

# *Energy Network Regulation in Australia: Current Issues*

## Infrastructure Investment and Regulation Conference

Jeff Balchin

Principal

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## *Introduction*

The context for our discussion

The current issues in energy network regulation

- Capital expenditure forecasts and incentives
- Weighted average cost of capital and the GFC
- Institutional/governance arrangements

Closing remarks

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## *Context*

- Major review of the regulatory regime in 2005-2006
  - Institutional changes (AEMC, AER)
  - Re-write of the 'rules' for regulation, focus on stability/predictability to 'unlock' investment
- Emerging from the biggest shock to our financial markets since the Great Depression
  - Raised cost / difficulties of attracting capital – and created practical difficulties for regulators setting regulated prices
- Substantial use of new 'merit review' avenue
  - Positive outcome in all NSP appeals (and on most issues)
- Substantial increases in final electricity prices
  - All elements of the supply chain contributing – rising network charges (expenditure and WACC) is a key cause

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## *Reactions*

- Rise in the network prices has generated debate and reaction
  - Step-up of capex is inefficiency on a large scale
  - Rise in WACC has ‘overshot’ and overstates the cost of finance
  - But some commentators have suggested that regulatory decisions have overshoot and provide excessive returns
  - Merit review allows ‘cherry picking’ of decisions
- AER has proposed a series of rule changes to address concerns
  - More power to challenge forecasts, greater incentives for capex and discretion over WACC
- Number of other reviews are also in train
  - Statutory review of merit review brought forward
  - AEMC Review of distribution reliability standards
  - Independent review of distribution network efficiency

<http://www.ret.gov.au/Department/Documents/clean-energy-future/ELECTRICITY-PRICES-FACTSHEET.pdf>

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## *Forecasting capital expenditure*

- Assessing capex forecasts is one of the most challenging tasks for a regulator when applying the building block approach
  - Can vary substantially from year to year and decade to decade depending on a range of factors
  - Hard enough for businesses, even more for the regulator
    - NSPs get greater reward under efficiency incentives where the regulatory adopts ‘soft’ targets
    - Who takes responsibility for network performance?
- Less of an issue for opex
  - Use incentives (price cap and efficiency sharing) to reward efficiency gains
  - Use the ‘revealed efficient cost’ as the starting point, regulator’s task reduced to testing the ‘trend’ and ‘step’

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## *Issues in forecasting capex*

- AER's view is that the Rules limit its powers to properly test forecasts
  - Will be debate about the legal interpretation of the current regime and the practical effect of reasonably subtle changes
    - Critical factor is that decisions are based on evidence
  - Intent of drafters appeared to be use process to encourage accurate and substantiated forecasts and so assist the AER
    - Why has this not worked? Could it?
- Key focus needs to be on developing better capability and 'tools' for testing forecasts, using the maximum information and best techniques available
  - Complex task that will never be perfect

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## *Can incentives be used to help? – UK RIIO*

- Key feature of the UK electricity regime is ‘menu regulation’ for capex
  - Firms get to nominate their forecast, where lower forecasts get a greater share of efficiency benefits (i.e., incentive power)
  - The menu of choices are structured so that NSPs get the maximum payoff from providing a forecast that is ‘honest’
- Applied to distribution in 2005 and 2010 with higher incentive rates, and transmission from 2013
- Challenges remain
  - Requires a ‘regulator forecast’ to set up the menu of choices – techniques for determining a ‘baseline’ are required
  - High cost firms will not expect to recover cost, but ‘rent’ to low cost firms will be transparent – would this be sustainable?

