DRAFT DECISION

TasNetworks Distribution Determination
2019 to 2024

Attachment 3
Rate of return

September 2018

Inquiries about this publication should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne Vic 3001

Tel: 1300 585165

Email: AERInquiry@aer.gov.au

AER reference: 60152

Note

This attachment forms part of the AER's draft decision on TasNetworks' 2019–24 distribution determination. It should be read with all other parts of the draft decision.

The draft decision includes the following attachments:

Overview

Attachment 1 – Annual revenue requirement

Attachment 2 – Regulatory asset base

Attachment 3 – Rate of return

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure

Attachment 6 – Operating expenditure

Attachment 7 – Corporate income tax

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Contents

Shortened forms

Shortened form	Extended form
ACG	Allen Consulting Group
AER	Australian Energy Regulator
bppa	basis points per annum
CCP10	Consumer Challenge Panel, sub-panel 10
COAG EC	Council of Australian Governments – Energy Council
DRP	debt risk premium
ECA	Energy Consumers Australia
ERP	equity risk premium
MRP	market risk premium
NEL	national electricity law
NER	national electricity rules
NSP	network service provider
opex	operating expenditure
PIAC	Public Interest Advocacy Centre
PTRM	post-tax revenue model
PwC	PricewaterhouseCoopers
RAB	regulatory asset base
RBA	Reserve Bank of Australia
SL-CAPM	Sharpe-Lintner capital asset pricing model
WACC	weighted average cost of capital
ACG	Allen Consulting Group
AER	Australian Energy Regulator
bppa	basis points per annum
CCP13	Consumer Challenge Panel, sub-panel 13

3 Rate of return

The allowed rate of return provides a network service provider a return on capital that a benchmark efficient entity would require to finance (through debt and equity) investment in its network.[1] The return on capital building block is calculated as a product of the rate of return and the value of the regulatory asset base (RAB). The rate of return is discussed in this attachment.[2]

3.1 Draft decision

TasNetworks, along with other businesses who filed proposals for the 2019–24,[3] proposed that we apply the 2013 rate of return guidelines (2013 Guidelines) with certain departures for its standard control services. This is consistent with transitional provisions set out in the NER. The COAG Energy Council has since determined however that the 2018 rate of return guidelines (2018 Guidelines) will be binding and will apply to the businesses currently under review.

The legislation to create a binding guideline has not yet been passed and as such we are still operating under the current rules of a 2013 non-binding Guidelines. As such we have considered TasNetworks' proposal under this framework, but for the reasons set out in the explanatory statement to the draft 2018 Guidelines have determined to apply the draft 2018 Guidelines. This is, in a sense, a departure from the 2013 Guidelines itself.

We have considered the information TasNetworks provided in support of its proposal in arriving at our draft 2018 Guidelines.

Our draft decision is to reject TasNetworks' rate of return proposal to apply the 2013 Guidelines.[4] We have decided to depart from the 2013 Guidelines and apply the draft 2018 Guidelines to TasNetworks' regulated energy network services for the 2019–24 regulatory period for the reasons set out in the AER's 2018 draft rate of return guidelines (draft 2018 Guidelines) and this draft decision.

This determines an allowed rate of return of 5.51 per cent (nominal vanilla). The allowed rate of return is calculated as the weighted average of the allowed return on equity and allowed return on debt, with the benchmark gearing ratio providing the weightings (0.6 for debt and 0.4 for equity).

This allowed rate of return will apply to TasNetworks for the first year of the 2019–24 regulatory control period. A different rate of return will apply to TasNetworks for the remaining regulatory years of the period. This is because we will update the return on

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[1]   The term network service provider relates to service providers that provide gas and electricity transmission and distribution services.

[2]   We released our draft decision for the 2018 review of the rate of return guideline in July 2018.

[3]   TasNetworks Transmission, Evoenergy, Power and Water Corporation, Ausgrid, Essential Energy and Endeavour Energy.

[4]   TasNetworks, Transmission and Distribution Regulatory Proposal 2019-24, 31 January 2018,

debt component of the rate of return each year in accordance with our decision to use a ten-year trailing average portfolio return on debt that is rolled-forward each year.

Under a trailing average portfolio approach the allowed return on debt will depend on the annual return on debt estimates of previous years. The allowed portfolio return on debt for each year of TasNetworks' 2019–24 regulatory control period is dependent on the allowed return on debt for TasNetworks' 2017–19 regulatory control period.[5]

Our rate of return and TasNetworks' proposed rate of return is set out in table 3-1.

Table 3-1   Draft decision on TasNetwork distribution's rate of return (% nominal)

	TasNetworks' final decision (2017–19)	TasNetworks' proposal (2019–24)	AER draft decision (2019–24)	Allowed return over regulatory control period
Nominal risk free rate	2.85%	2.64%[a]	2.66% [b]	
Market risk premium	6.5%	6.5%	6%	
Equity beta	0.7	0.7	0.6	
Return on equity (nominal post–tax)	7.4%	7.2%	6.3%	Constant (%)
Return on debt (nominal pre–tax)	5.1%[c]	5.01%	4.98%[d]	Updated annually
Gearing	60%	60%	60%	Constant (60%)
Nominal vanilla WACC	6.00%	5.89%	5.51%	Updated annually for return on debt
Forecast inflation	2.45%	2.42%	2.45%	Constant (%)

Source: AER analysis;

[a] TasNetworks' placeholder risk free rate based on an averaging period of 4 August to 31 August 2017

[b] AER placeholder averaging period of 20 business days ending 31 July 2018

[c] AER return on debt for 2017-18

[d] AER placeholder trailing average return on debt for 2019–20 (the first year of the 2019–24 period).

3.1.1   Rate of return guideline

This draft decision is being made at a time when we are consulting on our 2018 rate of return Guidelines. The current review is to be completed by December 2018.

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[5]   Our draft decision adopts a placeholder trailing average return on debt for 2019–20 for the 2019–24 regulatory period. We note that the expected revenue would differ from that set out in the draft decision if the estimated annual return on debt in future regulatory years are expected to reflect the placeholder annual return on debt estimated for 2019–20. This is because the trailing average return on debt would decrease due to the latter assumption (relative to the former), thereby reducing the rate of return and allowed return on capital in future years.

As such, the revised rate of return guidelines (the 2018 Guidelines) will be finalised prior to our final decision on TasNetworks' 2019–24 electricity distribution determination in April 2019. Nevertheless, the National Electricity Rules include transitional provisions that provide that we must have regard to the current rate of return guidelines (the 2013 Guidelines) in making TasNetworks' 2019–24 determination and other determinations due to be made in April 2019.

The 2013 Guidelines are not binding. This means service providers can propose departures from the guidelines and we can determine to depart from them if doing so will contribute to the achievement of the allowed rate of return objective and the national electricity objective. Reasons must be provided for any departures from the guidelines.[6]

However, COAG Energy Council has agreed to implement a binding rate of return instrument, and legislative amendments have been introduced into the SA Parliament that would result in the 2018 Guidelines becoming a binding instrument.[7] COAG Energy Council intends the binding rate of return instrument to apply to TasNetworks' 2019–24 determination and other determinations due to be made in April 2019. Legislative amendments were introduced into SA Parliament that would give effect to this policy.[8] These amendments have not yet passed through SA Parliament.

TasNetworks proposed to estimate all elements of its rate of return in accordance with the 2013 Guidelines. Other service providers have adopted the 2013 Guidelines with proposed departures.

Consumer groups generally did not provide detailed submissions on TasNetworks' or other service providers' rate of return proposals in recognition of the ongoing review of the 2018 Guidelines. The ECA and CCP10 supported adopting the positions from the final 2018 Guidelines in our final decision for TasNetworks and other determinations due to be made in April 2019 (a decision that the COAG EC has made in its determination of a binding guideline). The Tasmanian Small Business Council submitted that the rate of return should be lowered from the 2013 Guidelines. Origin and PIAC supported the draft 2018 Guidelines' equity beta of 0.6.

