits”* to interpret *“value”* as a *“market value”* derived from market studies rather than a value within a post-tax revenue model in which the integers are determined on a consistent basis (at [753] and [755]).
6. It was not an error of construction for the AER (and, by analogy, the ERA in this case) to prefer one theoretical approach to considering the determination of gamma over another. Specifically, the AER did not err by focussing on the utilisation of imputation credits rather than on an implied market value (at [756]).
7. The ERA submitted that the effect of the decision of the Full Court is that the ERA’s interpretation of the phrase *“value of imputation credits”* was correct and that the interpretation of that phrase given by the Tribunal in *PIAC and Ausgrid* was incorrect. That conclusion removed the primary argument being advanced before us, namely, that the matter had been correctly decided by the Tribunal in *PIAC and Ausgrid* and that this Tribunal should follow that decision.
8. The ERA criticised the submissions made by the owners in their Written Submissions dated 12 July 2017 to the effect that the ERA’s model differed from the modelling framework adopted by the AER. Here, the ERA submitted that the owners had put the opposite position in their Submissions-in-Chief. The ERA argued that, in the present case, the owners should not be permitted to depart from that position. In any event, there was sufficient material before us for us to be satisfied that the substance of the model deployed by the AER in *PIAC and Ausgrid* is the same as that deployed by the ERA in the present case.
9. In its Written Submissions dated 2 August 2017, the ERA submitted that the owners’ argument that the ERA’s approach to WACC was *“unorthodox”* and outside the *“mainstream of the relevant discipline”* is a new argument not previously been raised. We agree. No leave has been sought to raise this argument and we do not propose to entertain it.
10. In any event, as the ERA submitted, this new submission made by the owners is inconsistent with submissions made to this Tribunal at the hearing in the sense that, when they accepted (as they did) that the approach of the AER in *PIAC and Ausgrid* was the same as the approach of ERA in the present case, the owners were also accepting that that approach was within the mainstream of economics.
11. The ERA submitted that, in any event, Dr Lally had expressly said that he concurred with the AER’s approach of simplifying the averaging over the utilisation rates of all investors because it is difficult to estimate differences across investors in their level of risk aversion (because individual investors’ levels of risk aversion are not observable).
12. The ERA submitted in its Written Submissions of 2 August 2017 that the Full Court’s decision also disposed of the owners’ challenge to the ERA’s use of tax statistics. We agree with that submission.
13. In any event, the ERA repeated its submissions made at the hearing before us to the effect that the uncontradicted evidence in the economic literature considered by the ERA was that there was some unexplained discrepancy in the tax statistics date. This is revealed in Professor Hathaway’s paper *Imputation Credit Redemption ATO Data* *1988–2011, Where have all the Credits Gone?*, September 2013. According to the ERA, Professor Hathaway’s advice was unequivocal. He said:

Until [reconciliation of the discrepancy] has occurred or it can be explained for me how to account for those credits, I urge all caution in using ATO statistics for any estimates of parameters concerned with franking credits [emphasis added].

1. As the Full Court found in *AER v ACT (No 2)*, the Tribunal’s use in *PIAC and Ausgrid* of the point estimate which the AER had derived from tax statistics in that case (0.43), as an upper bound, reflected an incorrect construction of the phrase *“value of imputation credits”*.
2. In *SAPN*, the Full Court affirmed its earlier decision in *AER v ACT (No 2)*.
3. In *SAPN*, at [52]-[57], the Full Court found that:
4. The Tribunal in *SA Power Networks* did not make any error of law in determining that the AER was entitled to use its regulatory judgment in determining what approach should be used to estimate the cost of corporate income tax for the purposes of r 6.5.3 of the NER;
5. The Tribunal in *SA Power Networks* did not misunderstand its function by concluding that the methodology to be used for determining an estimate of the cost of corporate income tax for the purposes of r 6.5.3. of the NER was a matter of judgment for the AER;
6. No reviewable error arises from the relevant Regulator preferring one theoretical approach to considering the determination of gamma over another;
7. It is not an error of construction for the Regulator to focus on utilisation rather than on implied market value;
8. The limited merits review function reposed in the Tribunal and the field of choice available to the Regulator mean that reviewable error could not be established by an argument that the information before the Tribunal in *SA Power Networks* dictated a different conclusion for the proper legal content for gamma than the information that was before the Tribunal and the Court in *PIAC and Ausgrid* and *AER v ACT (No 2)*; and
9. It is not a function of the Tribunal, when performing a limited merits review of a regulator’s decision, to determine the proper legal content for gamma in light of factual findings about the Regulator’s approach to the PTRM in the particular case.
10. As submitted on behalf of the ERA, the matters set out at [346] above fatally undermine the contentions at pars 6 to 9 of the owners’ Supplementary Submissions that the Tribunal in this case ought to find reviewable error in the ERA’s approach to determining estimates of gamma on the ground that the information before this Tribunal is different from the information which was before the Tribunal in *PIAC and Ausgrid* or, for that matter, before the Tribunal in *SA Power Networks*.
11. The lengthy submissions made by the owners at the hearing before us depended entirely upon the reasoning adopted by the Tribunal in *PIAC and Ausgrid* which has been rejected by the Full Court in *AER v ACT (No 2)* and in *SAPN.*  In the circumstances, we do not think that it is necessary for us to address those submissions in detail in these Reasons. Further, detailed and lengthy submissions along the same lines as those advanced by the owners here were rejected by the Tribunal in *Application by ActewAGL Distribution* [2017] ACompT 2 at [240]-[260], [278]-[353] *esp* at [299]-[353].
12. The reasoning of the Full Court in the two decisions to which we have referred is fatal to the owners’ entire case in support of Ground 2 in their Review Application. For the above reasons, we reject Ground 2.

