AER Draft Rate of Return Guideline

Initial network sector perspectives

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Initial perspectives

National energy objectives

“to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:

- *price, quality, safety and reliability and security of supply of electricity*
- *the reliability, safety and security of the national electricity system.”*

» Short versus long term – rate of return a challenge

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Network policy: a history of over-reaction

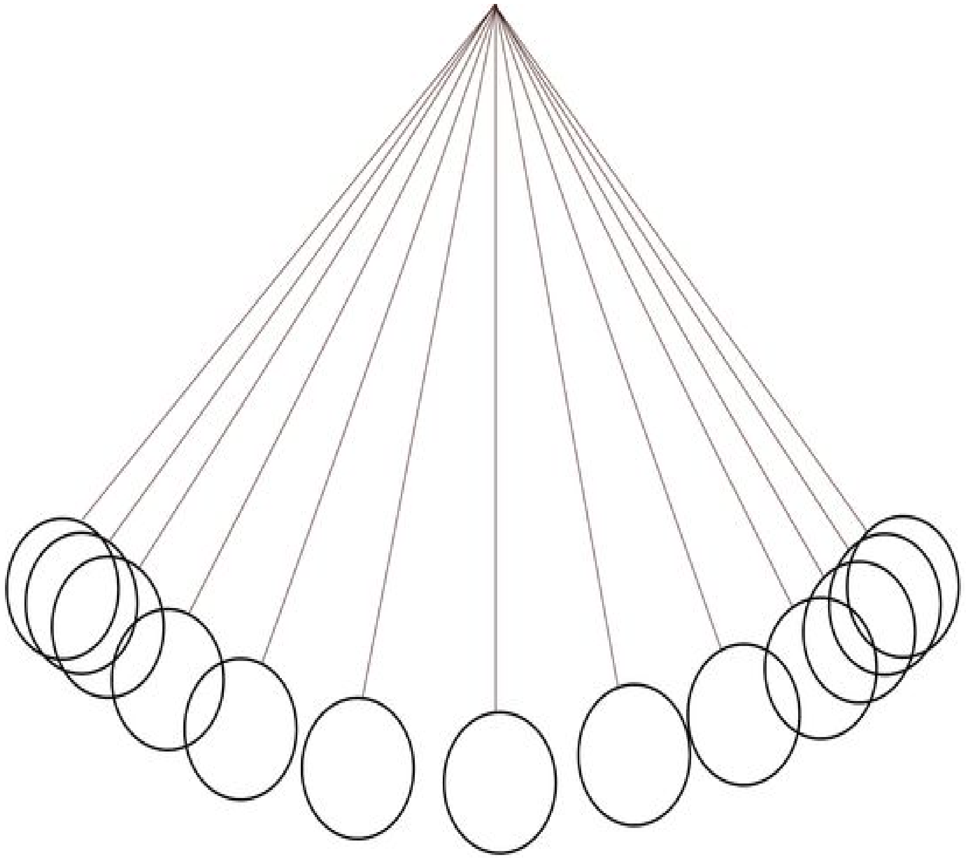
❖˜2000 major underspends

❖2006 new rules to encourage investment

❖2012 new rules to reduce spend and benchmarking

❖2017 LMR abolished

❖2018 Equity risk premium slashed



❖2003/4 blackouts in Sydney and Brisbane

❖2007-10 major increase in expenditure

❖2013-17
1) lower spend
2) appeal activity

❖Consequences?