Our draft decision for TasNetworks reflects our consideration of its proposal and the draft 2018 Guidelines. We have undertaken an extensive industry-wide consultation in arriving at our draft 2018 Guideline. The extent of consultation is detailed on our website and provides us with sufficient evidence to depart from the 2013 Guideline in arriving at this draft decision. However, we note that consultation on the 2018 Guideline is ongoing and we will consider all submissions made on our draft 2018 Guideline and to this determination process before making a final determination on the rate of return to apply to TasNetworks.

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[6]   For example, NER 6.2.8 (c)(1) and NER S6.1.3 (9).

[7]   COAG Energy Council, *Bulletin binding rate of return guideline*, June 2018.

[8]   South Australia Parliament, *Statutes Amendment (National Energy Laws) (Binding rate of return instrument) Bill 2018*, 2 August 2018.

3.2 Return on equity

The allowed return on equity of 6.3 per cent is estimated using the Sharpe-Lintner Capital Asset Pricing Model (SL-CAPM). Using this model the return on equity is calculated as the sum of:[9]

- The risk free rate, which we estimate to be 2.66 per cent; and

- The equity risk premium, which is the product of:
    - the market risk premium, which we estimate to be 6.0 per cent, and
    - the equity beta, which we estimate to be 0.6.

The reasons for adopting this approach to estimating the return on equity are set out in detail in the draft 2018 Guidelines.

Under the approach set out in the draft 2018 Guideline, the market risk premium and equity beta are specified as fixed values, while a methodology for estimating the risk free rate is specified. Under this methodology the risk free rate is estimated as the average yield on Commonwealth Government securities, averaged over a period nominated by the service provider. The draft 2018 Guideline sets out conditions that nominated averaging periods must meet.

Our draft decision is to accept TasNetworks' proposed risk free rate averaging period for the reasons set out in the draft 2018 Guidelines.[10] That is, we consider that the proposed period satisfies the relevant criteria specified in the draft 2018 Guidelines.[11] We specify this period in confidential Appendix and it will be used to update the risk free rate in the final decision on TasNetworks' 2019–24 electricity distribution determination.

TasNetworks proposed using and MRP of 6.5% and a beta 0.7 in line with the 2013 guidelines. Evoenergy submitted two separate reports from Frontier Economics (December 2017 and February 2018) in support of its proposal for a market risk premium of 7 per cent and an equity beta of 0.7.[12] We have also received further consultant reports from Ausgrid (Frontier, April 2018) and Essential Energy (CEG, November 2017) which support an equity beta of 0.7.[13] The April 2018 Frontier report

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[9] AER, *Draft rate of return guideline explanatory statement*, July 2018.

[10] TasNetworks, *Letter to AER proposing Return on Debt Averaging Periods*, 24 January 2018.

[11] AER, Draft rate of return guidelines explanatory statement, July 2018, pp. 191, 194–196.

[12] Evoenergy, *Regulatory Proposal for the ACT electricity distribution network 2019–24 Attachment 8: rate of return, imputation credits and forecast inflation*, January 2018, p. 8–5; Frontier, *An equity beta estimate for Australian energy network businesses*, February 2018 (A January 2018 version of this report was also submitted); Frontier, Low-beta bias, December 2017.

[13] AusGrid, p. 149–150; Frontier, *Estimation of certain aspects of the allowed rate of return*, April 2018; CEG, *WACC parameter estimates for Essential Energy,* November 2017.

proposed a higher market risk premium than 7 per cent[14] and we note that other service providers have proposed a market risk premium of 6.5 per cent.[15]

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[14]   Frontier, Estimation of certain aspects of the allowed rate of return, April 2018.
[15]   Essential Energy, Endeavour Energy, AusGrid, NT Power and Water Corporation.

A Our consideration of these reports (which has formed part of the consultation process on the 2018 Guideline) is outlined in Response to consultant reports

This appendix summarises our consideration of the key issues set out in consultant reports.

We received the following consultant reports from service providers as part of their proposals:

- Frontier, Estimation of certain aspects of the allowed rate of return, April 2018

- CEG, WACC parameter estimates for Essential Energy, November 2017

- Frontier, The market risk premium, December 2017

- Frontier, An equity beta estimate for Australian energy network businesses, February 2018 (a January 2018 version of this report was also submitted)

- Frontier, Low-beta bias, December 2017.

We note that while these reports were submitted as part of proposals, the draft 2018 Guidelines have either considered them or considered similar substantive issues as those in the reports. For example:

- The draft 2018 Guidelines considered Frontier's April 2018 Frontier report which contained substantively similar material as its 'Low beta bias' and 'An equity beta estimate for Australian energy network businesses' reports. The draft 2018 Guidelines also considered the November 2017 CEG report.

- Frontier's 'The market risk premium' and 'Estimation of certain aspects of the allowed rate of return' reports contain substantively similar issues/submissions as those considered in the draft 2018 Guideline.

- The draft 2018 Guideline covered similar topics as the consultant reports for the return on debt.

Based on the information currently available, our view for this draft decision is that the draft 2018 Guidelines' reasoning is reasonable for informing our view of these reports and our decision to depart from the 2013 Guidelines for the relevant rate of return parameters.

However, our review of the rate of return guidelines is ongoing. We will consider all submissions made on our draft 2018 Guidelines and to this determination process before making a final determination on the rate of return to apply to TasNetworks.

Table 3-3   AER consideration of reports on equity beta

Issues	Considerations
The AER's adjustment does not fully correct for low beta bias.	The material in the December 2017 Frontier report is substantively the same as that in the April 2018 report considered in the draft 2018 Guidelines. Frontier referenced tests of asset model performance, the Black CAPM and the 2013 Guidelines to support its view. We are not persuaded, at this stage, that a specific adjustment should be made for low beta bias for a range of reasons including the lack of clarity on an ex-ante basis or that investors and market practitioners account for it on the same ex-ante basis. We also note that: • Results of asset model tests can depend on how the tests are designed and has been observed to indicate 'more about the shocks to the expected returns (volatility) rather than the equilibrium expected returns'. • Frontier mischaracterised the 2013 Guidelines by stating that we uplifted the equity beta to account for the low beta bias. • We have consistently noted that there are a range of issues with implementing the Black CAPM and there is little evidence that other regulators, academics or market practitioners use the Black CAPM to estimate the return on equity
Emprical estimates of equity beta have increased	We considered the CEG report in the draft 2018 Guidelines and note that CEG's observation relied on short term estimates and cautioned over reliance on them. We noted that our empirical study from the draft 2018 Guideline, which is based on a variety of estimation periods, supports an empirical range of 0.4–0.8 and a point estimate of 0.6.
The Black CAPM should be used to address the low beta bias associated with the SLCAPM and the AER has acknowledged in the 2013 Guidelines the bias as a reason for selecting a top of the range point estimate. Adjusting for low beta bias (using a range of zero beta premiums) supports a beta of above 0.7 and at least 0.8.	The draft 2018 Guidelines considered this and concluded that low beta bias and Black CAPM are different concepts. We acknowledge the existence of low beta bias in ex-post data. However, we do not give weight to low beta bias either in the 2013 Guidelines or in the draft 2018 Guideline for a number of reasons including lack of use by financial practitioners on an ex-ante basis. We have also further considered the Black CAPM and are not persuaded, at this stage, to select an equity beta towards the upper end of the observed empirical range due to limited confidence in the model, empirical issues (the zero-beta return is unobservable and there is no apparent consensus on methods for estimating this return) and lack of use in practice.
Empirical estimates for comparator firms have increased since the 2013 Guidelines, and warrants an equity beta of at least 0.7.	The material in the February 2018 Frontier report is substantively the same as that in the April 2018 report considered in the draft 2018 Guidelines.
Other ASX-listed infrastructure firms support an equity beta materially higher than 0.7.	Our observations of the April 2018 report are set out in the draft 2018 Guideline and therefore remain appropriate for informing our view on the February 2018 report. For example: • We noted that Frontier's observations were based on 5 year estimates when Frontier supported the use of longer term data and acknowledged that 5 year estimates is insufficient to provide statistically reliable estimates. • We did not consider that other ASX-listed infrastructure firms can be used to inform the equity beta of a benchmark efficient entity with a similar level of risk as a relevant service provider in providing regulated services. This is because the risk characteristics other Australian infrastructure businesses would be very different to a firm supplying the regulated energy network services. • To the extent we have regard to Frontier's 10-year estimates, they are

	consistent with our empirical range and do not support an increase to our range and point estimate
The AER has evidence that the beta of Australian energy networks has increased since 2014 but this is muted by the inclusion of de-listed comparators.	The most recent empirical study is that in the draft 2018 Guideline. We have observed some increase in empirical estimates since the 2013 Guidelines. However, our updated empirical estimates currently support an equity beta less than 0.7. Our comparison of still-listed firms also supported a point estimate towards the middle of an empirical range of 0.4-0.8. We have considered the use of de-listed firms and concluded that they can still provide useful and (historically) reliably information.