## UK information quality incentive (2010)

	95.00	100.00	105.00	110.00	115.00	120.00	125.00	130.00	135.00	140.00		
Ratio of NSP : Regulator forecast	95.00	100.00	105.00	110.00	115.00	120.00	125.00	130.00	135.00	140.00		
Expenditure allowance	98.75	100.00	101.25	102.50	103.75	105.00	106.25	107.50	108.75	110.00		
Incentive power	52.5%	50.0%	47.5%	45.0%	42.5%	40.0%	37.5%	35.0%	32.5%	30.0%		
Additional income	3.09	2.50	1.84	1.13	0.34	-0.50	-1.41	-2.38	-3.41	-4.50		
Actual expenditure	90	95	100	105	110	115	120	125	130	135	140	145
	7.69	7.50	7.19	6.75	6.19	5.50	4.69	3.75	2.69	1.50		
	5.06	5.00	4.81	4.50	4.06	3.50	2.81	2.00	1.06	0.00		
	2.44	2.50	2.44	2.25	1.94	1.50	0.94	0.25	-0.56	-1.50		
	-0.19	0.00	0.06	0.00	-0.19	-0.50	-0.94	-1.50	-2.19	-3.00		
	-2.81	-2.50	-2.31	-2.25	-2.31	-2.50	-2.81	-3.25	-3.81	-4.50		
	-5.44	-5.00	-4.69	-4.50	-4.44	-4.50	-4.69	-5.00	-5.44	-6.00		
	-8.06	-7.50	-7.06	-6.75	-6.56	-6.50	-6.56	-6.75	-7.06	-7.50		
	-10.69	-10.00	-9.44	-9.00	-8.69	-8.50	-8.44	-8.50	-8.69	-9.00		
	-13.31	-12.50	-11.81	-11.25	-10.81	-10.50	-10.31	-10.25	-10.31	-10.50		
	-15.94	-15.00	-14.19	-13.50	-12.94	-12.50	-12.19	-12.00	-11.94	-12.00		
	-18.56	-17.50	-16.56	-15.75	-15.06	-14.50	-14.06	-13.75	-13.56	-13.50		
	-21.19	-20.00	-18.94	-18.00	-17.19	-16.50	-15.94	-15.50	-15.19	-15.00		

- If NPS believes it will need 120% of baseline, maximises payoff from forecasting 120%
  - Expected payoff of -6.5, incentive rate of 40%
- If firm actually spends 100%, it will make a payoff of 1.5 (=40% x (105-100) – 0.5)
- High cost firm (140%) makes a payoff of -13.5
- Low cost firm (95%) makes a payoff of 5.1

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## *Incentive to incur efficient capital expenditure*

- Incentive to minimise expenditure declines over the regulatory period, to zero at end (if regulatory WACC correct)
  - Limited incentive to optimise between opex and capex
  - Observation that NSPs tend to ramp up expenditure within a regulatory period
  - Perception that absence of incentive at end of period is causing “gold plating”
  - ‘Power’ depends on asset age (higher for shorter lived assets)
- Ascending objectives for a scheme
  1. Raise incentive in the last year(s) of the regulatory period
  2. Create a constant efficiency incentive over the regulatory period
  3. Align incentives between capex and opex and service incentives

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## ***AER Capital efficiency incentive proposal***

- AER has identified these problems and proposed a scheme whereby firms will be penalised if they overspend against the original allowances
  - If overspend against the original allowance then recover 60% of the overspend, but if underspend then recover actual capex
  - Recognised difficulties of undertaking ex post reviews
- Simple mechanism, but has a number of difficulties
  - Only firms expecting to overspend are subject to greater incentives – better incentive need for all
    - Efficiency means spending what's required, not spending the regulatory allowance
  - Asymmetry means that firms would not expect to recover efficient cost without an 'asymmetric' risk allowance
  - Scheme may create very high incentives in the early years

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## *Capex incentive schemes – a way forward?*

- The ESCV and ESCOSA both implemented capex ‘carry-overs’ mechanism, which deserve re-examination
  - The ‘efficiency benefits’ from reducing capex within the period were ‘carried over’ to ensure a constant incentive for efficiency
  - Ofgem applies fundamentally the same mechanism, although in a more flexible manner that allows choice of the incentive power
- Need to understand challenges with those schemes
  - Sustainability depends on credibility of forecasts (symmetrically)
  - Need to distinguish between discretionary deferrals of capex from one regulatory period to the next from avoided capex
  - Need to test the risk created – although additional risk management now measures exist



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## *WACC and the GFC*

- The GFC challenged two aspects of setting the WACC
  - Performance of the standard (and hitherto accepted) regulatory practice for the cost of debt declined
    - Became difficult to ‘observe’ the prevailing market cost of debt for long dated Australian corporate bonds
    - Went from ‘largely resolved’ to ‘very contentious’
  - ‘Locking in’ of some parameters but setting others at ‘spot rates’ created the real potential for a very low cost of equity at times that intuition suggested it had risen

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## *Cost of debt during the GFC*

- Prior to the GFC we simply observed Australian corporate bond rates, and this was written into the Rules
  - Simple, acceptable to all parties, a benchmark, avoided potential inconsistencies
- This simple method broke down during the GFC – and the AER has asked for flexibility to determine a new method
  - Previous practice had strengths – whether it will work again (post-GFC) needs to be analysed thoroughly
  - But using benchmarks for financing decisions has been a key strength of our regulatory regime – if the old benchmark is disbanded, then the task is to define a new benchmark
- An issue the AER has not raised is whether we should continue to reset the debt risk premium for all debt at a price review
  - The use of a ‘spot rate’ exacerbated issues with the GFC
  - Should the premium be based on a benchmark rolling portfolio?