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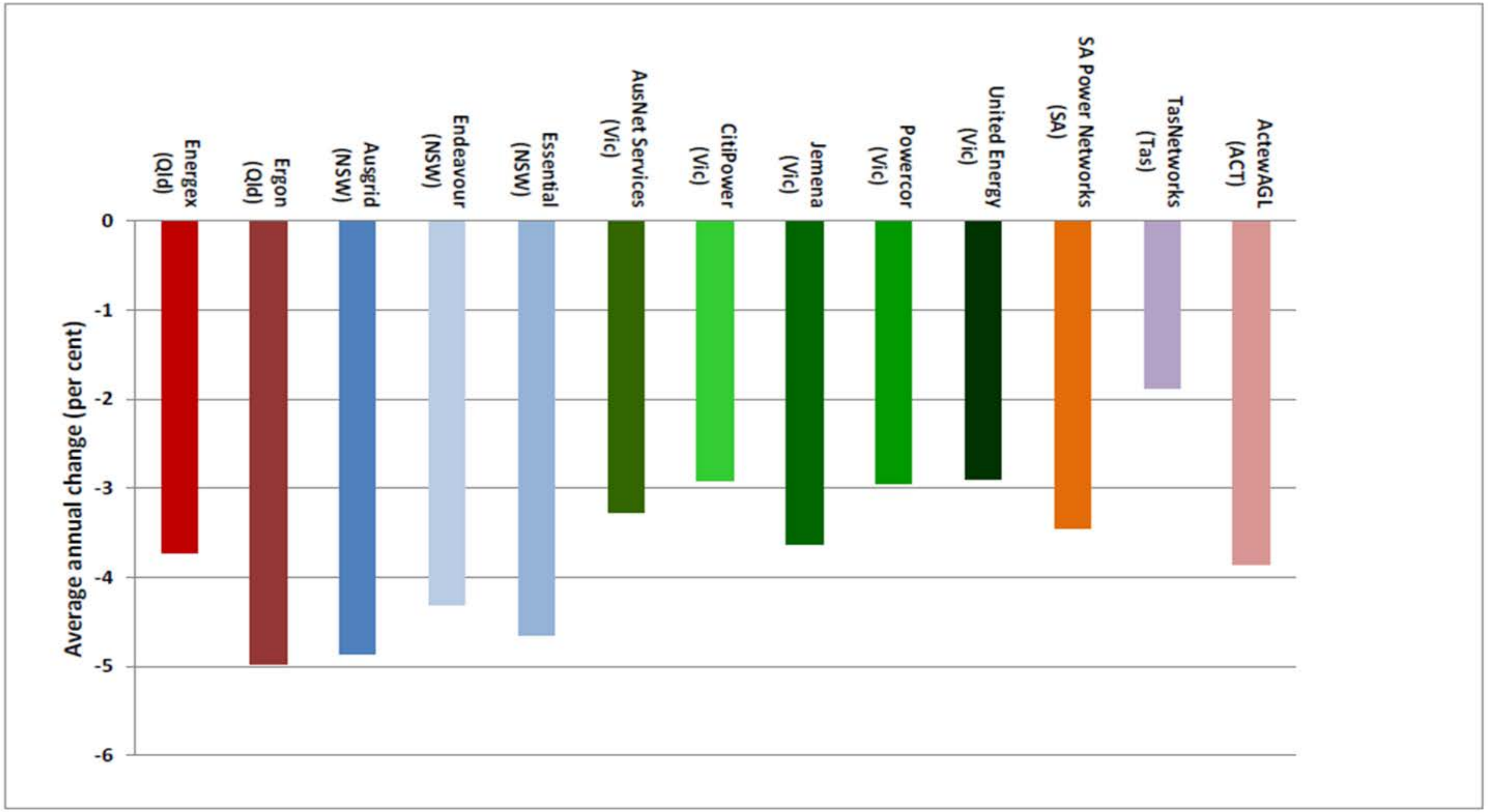