Table 3-4   AER consideration of reports on MRP

Issues	Considerations
All MRP estimates used by the AER in the 2013 Guidelines have increased since December 2013 therefore the MRP estimate from the AER should be higher than the 6.5% stated	We have considered this issue and found it is substantially similar to that considered in the draft 2018 Guideline. Therefore, we consider that reasoning in the draft 2018 Guideline is relevant for informing our view on this issue. Our further consideration of the relevant evidence in the draft 2018 Guideline leads us to give most weight to Historical Excess Returns and less weight to other evidence resulting in a value of 6 per cent. We have diminished confidence in estimates derived from the DGM compared to the 2013 Guideline and we do not use it, currently, to select a point estimate above that indicated by historical excess returns.
Arithmetic averages of historical excess returns (HER) support an MRP of at least 6 to 6.5 per cent. Geometric averages are downwardly biased and not useful.	The arguments in this report around geometric averages appear substantively similar to those considered in previous decisions, expert advice and the draft 2018 guideline. Therefore, our reasoning in those documents is appropriate for informing our decision. We have had regard to evidence that geometric averages may be downwardly biased. We have also had regard to evidence that arithmetic averages may be upwardly biased. Overall, we consider that both arithmetic and geometric averages of historical returns have a role in informing our MRP estimate.
The AER's DGM supports a range of 7.14 to 8.18 per cent and should be given significant weight when estimating the MRP	We acknowledge that MRP estimates from the DGM are higher than those from the HER. However, substantively similar issues were considered in the draft 2018 Guideline and we note that in times of low interest rates the DGM provides estimates of the MRP that are upwardly biased. Further, our analysis has yielded diminished confidence in estimates from the DGM due to numerous issues. We are therefore not currently persuaded to select a MRP estimate towards the top of the historical excess returns range for reasons set out in the draft 2018 Guidelines.
The AER produced a combined range from HER and DGM results, using an average to arrive at their final MRP estimate	The 2013 Guidelines gave most weight to HER when estimating the MRP and gave the DGM directional weight and did not use a 'combined' range. However, further consideration in the draft 2018 Guideline means we now have diminished confidence in the DGM estimates of the MRP. This does not give us sufficient confidence to move the estimate away from that indicated by HER or to use a combined range to estimate the MRP.
Other Australian regulators have adopted higher results over the past 12 months	We acknowledge that other regulators have, in some cases, arrived at higher estimates of the MRP. However, these differences appears to be due to the differing use of and weight to various methodologies for estimating the MRP from analysis in the draft 2018 Guideline. In departing from the 2013 Guideline, we have considered the relevant evidence and weighted them based on their strengths, weaknesses and suitability for our regulatory task. Our analysis in the draft 2018 Guideline indicates that MRP estimates of other Australian regulators should be carefully considered, but not as a simple direct comparison of end results, for reasons set out in the draft 2018 Guideline.
Survey Evidence indicates the MRP has increased since 2013	This issue was raised by reports and submissions to our draft 2018 Guideline and we consider our reasoning then remains appropriate for informing this decision. We acknowledge that 2 surveys appear to indicate a value higher than that from the 2013 Guideline. However, we consider that triangulation across surveys can reduce the limitations associated with particular surveys. Based on the information available, we do not consider that on their own the 2 surveys indicate an increase as the overall evidence still support a range of 5.5 to 6.5 per cent and the most commonly used value appears to be 6 per cent.
The Wright Approach has use in setting the MRP and shows an increased MRP	This issue was considered in the draft 2018 Guideline and our reasoning is appropriate for informing this decision. We consider that there is neither

since 2013	strong theoretical reasons, nor strong empirical evidence, to support an ongoing and consistent inverse relationship between the MRP and the risk free rate on which the Wright approach relies. Based on the information available, in our draft 2018 Guideline we consider that the Wright approach should not be given weight in setting our MRP estimate.
Effective MRP's (the difference between the prevailing risk free rate and the expected market return) from independent valuation reports are directly comparable to regulatory decisions and show an increase in the MRP.	This issue was considered in the draft 2018 Guideline and our considerations are relevant for informing this decision. We note effective MRP's are not the practitioners' estimate of an MRP. It can include other uplifts made for perceived low interest rates, size premiums and other adjustments/uplifts which may also be quite subjective. This raises potential incompatibility with our regulatory regime, the allowed rate of return objective and may be too ad-hoc to be suitable in a regulatory context.
Low interest rates since 2013 should have lead the AER to increase the estimate of the MRP to compensate	We considered the relationship between the risk free rate and the MRP as part of the draft 2018 Guidelines. The Frontier report does not appear to raise new arguments which makes our reasoning at the 2018 draft guideline appropriate for informing this decision. As part of our consideration, we note that Partington and Satchell have previously stated that low interest rates should not be considered unusual for Australia. They continue that, whilst interest rates may be low, any relationship between the MRP and risk free rate is an open question, and any relationship that may exist is not sufficiently well established to form the basis for regulatory adjustment to the MRP.
DGM ROE estimates support a relatively stable ROE	Our analysis indicates that the DGM does not provide sufficient evidence to persuade us of a stable return on equity. We note that the DGM is an unsuitable model for providing a direct estimate of the return on equity due to potential analyst biases, sticky dividends, the wide range of possible long term growth rates and inflation assumptions, and dividend end reinvestment plans over-stating true dividend yields. We have also considered the issue of a stable return on equity. We conclude that, based on the evidence before us, there is a lack of support for an inverse relationship between the risk free rate and the MRP which is necessary for a stable return on equity. The reasons are set out in more detail in the draft 2018 Guideline.
Without formal econometric mapping there is no basis for using conditioning variables in the decision	We have considered this issue in previous decisions and the draft 2018 Guideline. Given the absence of substantively new information, our reasoning remains appropriate for informing this decision. We consider that conditioning variables are useful evidence when considered in context as they can detect changing market conditions and are used as directional information. Further consideration in the draft 2018 Guideline led us to conclude that, whilst they do not provide reliable estimates on their own, they can be used to help inform the point estimate derived from HER as long as they are applied consistently and symmetrically through time.
A fixed MRP leads to unrealistic return on equity estimates in times of low interest rates	Our assessment of the material before us is that there is insufficient evidence to suggest a relationship between the MRP and the risk free rate for reasons set out in the draft 2018 Guideline. We have also noted previously that there is insufficient evidence of an inverse relationship between the risk free rate and the MRP.
Institutions and regulators have adopted a stable return on equity as part of determining the rate of return	We disagree with Frontier's submission. In considering other regulators' decisions, we are not aware of any Australian regulators adopting a stable return on equity. We do not give weight to estimates from foreign regulators due to differences in the risk characteristics of overseas energy markets arising from differences in regulatory frameworks, consumer demand patterns, geography, business cycles, energy market conditions and technologies. We have also observed a lack of comparability and issues

with international regulators when considering MRP estimates from other Australian and international regulators in the draft 2018 Guideline.

We have previously considered a decision by the Federal Energy Regulatory Commission (U.S Regulator) and why their decision regarding a stable return on equity from the DGM was not considered sufficient evidence as to justify a stable return on equity in our context.