## *Cost of debt during the GFC: UK vs. Australia*

### **United Kingdom**

- Bond issuance continued in much deeper markets
- UK utility debt was very long term at time of GFC, 88% of utility debt maturing after 2020
- Bond margins increased, returned to near pre-GFC levels by the time Ofgem its next decision (late 2009)
- Ofgem has formally adopted a rolling portfolio

<b>Final Proposal</b>	<b>1999</b>	<b>2004</b>	<b>2009</b>
	<b>(%)</b>	<b>(%)</b>	<b>(%)</b>
Real risk free rate	2.25-2.75	2.25-3	2-2.5
Cost of Debt	4.3	4.1	3.6
Cost of Equity	6	7.5	6.7
Gearing	50	57.5	65
<b>Vanilla WACC</b>	<b>5.2</b>	<b>5.5</b>	<b>4.7</b>

PwC

### **Australia**

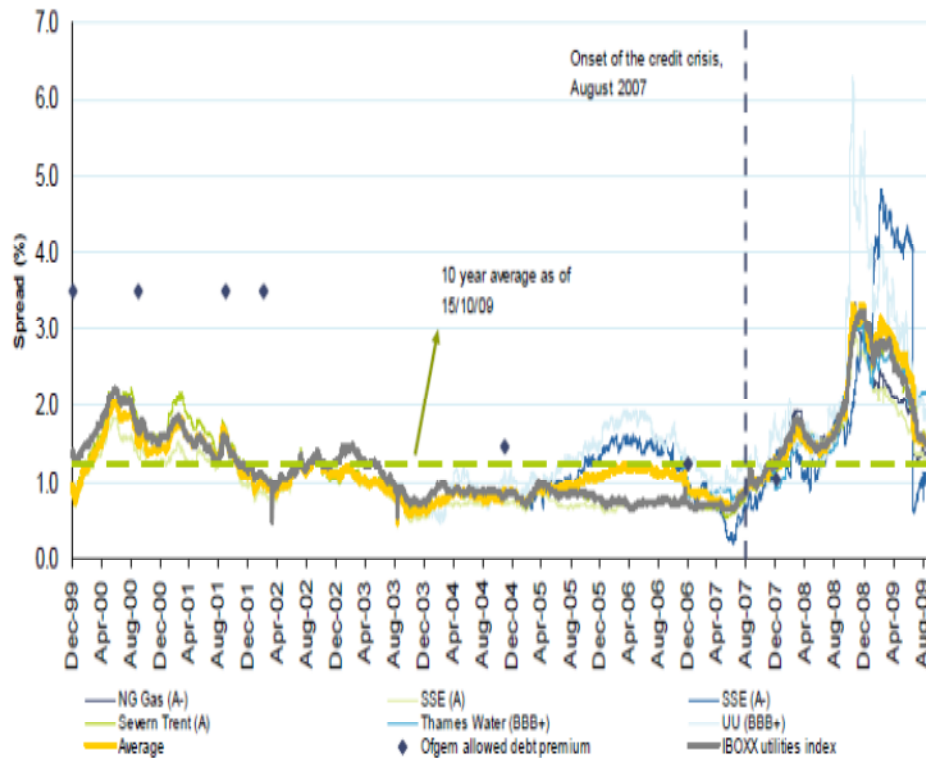
- Bond issuance suspended in domestic market, switch to:
  - Short term bank debt
  - Overseas (especially US PP market, which opened from March 2010)
- Evidence that yields rose substantially and have remained higher than pre-GFC levels
  - But absence of issues and secondary market trade created uncertainty about the current yield