# The Leave Application

1. Under s 245(1) of the NGL (WA), the leave of the Tribunal is required for a review of a reviewable regulatory decision. Sections 248–251 set out various rules in relation to any application for leave to apply for a review of such a decision.
2. Neither the ERA nor any other person opposed the application for leave. In light of that circumstance, we propose to keep our reasons for granting leave brief.

## Timing of the Application

1. The Application for Leave to Review was lodged with the Tribunal on 21 July 2016 within the 15 business days specified in s 247 of the NGL (WA).

## Serious issue to be heard and determined (s 248(a))

1. At [39]–[42] in *Re Application by ElectraNet Pty Limited* [2008] ACompT 1, the Tribunal held that the concept of “*a serious issue to be heard and determined*” should be analysed and applied by reference to the learning and principles applicable to the grant of interlocutory injunctions. In that case, the Tribunal also held that it is a concept found in s 237(2)(d) of the *Corporations Act 2001* (Cth) which concerns the power of the Court to grant leave to a party to bring a statutory derivative action on behalf of a company. The relevant question is whether an applicant has established that there is a serious issue to be heard and determined given the nature of the rights asserted by the applicant and “*the practical consequences likely to flow*” from the grant of leave. In particular, the Tribunal has, on a number of occasions, expressed the view that the threshold merely requires the applicant to “*show that there is a sufficient prospect of success to justify in the circumstances it being given the opportunity*” to have the decision reviewed (see *Application by Envestra Limited* [2011] ACompT 12 at [21]).
2. In February 2017, when we granted leave to the owners to apply for a review of the ERA’s decision, the Tribunal’s decisions in *PIAC and Ausgrid*, *ATCO Gas* and *SA Power Networks* had already been handed down. In addition, at that time, other decisions relating to the NEL were under consideration. In each of these Tribunal decisions, the question of gamma was considered. In *PIAC and Ausgrid* the Tribunal determined that the AER was in error in deciding a value for gamma of 0.40. In *ATCO Gas*, the ERA itself accepted that it was in error in applying a gamma of 0.40. By way of contrast, the Tribunal in *SA Power Networks* considered that the AER had not erred, or been unreasonable, in adopting a value of 0.40 for gamma. The issue of the correct figure for gamma was under consideration in other matters before the Tribunal which, as at February 2017, had not been determined.
3. In addition, in *PIAC and Ausgrid*, the question of the suitability of the SL-CAPM was at issue. Although the specific issues raised in that matter in respect of return on equity were slightly different from those raised in the present matter, nonetheless the broad question of how the Tribunal should go about determining the relevant integers in respect of return on equity was in play in that matter.
4. In light of the matters to which we have referred at [350]-[355], we formed the view that the owners had met the threshold test specified in s 248(a) of the NGL (WA).

## Materially preferable designated NGO decision (s 248(b))

1. The meaning of the expression “*materially preferable designated NGO decision”* is referred at [120] above. These matters are more particularly canvassed in ss 23, 244 and 259(4a)(c) of the NGL (WA). In the present case, given the amounts at stake, it seems to us that, were we to grant the relief sought by the owners, it would result in such a decision.

## Revenue threshold

1. Section 249(2) of the NGL (WA) provides, in effect, that the Tribunal must not grant leave unless the amount that is specified in or derived from the decision exceeds the lessor of $5 million or 2% of the average annual regulated revenue of the covered pipelines service provider.
2. In the affidavit materials supporting the application for leave and the review application, the owners brought forward evidence which more than satisfied this requirement. The ERA did not take issue with that material. That evidence disclosed that the difference between the owners’ claims and the value of the ERA decision in respect of the two grounds in question were:
3. $181.48 million as to the return on equity grounds
4. $16.74 million as to the gamma ground.
5. There was no suggestion that s 251 of the NGL (WA), which allows the Tribunal to refuse to grant leave if the owners had conducted themselves inappropriately during the regulatory process in the respects adumbrated in that section, was engaged in the present case.
6. For all of the above reasons, we granted leave to the owners to apply for a review of the ERA’s final decision. That leave was granted on 13 February 2017.

# Conclusion

1. For all of the above reasons, the owners’ Review Application must be dismissed and the ERA’s determination confirmed.

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| I certify that the preceding three hundred and sixty-two (362) numbered paragraphs are a true copy of the Reasons for Determination herein of the Honourable Justice Foster, Mr Robin Davey and Mr Rodney Shogren. |

Associate:

Dated: 16 July 2018