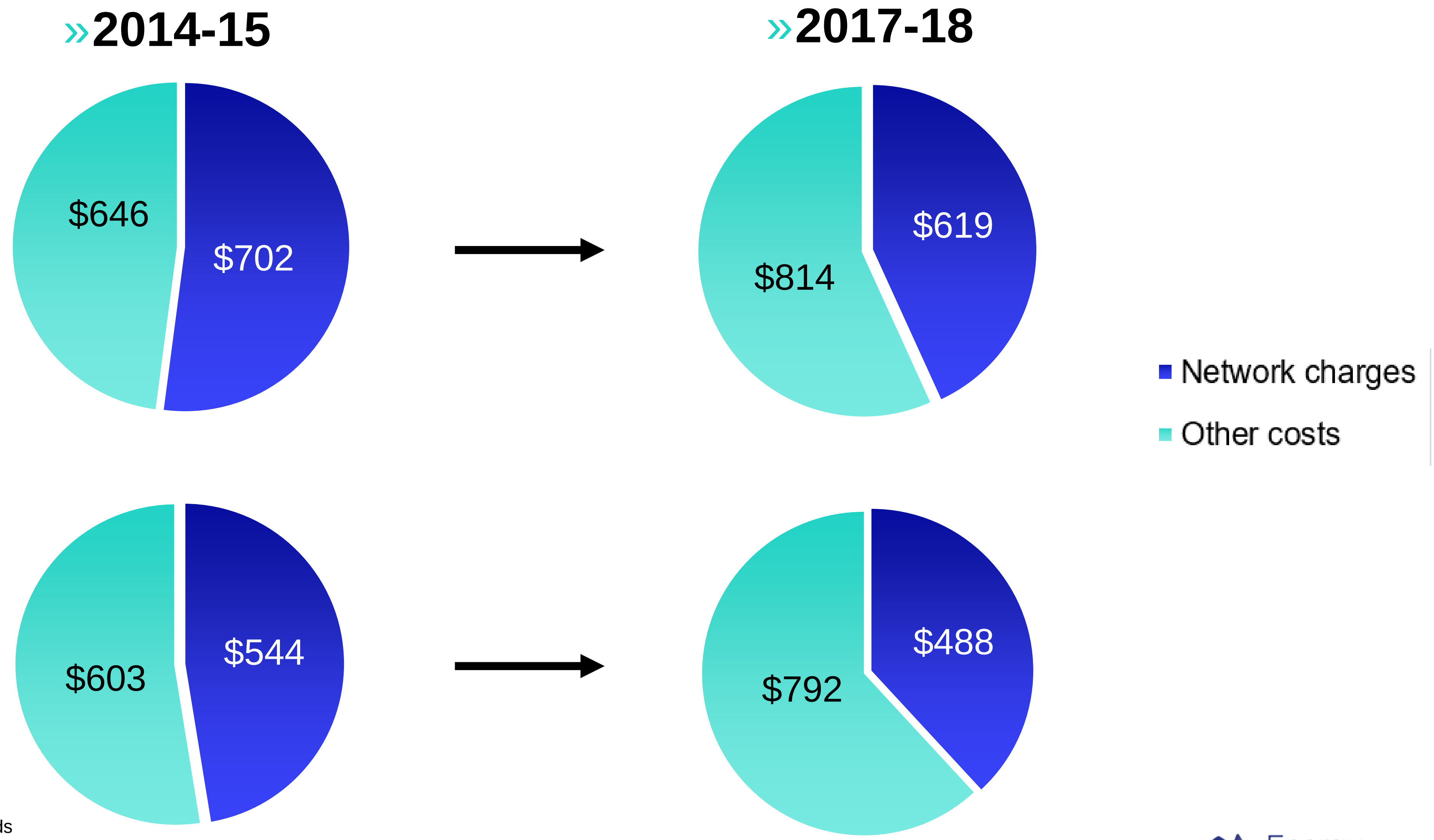
Recent changes in network charges