15

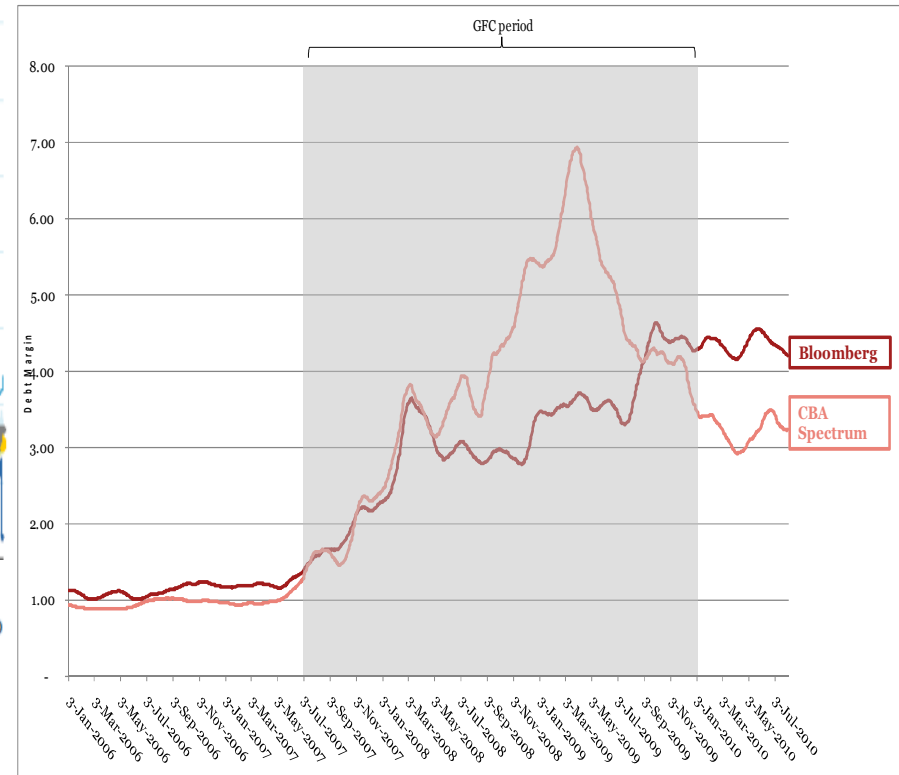
*What would you like to grow?*

# Spreads during the global financial crisis

## United Kingdom



## Australia



Sources: PwC UK (December, 2009), p.65, based on Datastream, and PwC Australia, using Bloomberg and CBASpectrum

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## *Cost of equity and the GFC*

- For the cost of equity, the Rules mandate a formula (CAPM) and most of the inputs
- Normally, prescribing such a formula and standard inputs would be a reasonable approximation
- But during the GFC, it predicted a sharp drop in the cost of equity – when all intuition suggested investors’ required returns were rising
  - The ‘solution’ may be complex and debated – but the wrong answer of all is simply to ‘crank the handle’
- The AER has proposed increasing the extent to which WACC parameters are locked in between reviews
  - Essential for the Rules to provide a ‘safety valve’ to allow (require) the AER to ‘road test’ the WACC at reviews

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## *What does “regulatory discretion” mean in Australia?*

- The electricity regulatory regimes *appears* highly prescribed, leaving the regulator with much less discretion than overseas regulators or their former state equivalents
- That analysis is overly simplified – our institutional arrangements for energy are unique in Australia (and possibly the world)
  - The *traditional* regulatory discretion is exercised by two institutions in combination – the AEMC and AER – the former when making rules and the latter when making decisions
  - Good regulators make commitments about how discretion would be exercised in the future (critical for incentive regulation) – this is what the AEMC does when it makes rules, and those rules can be changed expeditiously, without navigating the political process
- Real issue – what can and should be the subject of long term regulatory commitments
  - How can the benefits of our unique institutional regulatory arrangements be maximised

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## *What is the merit of merit review?*

- Review mechanism was purposely designed to be low cost and expeditious
  - Limited only to matters raised, on information before the regulator, hurdle must be met and onus on appellant to demonstrate error
- Cannot expect Tribunal to settle important regulatory policy issues, proper role:
  - a safety valve for appellants to allow material errors to be challenged
  - to provide pressure on the regulator to perform
- Is the extent of the AER's losses – and dominance of NSPs in appeals – an indication that the review process is flawed?
  - Complex matter – what has been appealed?
  - Is dominance of NSPs necessarily problematic? Has there been 'cherry picking'?
    - Are regulatory errors expected to be symmetric?
    - Hearing only part of a case is not flawed – the building block approach involves making many constituent decisions and summing to a whole
    - Can we afford complete re-hearings?
    - Better resourced customer advocacy would be a clear improvement

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## *Concluding remarks*

- Energy network regulation is under the spot light like never before (again)
- Forecasting and incentives for capex are the ‘Achilles Heel’ of building block regulation
  - Need an informed debate on how to improve forecasting, including exploration of incentive schemes
  - Capex incentives need strengthening - but needs a considered solution
- The GFC created two problems for the WACC
  - Benchmark cost of debt is essential – a rolling portfolio?
  - Need a safety valve for fixed WACC parameters
- Institutional arrangements
  - ‘Prescription’ and ‘discretion’ needs to be considered in the context of our unique institutional arrangements
  - Merit review has an important role – better customer advocacy would be an improvement

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# *Thank you*

## *Contact details:*

Jeff Balchin

Principal

PwC Australia

Office: +61 (3) 8603 4973

Mobile: +61 412 388 372

Fax: +61 (3) 8613 5575

[jeff.balchin@au.pwc.com](mailto:jeff.balchin@au.pwc.com)

<http://www.pwc.com.au>