We have previously noted that institutions and financial practitioners may have arrived at a more stable return on equity due to uplifting parameters or capturing risks not in the SLCAPM. We detail some of these uplifts in recent decisions, noting that at times they are made based on 'anecdotal evidence' or without explanation. We consider, and have considered, these methods may be incompatible with our regulatory objectives and too ad-hoc for implementation for reasons outlined in the draft 2018 Guideline.

Issues	Considerations
The DGM provides a reliable estimate of the MRP and the AER is overweighting potential flaws	We noted a range of flaws with the DGM in the draft 2018 Guideline such as analyst biases, wide range of possible long term growth rates, sticky dividends, inflation assumptions and dividend end reinvestment plans over-stating true dividend yields.
	This has reduced confidence in the model for producing estimates that can be used to inform the MRP as concerns about the biases of the model and the divergent results from alternative versions of the model have increased.

Table 3-5   AER consideration of reports on return on debt

Issues	Considerations
The guidance from the AER to derive the trailing average return on debt is quite detailed. However, the AER does not explicitly explain how it would treat cases where the BVAL curve is missing for a part of the averaging period.	The draft 2018 Guideline includes contingencies for events regarding the use of third party data curves including those cases where certain curve/s are not published, temporarily or permanently. These contingencies are in clause 19 of the draft 2018 Guideline.
In estimation of cost of debt, the business days are Australian business days (i.e., weekends and public holidays have been excluded) has been assumed.	We explain that, in applying the draft 2018 Guideline, we define business day as 'a date on which the Reserve Bank of Australia (RBA) publishes Commonwealth Government Security (CGS) mid-rates'.
In estimating the cost of debt, immediate transition to trailing average approach has been assumed	In departing from the 2013 Guideline, our decision is to maintain a full transition to a trailing average for the reasons set out in the draft 2018 Guidelines. We consider changing this approach will not contribute to the achievement of the national gas and electricity objectives. Further, our current approach on transition to the trailing average return on debt has been considered extensively in Australian Competition Tribunal and Full Federal Court decisions. The outcomes from these decisions reinforce our view that a revenue neutral transition is necessary to advance the NEO and NGO.
Third party data providers – RBA and Bloomberg curves were used	In departing from the 2013 Guideline, we have examined two new curves that came to our attention since we made the 2013 Guidelines, namely S&P Global and Thompson Reuters. We conclude that Thompson Reuter curve should be added for use in the implementation of return on debt approach.
Use of retrospectively updated third party data	The draft 2018 Guideline provide under clause 19 that "revised or updated historical yield estimates must not be used to recalculate the allowed return on debt that has been finalised in any regulatory year".
Switch from BFV to BVAL from 1 May 2014 onwards for the Bloomberg data. The AER has so far not committed to a position regarding the precise date for	We note that Bloomberg ceased publication of the BFV curve in May 2014. However, it is not entirely clear if specifying a date for switching is needed at this stage as the draft 2018 Guidelines estimate a forward looking rate of return (including return on debt).

the switching, presumably because its guideline transition approach did not require one. The BVAL curve's intermittent availability (before 1 May 2014) and erratic nature (due to term structure issue) are concerning.	We recognise that third party data may be subject to data availability and have specified contingencies in the draft 2018 Guidelines to address changes to data availability.
	We have assessed the BVAL curve which was also assessed by the ACCC's Regulatory Economic Unit. We note that during the 2018 rate of return guideline review stakeholders submitted that the current curves (including BVAL) are well accepted and supported continued use of the curves.
BBB curves were used to generate spread to swap estimates	In departing from the 2013 Guideline, we have considered the implementation of the benchmark credit rating. We adopt a weighted combined use of broad BBB and broad A curves at a 2:1 ratio as the evidence and our analysis suggest it would better implement the benchmark credit rating of BBB+:
	• We considered that some combination of broad-BBB and broad-A curves would provide the best fit to a BBB+ benchmark credit rating. Use of a 'broad-BBB' series alone will, other things held constant, overestimate the return on debt required for a BBB+ rated entity. Sole reliance on a broad-A curve will underestimate the return on debt required for a BBB+ rated entity.
	• Our analysis of credit ratings arrived at the 2:1 ratio which resulted in a closer match with the actual debt instruments raised by service providers compared to our current approach.

. We note that these issues appear substantively the same as those considered in the draft 2018 Guideline. Therefore, we depart from the 2013 Guideline for reasons in the draft 2018 Guideline.

We note, however, consultation on the 2018 Guidelines is ongoing and we will consider all submissions made on our draft 2018 Guidelines and to this determination process before making a final determination on the rate of return to apply to TasNetworks.

3.3 Return on debt

The allowed return on debt provides a service provider with an allowance to cover its borrowing costs associated with funding investments in its network.

The November 2017 CEG and the April 2018 Frontier reports also provided analysis on estimating the return on debt.[16]

However, our analysis of the evidence and the issues raised in these reports in the draft 2018 Guideline leads us to depart from the 2013 Guideline and estimate a return on debt based on the following:[17]

• A 10 year benchmark term for debt

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[16] Frontier, Estimation of certain aspects of the allowed rate of return, April 2018; CEG, WACC parameter estimates for Essential Energy, November 2017.

[17] AER, *Draft rate of return guidelines explanatory statement*, July 2018, pp. 329, 357–371.

- A benchmark credit rating of BBB+ that is implemented by placing 2/3 weight on a broad BBB rated curve and 1/3 weight on a broad A rated curve

- To continue a transition into a full trailing average. The first year of the 2019-24 regulatory period continues the transition at year 6 and then each subsequent year will progress the transition through the full ten-year transition period.

- Estimate the return on debt by reference to published third party yield curves using a simple average of Bloomberg, Thomson Reuters and RBA curves

- Extrapolation and interpolation methodologies for third party yield curves, contingencies with regard to third party data[18] and conditions for the debt averaging periods.

In its regulatory proposal for the 2019–24 regulatory control period, TasNetworks proposed to align the allowed return on debt for both its distribution and transmission networks in a manner that affects their transition to the trailing average portfolio approach. Our decision is to maintain the current transition paths for TasNetworks' transmission and distribution networks for the reasons set out in our draft 2018 Guidelines.

In the draft 2018 Guidelines we noted that the revenue impacts of aligning the transition paths for the allowed return on debt may be addressed through other mechanisms available in our regulatory determination and annual pricing processes. After we published the draft 2018 Guidelines TasNetworks submitted a letter stating that it is no longer seeking to align the return on debt transition paths of its transmission and distribution businesses. We will consider this letter in our final 2018 rate of return guidelines and in our final decision on TasNetworks' 2019–24 determination.

Application of the above approach results in a placeholder return on debt of 4.98 per cent.[19] We will update the allowed return on debt in our final decision using data over TasNetworks' return on debt averaging period.

In departing from the 2013 Guidelines, our draft decision is to accept TasNetworks' proposed debt averaging periods for 2019 to 2024 for the reasons set out in the draft 2018 Guideline. [20] That is, we consider that the debt averaging periods satisfy the relevant criteria specified in the draft 2018 Guidelines.[21] We specify these averaging periods in confidential Appendix . It is a requirement under the draft 2018 Guidelines to keep the dates of averaging periods confidential.[22]

3.4 Forecast inflation

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18   AER, *Draft rate of return guidelines explanatory statement,* July 2018, p. 371.
19   AER, *Draft rate of return guidelines explanatory statement*, July 2018, p. 337.
20   TasNetworks, *Letter to AER proposing Return on Debt Averaging Periods*, 24 January 2018.
21   AER, *Draft rate of return guidelines explanatory statement*, July 2018, pp. 369–371.
22   AER, Draft rate of return guidelines, 10 July 2018, p. 12.

Our estimate of expected inflation is 2.45 per cent which will be updated for the final decision. It is an estimate of the average annual rate of inflation expected over a ten year period. We estimate expected inflation over this 10-year term to align with the term of the rate of return.