AER, Annual Benchmarking Report, Electricity distribution network service providers, November 2017, p.25.

Network charges are not the problem



» National

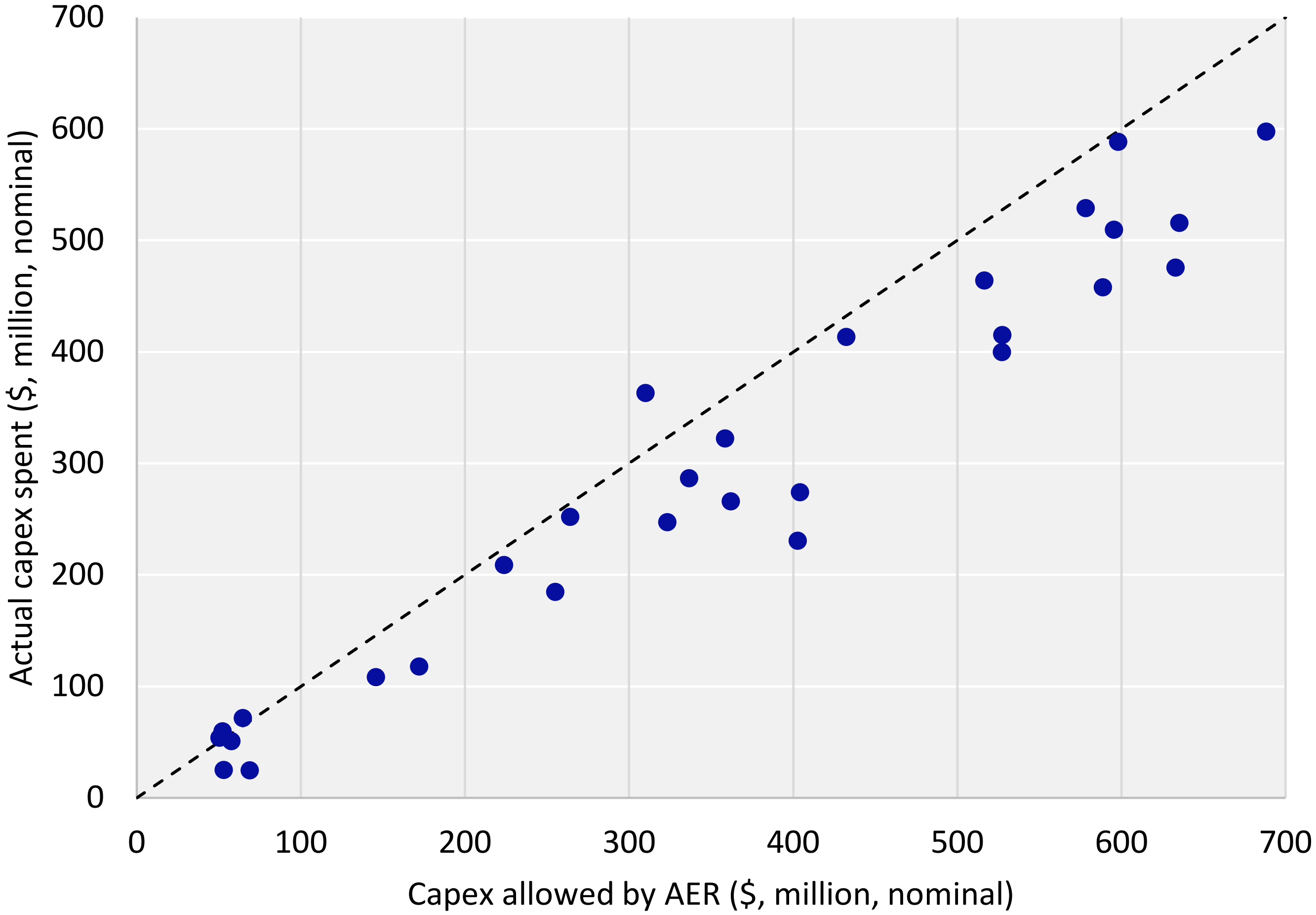
» Victoria

Victorian network charges include the unique costs associated with the smart meter rollout

Source: AEMC Residential Electricity Price Trends

There is no evidence of rates of return driving overinvestment

Allowed versus actual capex under the 2013 Guideline



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Where does this reasoning take Australian regulatory returns?

	Allowed equity risk premium	Source
AER – July 2018	3.60%	AER Draft Guideline
Commerce Commission (New Zealand)	5.51%	Cost of capital determination for disclosure year 2019 (Electricity distribution businesses and Wellington International Airport), April 2018
Ofgem (Great Britain)	5.83%	RIIO-2 Framework Consultation document, March 2018, Table 4; accompanying CEPA papers
Federal Energy Regulatory Commission (United States)	8.07%	Emera Maine v. Federal Energy Regulatory Commission, Case No. 15-1118, 14 April 2017; US government bond yield data obtained from the US Department of the Treasury

Notes: Equity beta used to calculate equity risk premiums allowed by Ofgem and New Zealand Commerce Commission have been re-levered using gearing of 60% to allow comparability; The real allowed return set by Ofgem was converted into nominal rates using an expected inflation rate of 3.2% recommended by Ofgem's advisers, CEPA; the equity risk premium allowed by FERC was calculated by subtracting from the prevailing return on equity allowance permitted by FERC the average nominal yield on 30-year US Treasury bonds (since FERC's practice is to use a 30-year term for the risk-free rate) over April 2018; the FERC return on equity decision is currently under review following an successful appeal (April 2017) by regulated businesses that overturned FERC's decision to lower the allowed return on equity from 11.14% to 10.57%.

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Key perspectives on draft guideline outcomes (I)

1. Until draft Guideline, we were encouraged by the new process
2. The cost of debt has been informed by a strong evidence-based process
   - » but where is the analysis of financeability of this decision?
3. Question how equity outcomes are consistent with a transparent, consistent and evidence-based process
   - » in many places, the outcomes seem disconnected with majority of evidence
   - » reasoning for not adopting joint expert evidence is concerning
4. Recent market evidence supports maintaining same values for return on equity, if not higher
   - » But equity risk premium (ERP) cut by 21%
5. Key cross check for lower ERP (link to Debt Risk Premium) is only a short-term check
   - » AER 2013: "we have expressed concerns about the comparability of credit spreads to equity premiums"

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Key perspectives on draft guideline outcomes (II)

5. AER decision will have significant consequences for current and future customers
   - not logical that largest ever single reduction in return on equity (around $400 million per year) will not trigger aggressive re-evaluation by network owners
   - not clear that the AER has undertaken analysis of the potential long-term consequences
6. Without significant movement in the AER approach the final guideline will not be ‘capable of acceptance’
7. A final guideline decision which continues to not take into account network sector evidence will be one entirely ‘owned’ by the AER
8. Independent Panel – “to promote confidence amongst stakeholders” – but sealed process?

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Overview of decision areas

ENA approach

- Coordinate networks position and approach through the review process
- Support of the AER position that should adopt an incremental review given the existence of current guideline and no changes in finance theory since
- Supported an objective of setting a rate of return guideline that is capable of being accepted by **all** stakeholders, on the basis that there has been:
  - adequate opportunity to participate in the review process;
  - a balanced and objective review of all evidence undertaken; and
  - positions reached that are evidence-based and clear.
- Networks are unanimously of the view that the draft guideline is not capable of being accepted, particularly in respect of the cost of equity and gamma

Context for the guideline review

*"Our approach under the **current Guideline has also been fully examined during our determination processes over the past three years and through a number of appeals to the Australian Competition Tribunal (Tribunal) and Full Federal Court. Given this history, we consider this review should seek to build on the current Guideline rather than start afresh**. There are a number of aspects of the current approach that are reliant on market data and empirical analysis, and this material would clearly need to be updated. **However, there are a number of aspects of the current approach that are driven by finance theory and available academic literature. We not aware of any significant new developments in this area that might warrant us taking a new approach**"*

– AER *Issues Paper*, October 2017, p.8-9

"No stakeholders submitted that we should review our foundation model approach. This is consistent with our position, accepted by all stakeholders that this review should be an incremental review. *In this context, we will update the relevant data and review new evidence so that our judgement can be exercised within the established approach to estimating the allowed return on equity. We consider that this provides the necessary certainty and predictability that stakeholders have said they value whilst allowing us to discharge our regulatory task in a manner that is most likely to contribute to the legislative objectives."*

– AER *Draft Guideline Explanatory Statement*, July 2018, p.39

Incremental review…with major change across the board

Parameter	Previous AER guideline (2013)	AER Transgrid (May 2018)	Consumer Reference Group joint submission	ENA recommended position*	AER draft guideline
Equity beta	0.7	0.7	0.3	0.7	↓0.6
Market risk premium	6.5	6.5	5.75	6.5	↓ 6.0
Equity risk premium	4.55	4.55	1.73	4.55	↓ 3.6
Gamma	0.4	0.4	0.9	0.34	↑0.5
Implied return on equity**	7.25%	7.25%	4.43%	7.25%	↓ 6.3%

* ENA noted that were AER to choose to change its previous beta and MRP estimates, estimates of market-based measures (following the approach adopted in the AER's 2013 Guideline) would tend to support an increase, not downward movement. **Based on 2.7% risk-free rate