Our estimate of expected inflation is estimated in accordance with the method set out in the post-tax revenue model. The rules set out how we are to apply the post-tax revenue model and the inflation estimation method in the model in our electricity determinations.[23]

Our estimate of expected inflation is estimated as the geometric average of 10 annual expected inflation rates. We use the RBA's forecasts of inflation for the first two years of TasNetworks' 2019–24 regulatory period as the first two annual rates. We then use the mid-point of the RBA's inflation target band as the remaining eight annual rates.

3.5 Equity and debt raising costs

In addition to compensating for the required rate of return on debt and equity, we provide an allowance for the transaction costs associated with raising debt and equity. We include debt raising costs in the opex forecast because these are regular and ongoing costs which are likely to be incurred each time service providers refinance their debt. On the other hand, we include equity raising costs in the capex forecast because these costs are only incurred once and would be associated with funding the particular capital investments.

Our draft decision forecasts for debt and equity raising costs are included in the opex and capex attachments, respectively. In this section, we set out our assessment approach and the reasons for those forecasts.

3.5.1 Equity raising costs

Equity raising costs are transaction costs incurred when a service provider raises new equity. We provide an allowance to recover an efficient amount of equity raising costs.

We apply an established benchmark approach for estimating equity raising costs. This approach estimates the costs of two means by which a service provider could raise equity—dividend reinvestment plans and seasoned equity offerings. It considers where a service provider's capex forecast is large enough to require an external equity injection to maintain the benchmark gearing of 60 per cent.[24]

Our benchmark approach was initially based on 2007 advice from Allen Consulting Group (ACG).[25] We amended this method in our 2009 decisions for the ACT, NSW and

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23 TasNetworks, Transmission and Distribution Regulatory Proposal 2019-24, 31 January 2018, p. 46.

24 AER, Final decision amendment electricity distribution network service providers post-tax revenue model handbook, 29 January 2015, pp. 15, 16 & 33. The approach is discussed in AER, *Final decision, Powerlink Transmission determination 2012-13 to 2016-17*, April 2012, pp. 151-152.

25 ACG, *Estimation of Powerlink's SEO transaction cost allowance-Memorandum*, 5 February 2007.

Tasmanian electricity service providers.[26] We further refined this approach in our 2012 Powerlink decision.[27]

Our benchmark approach requires an estimate of the dividend distribution rate (sometimes called the payout ratio) as an input into calculating equity raising costs. The dividend distribution rate is also estimated when we estimate the value of imputation credits. We consider that a consistent dividend distribution rate should be used when estimating both the value of imputation credits and equity raising costs.

TasNetworks proposed using our benchmark approach for estimating equity raising costs and used a distribution rate of 0.7, which is consistent with the distribution rate estimated in the 2013 Guidelines.[28] However, in departing from the 2013 Guideline, our draft decision is adopt a payout ratio of 0.83. Our reasons for departing from the 2013 Guideline are set out in our draft 2018 Guideline.[29] On this basis we determine equity raising costs of $0.4 million (rounded) for this distribution determination.

3.5.2   Debt raising costs

Debt raising costs are transaction costs incurred each time debt is raised or refinanced. These costs may include arrangement fees, legal fees, company credit rating fees and other transaction costs. We provide an allowance to recover an efficient amount of debt raising costs.

We determine debt raising costs using our benchmark based approach. TasNetworks has accepted our approach in its proposal.[30] However, as set out in the operating expenditure attachment, we accept TasNetworks' proposed total opex allowance for its standard control services in its entirety. This includes its proposed debt raising cost of $4.59 million ($2018–2019) as set out in Table 3-2. For this reason, we have not separately updated TasNetworks' estimate of debt raising costs.

Table 3-2   AER's draft decision on debt raising costs (million, $)

2019–20	2020–21	2021–22	2022–23	2023–24	Total
0.87	0.9	0.92	0.94	0.96	4.59

Source: AER analysis.

Note: Columns may not add to total due to rounding for presentation in table.

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[26]   AER, *Final decision, ACT distribution determination 2009–10 to 2013–14*, April 2009, appendix H; AER, *Final decision, NSW distribution determination 2009–10 to 2013–14*, April 2009, appendix N; AER, *Final decision, TransGrid transmission determination 2009–10 to 2013–14*, April 2009, appendix E; AER, *Final decision, TransGrid transmission determination 2009–10 to 2013–14*, April 2009, appendix E.

[27]   AER, *Final decision, Powerlink Transmission determination 2012-13 to 2016-17*, April 2012, pp. 151–152.

[28]   TasNetworks, Transmission and Distribution Regulatory Proposal 2019-24, 31 January 2018, p. 46

[29]   AER, Draft rate of return guidelines explanatory statement, July 2018, p. 388.

[30]   TasNetworks, Transmission and Distribution Regulatory Proposal 2019-24, 31 January 2018, p. 171

AER's estimation approach

Our standard approach to forecasting debt raising costs is based on the approach in a report from the Allen Consulting Group (ACG), commissioned by the ACCC in 2004.[31] However, we relied on updated market data from 2008–13, as submitted in a recent report by PricewaterhouseCoopers (PwC) during the 2013 rate of return guideline process.[32] The approach uses a five year window of up to date bond data to reflect current market conditions. Where PwC has updated the data or the method, we have compared it against our standard approach and we are satisfied it is reasonable.

The ACG method involves calculating the benchmark bond size, and the number of bond issues required to rollover the benchmark debt share (60 per cent) of the RAB. Our standard approach is to amortise the upfront costs that are incurred using the relevant nominal vanilla WACC over a ten year amortisation period. This is then expressed in basis points per annum (bppa) as an input into the post-tax revenue model (PTRM). This rate is multiplied by the debt component of a service provider's projected RAB to determine the debt raising cost allowance. The ACG approach recognises that credit rating costs can be spread across multiple bond issues, which lowers the benchmark allowance (as expressed in bppa) as the number of bond issues increases.

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[31]   The Allen Consulting Group, *Debt and equity raising transaction costs: Final report*, December 2004.

[32]   PricewaterhouseCoopers, *Energy Networks Association: Debt financing costs*, June 2013, p. i.

B Response to consultant reports

This appendix summarises our consideration of the key issues set out in consultant reports.

We received the following consultant reports from service providers as part of their proposals:

- Frontier, Estimation of certain aspects of the allowed rate of return, April 2018
- CEG, WACC parameter estimates for Essential Energy, November 2017
- Frontier, The market risk premium, December 2017
- Frontier, An equity beta estimate for Australian energy network businesses, February 2018 (a January 2018 version of this report was also submitted)
- Frontier, Low-beta bias, December 2017.

We note that while these reports were submitted as part of proposals, the draft 2018 Guidelines have either considered them or considered similar substantive issues as those in the reports. For example:

- The draft 2018 Guidelines considered Frontier's April 2018 Frontier report which contained substantively similar material as its 'Low beta bias' and 'An equity beta estimate for Australian energy network businesses' reports. The draft 2018 Guidelines also considered the November 2017 CEG report.
- Frontier's 'The market risk premium' and 'Estimation of certain aspects of the allowed rate of return' reports contain substantively similar issues/submissions as those considered in the draft 2018 Guideline.
- The draft 2018 Guideline covered similar topics as the consultant reports for the return on debt. [33]

Based on the information currently available, our view for this draft decision is that the draft 2018 Guidelines' reasoning is reasonable for informing our view of these reports and our decision to depart from the 2013 Guidelines for the relevant rate of return parameters.

However, our review of the rate of return guidelines is ongoing. We will consider all submissions made on our draft 2018 Guidelines and to this determination process before making a final determination on the rate of return to apply to TasNetworks.

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[33]   CEG, WACC parameter estimates for Essential Energy, November 2017; Frontier, Estimation of certain aspects of the allowed rate of return, April 2018.