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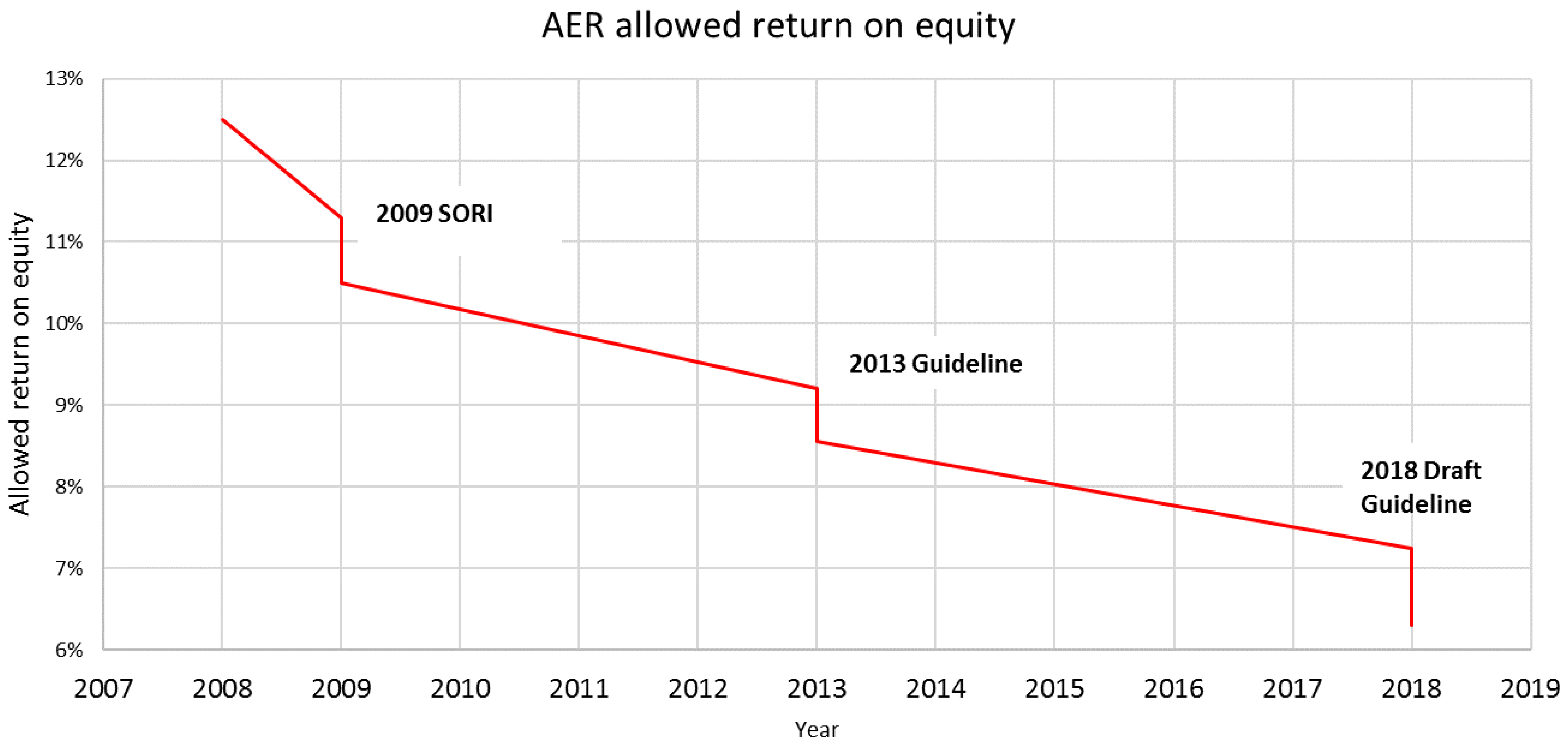
This is not the first guideline…but it has been the largest reduction



Example #1 - Foundation model and incremental review

"However, there are a number of aspects of the current approach that are driven by finance theory and available academic literature. ***We not aware of any significant new developments in this area that might warrant us taking a new approach****" (Issues Paper, p.9)*

» Networks have supported the AER position of undertaking an incremental review that is capable of acceptance:

– networks have taken a deliberate action of not re-agitating areas already decided (such as the Foundation Model approach)

– networks have not provided detailed expert reports on each possible area – given significant change in approach not anticipated.

» Draft Guideline jettisons the Foundation model and reverts back to a mechanistic Sharpe-Lintner CAPM:

– **neither the Black CAPM nor the DGM have any impact on the AER's return on equity estimate** (AER *Explanatory Statement*, p.200 and p.244)

– appears to be contrary to the policy intention of both AEMC and COAG Energy Council that weight be given to relevant models and evidence beyond the narrow Sharpe-Lintner CAPM.

Example #2 - Decision moves in the opposite direction to the preponderance of evidence: MRP and beta

<u>MRP</u>

- In its Explanatory Statement the AER notes that:
  - the historical excess returns evidence has increased since 2013
  - the AER’s DGM estimates have increased since 2013
  - survey estimates have increased since 2013
  - other regulators’ estimates have increased since 2013
- **However, the Draft Guideline proposes a material *decrease* in the allowed MRP from 6.5% to 6.0%.**

<u>Beta</u>

- The Explanatory Statement documents that the firm and portfolio beta estimates that were computed in 2013 have all increased since then, and that beta estimates over the past 5 years are materially higher than older estimates.
- This leads the AER to *increase* the upper bound of its range for beta – from 0.7 to 0.8.
- **However, the AER proposes to *lower* its beta point estimate again – to 0.6.**

Further examples – Unbalanced assessment of evidence

» **Agreed positions in joint expert report**: The AER has disregarded a number of agreed positions set out in the Joint Expert Report prepared by the independent convener on the basis that AER's own expert *may* have expressed some disagreement with that statement if the AER had allowed more time for him to consider it. (e.g. p. 247).

» **Low beta bias**: There is no dispute about the decades of evidence that actual returns on low-beta stocks are systematically higher than the SL-CAPM estimates. The evidence has been compiled by the most senior finance researchers including two Nobel prize winners. The Explanatory Statement rejects that evidence on the basis that it may have occurred by random chance (for decades, in all developed markets). Why then is *any* empirical evidence relied upon if it tells us nothing about the returns that investors require?

» **Geometric mean returns**: Experts (including Lally) explained that geometric mean returns have no place in estimating MRP because no compounding occurs in the AER's process. They pointed to a formal mathematical proof, not opinion. However, geometric mean returns appear to reduce the default MRP by a material 25 basis points.

» **Gamma**: The AER has materially changed its approach to estimating gamma. The methodology for estimating the distribution rate and theta have both been changed. The AER now uses the single highest estimate of each. The estimate of the distribution rate places 100% weight on 20 listed firms, no weight on broader sample. The exact opposite applies to theta.

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Need to consider future outcomes for consumers

"We aim to determine a rate of return and a value for imputation credits that will provide the appropriate investment incentives that will lead to neither over nor under investment in assets, and achieve an appropriate balance of sustainable long term consumer outcomes …This task is not one that can be undertaken mechanically. ***Instead, it is one that requires the exercise of judgement*** ***looking to future outcomes."*** –*Draft Guideline Explanatory Statement*, p.20

- AER decision states it has taken into account that consumer representatives have "clearly indicated" a "willingness to accept" a "higher level of risk" on rate of return and investment, "in exchange" for lower prices (p.28) – is this right?
  - If this statement reflects current consumer views, the AER must analyse impacts on the long-term interests of current and future consumers, and weigh and describe these risks in detail
- Potential future outcomes not analysed in draft decision
  1. A gradual 'stripping back' of services to standard vanilla network services
  2. Emergence of localised lack of capacity, resulting in constraints to consumers benefiting from DER
  3. Degradation of measured service and reliability outcomes over time
  4. Lack of capacity to meet consumer expectations for increased service levels

Unbalanced rate of return outcomes will deliver higher, not lower charges

- Consistent with the long term focus of the NEO/NGO, the real test for this decision will be outcomes for customers in 3, 5, and 10 years, which will be driven on impacts on confidence
- A decision that undermines confidence of capital providers will **push up bills for customers**, over the long term
  - capital providers increasing their risk premium on future finance by only 5 basis points (0.05%) would increase long term costs to customers by around $250 million over each regulatory period
  - ‘one notch’ downgrade (20 basis points) would potentially **cost customers over $1 billion**, pushing up bills not reducing them
- Reduced confidence would also impact networks capacity to make critical investments to support market transformation – connections, new grid functions, capacity for distributed energy

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Checklist on capable of acceptance outcome

- Have advocated an objective of setting a guideline that is ‘capable of being accepted’ and applied by stakeholders, which means:
  - providing repeated opportunities for stakeholders to provide input ✓
  - accurately reporting how the feedback has been taken into account ?
  - undertaking a balanced and objective review of all evidence ✗
  - evidence based, with changes in decisions being in line with changes in evidence ✗
- Recognise that for AER decision on cost of debt there is a strong contrast in approach, and has been informed by strong evidentiary process and engagement

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Appendix – Decision examples