Table 3-3   AER consideration of reports on equity beta

Issues	Considerations
The AER's adjustment does not fully correct for low beta bias.[34]	The material in the December 2017 Frontier report is substantively the same as that in the April 2018 report considered in the draft 2018 Guidelines. Frontier referenced tests of asset model performance, the Black CAPM and the 2013 Guidelines to support its view. We are not persuaded, at this stage, that a specific adjustment should be made for low beta bias for a range of reasons including the lack of clarity on an ex-ante basis or that investors and market practitioners account for it on the same ex-ante basis.[35] We also note that:[36] • Results of asset model tests can depend on how the tests are designed and has been observed to indicate 'more about the shocks to the expected returns (volatility) rather than the equilibrium expected returns'. • Frontier mischaracterised the 2013 Guidelines by stating that we uplifted the equity beta to account for the low beta bias. • We have consistently noted that there are a range of issues with implementing the Black CAPM[37] and there is little evidence that other regulators, academics or market practitioners use the Black CAPM to estimate the return on equity
Emprical estimates of equity beta have increased[38]	We considered the CEG report in the draft 2018 Guidelines and note that CEG's observation relied on short term estimates and cautioned over reliance on them.[39] We noted that our empirical study from the draft 2018 Guideline, which is based on a variety of estimation periods, supports an empirical range of 0.4–0.8 and a point estimate of 0.6.
The Black CAPM should be used to address the low beta bias associated with the SLCAPM and the AER has acknowledged in the 2013 Guidelines the bias as a reason for selecting a top of the range point estimate.[40] Adjusting for low beta bias (using a range of zero beta premiums)[41] supports a beta of above 0.7 and at least 0.8.[42]	The draft 2018 Guidelines considered this and concluded that low beta bias and Black CAPM are different concepts.[43] We acknowledge the existence of low beta bias in ex-post data. However, we do not give weight to low beta bias either in the 2013 Guidelines or in the draft 2018 Guideline for a number of reasons including lack of use by financial practitioners on an ex-ante basis. We have also further considered the Black CAPM and are not persuaded, at this stage, to select an equity beta towards the upper end of the observed empirical range due to limited confidence in the model, empirical issues (the

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[34]   Frontier, Estimation of certain aspects of the allowed rate of return, April 2018, pp. 37–64; Frontier, Low beta bias, December 2017.

[35]   AER, Draft rate of return guidelines explanatory statement, July 2018, pp. 277–284.

[36]   AER, Draft rate of return guidelines explanatory statement, July 2018, p. 279.

[37]   For example, the zero-beta return is unobservable and there is no apparent consensus on methods for estimating this return. AER, *Draft decision Multinet Gas Access Arrangement 2018–2022 Attachment 3–Rate of return*, July 2017, pp. 188–201.

[38]   CEG, WACC parameter estimates for Essential Energy, November 2017, p. 25.

[39]   AER, Draft rate of return guidelines explanatory statement, July 2018, p. 307.

[40]   CEG, WACC parameter estimates for Essential Energy, November 2017, p. 30.

[41]   Zero beta premiums are estimated as part of implementing the Black CAPM. This is added to the risk free rate to form the zero beta return which is the intercept in the Black CAPM.

[42]   CEG, WACC parameter estimates for Essential Energy, November 2017, p. 33.

[43]   AER, Draft rate of return guidelines explanatory statement, July 2018, p. 307.

	zero-beta return is unobservable and there is no apparent consensus on methods for estimating this return) and lack of use in practice.
Empirical estimates for comparator firms have increased since the 2013 Guidelines, and warrants an equity beta of at least 0.7.[44]	The material in the February 2018 Frontier report is substantively the same as that in the April 2018 report considered in the draft 2018 Guidelines. Our observations of the April 2018 report are set out in the draft 2018 Guideline and therefore remain appropriate for informing our view on the February 2018 report. For example:[45]
Other ASX-listed infrastructure firms support an equity beta materially higher than 0.7.[47]	• We noted that Frontier's observations were based on 5 year estimates when Frontier supported the use of longer term data and acknowledged that 5 year estimates is insufficient to provide statistically reliable estimates. • We did not consider that other ASX-listed infrastructure firms can be used to inform the equity beta of a benchmark efficient entity with a similar level of risk as a relevant service provider in providing regulated services.[46] This is because the risk characteristics other Australian infrastructure businesses would be very different to a firm supplying the regulated energy network services. • To the extent we have regard to Frontier's 10-year estimates, they are consistent with our empirical range and do not support an increase to our range and point estimate
The AER has evidence that the beta of Australian energy networks has increased since 2014 but this is muted by the inclusion of de-listed comparators.[48]	The most recent empirical study is that in the draft 2018 Guideline. We have observed some increase in empirical estimates since the 2013 Guidelines. However, our updated empirical estimates currently support an equity beta less than 0.7.[49] Our comparison of still-listed firms also supported a point estimate towards the middle of an empirical range of 0.4-0.8.[50] We have considered the use of de-listed firms and concluded that they can still provide useful and (historically) reliably information.[51]

[44]   Frontier, Estimation of certain aspects of the allowed rate of return, April 2018, pp. 14–27; Frontier, An equity beta estimate for Australian energy network businesses, February 2018, pp. 15–23.

[45]   AER, Draft rate of return guidelines explanatory statement, July 2018, p. 306.

[46]   AER, Draft rate of return guidelines explanatory statement, July 2018, p. 307.

[47]   Frontier, *Estimation of certain aspects of the allowed rate of return*, April 2018, pp. 14–27; Frontier, *An equity beta estimate for Australian energy network businesses*, February 2018, pp. 25–28.

[48]   Frontier, *An equity beta estimate for Australian energy network businesses*, February 2018, p. 35; Frontier, *Estimation of certain aspects of the allowed rate of return*, April 2018,

[49]   AER, *Draft rate of return guidelines explanatory statement*, July 2018, p. 261.

[50]   AER, *Draft rate of return guidelines explanatory statement*, July 2018, p. 257.

[51]   AER, *Draft rate of return guidelines explanatory statement*, July 2018, p. 264.

Table 3-4   AER consideration of reports on MRP

Issues	Considerations
All MRP estimates used by the AER in the 2013 Guidelines have increased since December 2013 therefore the MRP estimate from the AER should be higher than the 6.5% stated[52]	We have considered this issue and found it is substantially similar to that considered in the draft 2018 Guideline. Therefore, we consider that reasoning in the draft 2018 Guideline is relevant for informing our view on this issue. Our further consideration of the relevant evidence in the draft 2018 Guideline leads us to give most weight to Historical Excess Returns and less weight to other evidence resulting in a value of 6 per cent.[53] We have diminished confidence in estimates derived from the DGM compared to the 2013 Guideline and we do not use it, currently, to select a point estimate above that indicated by historical excess returns.[54]
Arithmetic averages of historical excess returns (HER) support an MRP of at least 6 to 6.5 per cent. Geometric averages are downwardly biased and not useful.[55]	The arguments in this report around geometric averages appear substantively similar to those considered in previous decisions, expert advice and the draft 2018 guideline. Therefore, our reasoning in those documents is appropriate for informing our decision. We have had regard to evidence that geometric averages may be downwardly biased. We have also had regard to evidence that arithmetic averages may be upwardly biased. Overall, we consider that both arithmetic and geometric averages of historical returns have a role in informing our MRP estimate. [56]
The AER's DGM supports a range of 7.14 to 8.18 per cent and should be given significant weight when estimating the MRP[57]	We acknowledge that MRP estimates from the DGM are higher than those from the HER.[58] However, substantively similar issues were considered in the draft 2018 Guideline[59] and we note that in times of low interest rates the DGM provides estimates of the MRP that are upwardly biased[60]. Further, our analysis has yielded diminished confidence in estimates from the DGM due to numerous issues. We are therefore not currently persuaded to select a MRP estimate towards the top of the historical excess returns range for reasons set out in the draft 2018 Guidelines.[61]
The AER produced a combined range from HER and DGM results, using an	The 2013 Guidelines gave most weight to HER when estimating the MRP and gave the DGM directional weight and did not use a 'combined' range.[63]

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52 Frontier, *Estimation of certain aspects of the allowed rate of return*, April 2018, pp. 68; Frontier, *The market risk premium*, December 2017, p. 5.