Appendix 1 - Agreed positions of experts disregarded on beta

- The AER has disregarded a number of agreed positions set out in the Joint Expert Report prepared by the independent convener.
- On beta: experts did not consider evidence from delisted firms to be irrelevant, but that evidence from firms that have been delisted for over a decade is less informative than evidence from still-existing firms that includes data from the prevailing market conditions.
- Critical issue and networks consider that:
  - there is no reasonable argument against this proposition; and
  - this has been clearly conveyed by the Experts.
- Explanatory Statement (p. 247) rejects that evidence on the basis that AER's own expert *may* have expressed some disagreement with that statement if the AER had allowed more time for him to consider it
  - even though that expert reviewed the final Joint Expert Report and elected not to dissent from that statement.
- If the AER is able to disregard any expert evidence by suggesting its own expert may have formed a different view if the AER had allowed more time in its process, seems little point in holding concurrent evidence sessions and even less point in commissioning a joint report to document the outcomes.
- Inconsistent to emphasise that 'experts will always disagree' on cost of capital issues in giving and exercising discretion, and then effectively ignore those positions where there <u>has</u> been consensus between experts in a joint report.

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Appendix 2 - Failure to properly engage with evidence – low beta bias

» Empirical fact that actual stock returns have systematically and consistently exceeded the Sharpe-Lintner CAPM estimate in studies over more than 40 years and across all developed markets

» In the second concurrent evidence session, the experts outlined three potential explanations for this evidence:

1. **The effect is real** – Investors systematically price low-beta assets to earn a return above the SL CAPM and that shows up in the data. That is, the SL CAPM systematically understates the returns that investors actually require on low-beta stocks.
2. **The empirical evidence is unreliable** – However, experts noted that the evidence has been compiled by a Hall of Fame of finance researchers including a number of Nobel Prize winners, so this explanation was rejected.
3. **Ex ante vs. ex post returns** – It is possible that investors always expect returns to be consistent with the simple SL CAPM model, and have been surprised by the outperformance of low-beta stocks – over more than 50 years in all developed markets

» Explanatory Statement (p.277-278) appears to favor explanation (3) – that one cannot rely on observed stock market data because the average returns that are observed may differ from the returns that investors were expecting

» Decades of evidence from respected researchers documenting a systematic bias in the AER's preferred model needs to be ignored for this conclusion to hold.

» AER appears to say the data should be disregarded because the bias may not be a real effect, and may be just random chance – but this argument could be applied to *any* evidence that is inconsistent with *any* predetermined view.

Appendix 3 - Failure to properly engage with evidence - MRP

- In the second concurrent evidence session, a number of experts explained clearly that the AER uses the historical excess returns data to estimate the expected MRP in a setting where no compounding of returns occurs, and that this mathematically requires the arithmetic mean.
  - Experts explained that this is not a matter of opinion, but is the subject of a mathematical proof.
  - The AER's own expert, Dr Lally, has also advised that the arithmetic mean must be used, also providing a mathematical proof as the basis for that advice.
  - The Explanatory Statement also notes that AER experts Partington and Satchell agree that no compounding occurs in the AER process.
- However, the AER continues to have material regard to geometric means on the basis of an assertion that investors may compute compounded returns in some of the other calculations that they perform (p. 212).
  - A group of experts, including one of the AER's own experts, have provided a mathematical proof that the arithmetic mean must be adopted – because there is no compounding of returns in the AER's process.
  - On the other hand, there is an unsubstantiated assertion that investors may consider compounded returns for some **different** purpose.
  - Even if they do, it is irrelevant – its role in the AER's process **requires** that an arithmetic mean must be used in that process.
  - The Explanatory Statement (Section 7.3.2.2) does ultimately recognize that the geometric mean is inferior to the arithmetic mean as an estimate of the historical MRP, as used in the AER process.
  - Nevertheless, the <u>geometric mean continues to have a material impact on the AER's MRP allowance</u>. The mid-point of the arithmetic mean range is 6.25%, but the AER adopts a final estimate of 6.0% after considering geometric means.
  - No reasonable person could have left the concurrent evidence session with a view that geometric means have any material role to play in the AER's process (where no compounding of returns occurs).

Appendix 4 – Gamma

» Industry had heard the message from AER and consumers that gamma should be regarded as ‘settled.’

» Reinforced the surprise that AER had itself revisited gamma methodology and approach, effectively stepping beyond appeal and review outcomes.

» The highly contestable basis of evidence it has utilized to undertake this reinforces networks surprise at AER regulatory approach:

  – No evidence to suggest the 20 firm approach relied on by AER is superior to its own past approach.

» Networks now uncertain about whether all future gamma estimates should be regarded as provisional – appears inconsistent with the goal of actually settling the issue.