53 AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp. 214–215, 222–223, 223–226, 231–233.

54 AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp. 214–215, 222–223, 223–226, 231–233.

55 Frontier, *Estimation of certain aspects of the allowed rate of return*, April 2018, pp. 72; Frontier, *The market risk premium*, December 2017, p. 9.

56 AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp. 214-215; McKenzie and Partington, *Report to the AER: Supplementary report on the equity MRP*, 22 February 2012, p. 5; Partington and Satchell, *Report to the AER: Return on equity and comment on submissions in relation to JGN*, May 2015, pp. 16–17; Partington & Satchell, *Report to the AER: Analysis of criticism of 2015 determinations*, October 2015, pp. 44–45.

57 Frontier, *Estimation of certain aspects of the allowed rate of return*, April 2018, pp. 73; Frontier, *The market risk premium*, December 2017, p. 10.

58 AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, p. 222.

59 AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, p. 221.

60 AER, *AusNet transmission draft decision*, pp. 202–204.

61 AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp. 215–223.

average to arrive at their final MRP estimate[62]	However, further consideration in the draft 2018 Guideline means we now have diminished confidence in the DGM estimates of the MRP. This does not give us sufficient confidence to move the estimate away from that indicated by HER or to use a combined range to estimate the MRP.[64]
Other Australian regulators have adopted higher results over the past 12 months[65]	We acknowledge that other regulators have, in some cases, arrived at higher estimates of the MRP. However, these differences appears to be due to the differing use of and weight to various methodologies for estimating the MRP from analysis in the draft 2018 Guideline.[66] In departing from the 2013 Guideline, we have considered the relevant evidence and weighted them based on their strengths, weaknesses and suitability for our regulatory task.[67] Our analysis in the draft 2018 Guideline indicates that MRP estimates of other Australian regulators should be carefully considered, but not as a simple direct comparison of end results, for reasons set out in the draft 2018 Guideline.[68]
Survey Evidence indicates the MRP has increased since 2013[69]	This issue was raised by reports and submissions to our draft 2018 Guideline and we consider our reasoning then remains appropriate for informing this decision.[70] We acknowledge that 2 surveys appear to indicate a value higher than that from the 2013 Guideline.[71] However, we consider that triangulation across surveys can reduce the limitations associated with particular surveys.[72] Based on the information available, we do not consider that on their own the 2 surveys indicate an increase as the overall evidence still support a range of 5.5 to 6.5 per cent and the most commonly used value appears to be 6 per cent.[73]
The Wright Approach has use in setting the MRP and shows an increased MRP since 2013[74]	This issue was considered in the draft 2018 Guideline and our reasoning is appropriate for informing this decision. We consider that there is neither strong theoretical reasons, nor strong empirical evidence, to support an ongoing and consistent inverse relationship between the MRP and the risk free rate on which the Wright approach relies. Based on the information available, in our draft 2018 Guideline we consider that the Wright approach should not be given weight in setting our MRP estimate.[75]
Effective MRP's (the difference between the prevailing risk free rate and the expected market return) from independent valuation reports are directly comparable to regulatory	This issue was considered in the draft 2018 Guideline and our considerations are relevant for informing this decision. We note effective MRP's are not the practitioners' estimate of an MRP. It can include other uplifts made for perceived low interest rates, size premiums and other adjustments/uplifts which may also be quite subjective.

63   AER, *Rate of Return Guideline, Explanatory Statement*, December 2013 p. 11.

62   Frontier, *Estimation of certain aspects of the allowed rate of return*, April 2018, pp. 75–76; Frontier, *The market risk premium*, December 2017, pp. 11–13.

64   AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, p. 203.

65   Frontier, *Estimation of certain aspects of the allowed rate of return*, April 2018, pp. 77–78; Frontier, *The market risk premium*, December 2017, pp. 13–15.

66   AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp. 232–233.

67   AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp. 231–233.

68   AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp. 231–233.

69   Frontier, *Estimation of certain aspects of the allowed rate of return*, April 2018, pp. 79–80; Frontier, *The market risk premium*, December 2017, p. 16–17.

70   AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp. 223–225.

71   AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp. 223–226.

72   AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp. 223–226.

73   AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp. 223–226.

74   Frontier, *Estimation of certain aspects of the allowed rate of return*, April 2018, pp. 81–83; Frontier, *The market risk premium*, December 2017, p. 17–19.

75   AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp. 234–235.

decisions and show an increase in the MRP.[76]	This raises potential incompatibility with our regulatory regime,[77] the allowed rate of return objective and may be too ad-hoc to be suitable in a regulatory context.[78]
Low interest rates since 2013 should have lead the AER to increase the estimate of the MRP to compensate[79]	We considered the relationship between the risk free rate and the MRP as part of the draft 2018 Guidelines. The Frontier report does not appear to raise new arguments which makes our reasoning at the 2018 draft guideline appropriate for informing this decision.[80]

As part of our consideration, we note that Partington and Satchell have previously stated that low interest rates should not be considered unusual for Australia.[81] They continue that, whilst interest rates may be low, any relationship between the MRP and risk free rate is an open question, and any relationship that may exist is not sufficiently well established to form the basis for regulatory adjustment to the MRP.[82] |
| DGM ROE estimates support a relatively stable ROE[83] | Our analysis indicates that the DGM does not provide sufficient evidence to persuade us of a stable return on equity. We note that the DGM is an unsuitable model for providing a direct estimate of the return on equity due to potential analyst biases, sticky dividends, the wide range of possible long term growth rates and inflation assumptions, and dividend end reinvestment plans over-stating true dividend yields.[84]

We have also considered the issue of a stable return on equity. We conclude that, based on the evidence before us, there is a lack of support for an inverse relationship between the risk free rate and the MRP which is necessary for a stable return on equity. The reasons are set out in more detail in the draft 2018 Guideline.[85] |
| Without formal econometric mapping there is no basis for using conditioning variables in the decision[86] | We have considered this issue in previous decisions and the draft 2018 Guideline. Given the absence of substantively new information, our reasoning remains appropriate for informing this decision.

We consider that conditioning variables are useful evidence when considered in context as they can detect changing market conditions and are used as directional information.[87]

Further consideration in the draft 2018 Guideline led us to conclude that, whilst they do not provide reliable estimates on their own, they can be used |

[76] Frontier, *Estimation of certain aspects of the allowed rate of return*, April 2018, pp. 84–87; Frontier, *The market risk premium*, December 2017, p. 20–24.

[77] Partington and Satchell, *Report to the AER: Discussion of estimates of the return on equity*, 12 April 2017, p. 16; AER, *AusNet Services Final Decision – Rate of Return Attachment*, April 2017, pp. 94, 101.

[78] AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, p. 207.

[79] Frontier, *Estimation of certain aspects of the allowed rate of return*, April 2018, pp. 100–110; Frontier, *The market risk premium*, December 2017, pp. 49–56.

[80] AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp. 203–209.

[81] Partington and Satchell, *Report to the AER: Cost of equity issues–Final decisions for the VIC DNSPs*, April 2016, p. 23.

[82] AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, p. 206.

[83] Frontier, *Estimation of certain aspects of the allowed rate of return*, April 2018, pp. 123; Frontier, *The market risk premium*, December 2017, pp. 58–60.

[84] AER, *AusNet transmission draft decision*, pp. 202–204.

[85] AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, p. 221.

[86] Frontier, *Estimation of certain aspects of the allowed rate of return*, April 2018, pp. 128; Frontier, *The market risk premium*, December 2017, pp. 64–66.

[87] AER, *Final decision SA Power Networks distribution determination - Attachment 3 - Rate of Return*, October 2015, pp.91,93,388–390; AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, p. 227.

	to help inform the point estimate derived from HER as long as they are applied consistently and symmetrically through time.[88]
A fixed MRP leads to unrealistic return on equity estimates in times of low interest rates[89]	Our assessment of the material before us is that there is insufficient evidence to suggest a relationship between the MRP and the risk free rate for reasons set out in the draft 2018 Guideline.[90] We have also noted previously that there is insufficient evidence of an inverse relationship between the risk free rate and the MRP.[91]
Institutions and regulators have adopted a stable return on equity as part of determining the rate of return[92]	We disagree with Frontier's submission. In considering other regulators' decisions, we are not aware of any Australian regulators adopting a stable return on equity. We do not give weight to estimates from foreign regulators due to differences in the risk characteristics of overseas energy markets arising from differences in regulatory frameworks, consumer demand patterns, geography, business cycles, energy market conditions and technologies.[93] We have also observed a lack of comparability and issues with international regulators when considering MRP estimates from other Australian and international regulators in the draft 2018 Guideline.[94] We have previously considered a decision by the Federal Energy Regulatory Commission (U.S Regulator) and why their decision regarding a stable return on equity from the DGM was not considered sufficient evidence as to justify a stable return on equity in our context.[95] We have previously noted that institutions and financial practitioners may have arrived at a more stable return on equity due to uplifting parameters or capturing risks not in the SLCAPM. We detail some of these uplifts in recent decisions, noting that at times they are made based on 'anecdotal evidence' or without explanation.[96] We consider, and have considered, these methods may be incompatible with our regulatory objectives and too ad-hoc for implementation for reasons outlined in the draft 2018 Guideline.[97]
The DGM provides a reliable estimate of the MRP and the AER is overweighting potential flaws[98]	We noted a range of flaws with the DGM in the draft 2018 Guideline such as analyst biases, wide range of possible long term growth rates, sticky dividends, inflation assumptions and dividend end reinvestment plans over-stating true dividend yields. This has reduced confidence in the model for producing estimates that can be used to inform the MRP[99] as concerns about the biases of the model and the divergent results from alternative versions of the model have increased.[100]

[88] AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp. 227–231;

[89] Frontier, *Estimation of certain aspects of the allowed rate of return*, April 2018, pp. 134–139; Frontier, *The market risk premium*, December 2017, pp. 70–75.

[90] AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp. 205–209.

[91] AER, *Final Decision SA Power Networks distribution determination - attachment 3 - rate of return*, October 2015, pp. 322–323.

[92] Frontier, *Estimation of certain aspects of the allowed rate of return*, April 2018, pp. 140–147; Frontier, *The market risk premium*, December 2017, pp. 76–83.

[93] AER, *AusNet Final Decision Rate of Return Attachment*, April 2017, pp. 94–95.

[94] AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp. 205-–209, 232–233.

[95] AER, *TransGrid Draft Determination – Rate of Return*, September 2017, p. 98.

[96] AER, *AusNet Final Decision Rate of Return Attachment*, April 2017, p.94.

[97] AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, p. 207;

[98] Frontier, *Estimation of certain aspects of the allowed rate of return*, April 2018, pp. 147–164; Frontier, *The market risk premium*, December 2017, p. 83–100.

[99] AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp. 215–223.

[100] AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp. 39, 216–222.

Table 3-5 AER consideration of reports on return on debt

Issues	Considerations
The guidance from the AER to derive the trailing average return on debt is quite detailed. However, the AER does not explicitly explain how it would treat cases where the BVAL curve is missing for a part of the averaging period.[101]	The draft 2018 Guideline includes contingencies for events regarding the use of third party data curves including those cases where certain curve/s are not published, temporarily or permanently. These contingencies are in clause 19 of the draft 2018 Guideline.[102]
In estimation of cost of debt, the business days are Australian business days (i.e., weekends and public holidays have been excluded) has been assumed.[103]	We explain that, in applying the draft 2018 Guideline, we define business day as 'a date on which the Reserve Bank of Australia (RBA) publishes Commonwealth Government Security (CGS) mid-rates'.[104]
In estimating the cost of debt, immediate transition to trailing average approach has been assumed [105]	In departing from the 2013 Guideline, our decision is to maintain a full transition to a trailing average for the reasons set out in the draft 2018 Guidelines.[106] We consider changing this approach will not contribute to the achievement of the national gas and electricity objectives. Further, our current approach on transition to the trailing average return on debt has been considered extensively in Australian Competition Tribunal and Full Federal Court decisions. The outcomes from these decisions reinforce our view that a revenue neutral transition is necessary to advance the NEO and NGO.[107]
Third party data providers – RBA and Bloomberg curves were used[108]	In departing from the 2013 Guideline, we have examined two new curves that came to our attention since we made the 2013 Guidelines, namely S&P Global and Thompson Reuters. We conclude that Thompson Reuter curve should be added for use in the implementation of return on debt approach[109].
Use of retrospectively updated third party data[110]	The draft 2018 Guideline provide under clause 19 that "revised or updated historical yield estimates must not be used to recalculate the allowed return on debt that has been finalised in any regulatory year"[111].
Switch from BFV to BVAL from 1 May 2014 onwards for the Bloomberg data. The AER has so far not committed to a position regarding the precise date for the switching, presumably because its guideline transition approach did not require one. The BVAL curve's intermittent availability (before 1 May	We note that Bloomberg ceased publication of the BFV curve in May 2014. However, it is not entirely clear if specifying a date for switching is needed at this stage as the draft 2018 Guidelines estimate a forward looking rate of return (including return on debt).

We recognise that third party data may be subject to data availability and have specified contingencies in the draft 2018 Guidelines to address changes to data availability.[113] |

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101 Frontier, *Estimation of certain aspects of the allowed rate of return*, April 2018, p. 210.
102 AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp. 371–374.
103 Frontier, *Estimation of certain aspects of the allowed rate of return*, April 2018, p. 210.
104 AER, *Draft rate of return guideline,* 10 July 2018, p. 15.
105 CEG, *WACC parameter estimates for Essential Energy*, November 2017, p. 8.
106 AER, *Draft rate of return guideline - explanatory statement,* 10 July 2018, pp. 329–337.
107 We explain further on the rationale of not adopting an immediate transition in our draft 2018 Guidleine, AER, *Draft rate of return guideline,* 10 July 2018, see pp. 330–335.
108 CEG, *WACC parameter estimates for Essential Energy*, November 2017, p. 8.
109 We examined the choice of third party data providers in detail in AER, *Draft rate of return guideline - explanatory statement,* pp. 352–357.
110 CEG, *WACC parameter estimates for Essential Energy*, November 2017, pp. 8, 19.
111 AER, *Draft rate of return guideline,* 10 July 2018, p. 14.

2014) and erratic nature (due to term structure issue) are concerning.[112]	We have assessed the BVAL curve[114] which was also assessed by the ACCC's Regulatory Economic Unit. We note that during the 2018 rate of return guideline review stakeholders submitted that the current curves (including BVAL) are well accepted and supported continued use of the curves.[115]
BBB curves were used to generate spread to swap estimates[116]	In departing from the 2013 Guideline, we have considered the implementation of the benchmark credit rating. We adopt a weighted combined use of broad BBB and broad A curves at a 2:1 ratio as the evidence and our analysis suggest it would better implement the benchmark credit rating of BBB+:[117] • We considered that some combination of broad-BBB and broad-A curves would provide the best fit to a BBB+ benchmark credit rating. Use of a 'broad-BBB' series alone will, other things held constant, overestimate the return on debt required for a BBB+ rated entity. Sole reliance on a broad-A curve will underestimate the return on debt required for a BBB+ rated entity. • Our analysis of credit ratings arrived at the 2:1 ratio which resulted in a closer match[118] with the actual debt instruments raised by service providers compared to our current approach.

113   AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, p. 372.
112   CEG, *WACC parameter estimates for Essential Energy*, November 2017, pp. 8, 18–20
114   AER, *Return on debt: Choice of third party data service provider issues paper*, April 2014, Section 4.3 & 4.4.
115   ENA, *Submission on debt paper*, May 2018, p4. SAPN-CitiPower Powercor United Energy AGIG, *Submission on debt paper,* May 2018, p. 2.
116   CEG, *WACC parameter estimates for Essential Energy*, November 2017, pp. 8, 16.
117   AER, *Draft rate of return guideline - explanatory statement*, 10 July 2018, pp.359-365, p. 460–462.
118   When term and date of issuance are controlled for.

C Confidential appendix (Averaging Period)