Reliability Settings

Presentation by

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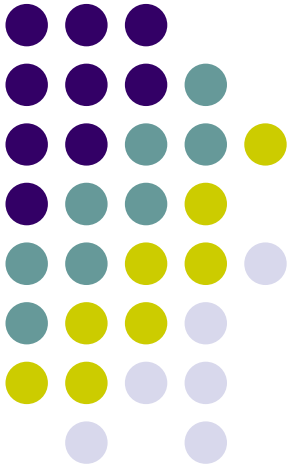
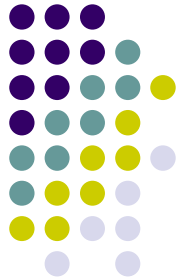
12 Feb 2010

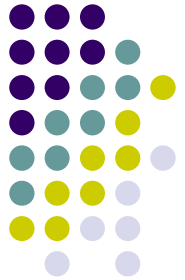


Agenda



- Key challenges (then and now)
- Industry overview
- Investment and risks
- Broader issues to be addressed
- MPC/CPT in context
- Immediate issues to be addressed

Key challenges in the 1990s

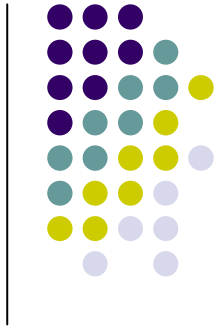


- Large over investment in generating assets by states.
- Little or no interstate trading of electricity
- High cost of operations and maintenance
  (high employment, non-business related areas etc)
- Poor plant performance by world standards
  (low availability, high planned and forced outage rates)
- Scarcity of capital hampered further construction
  (no new debt policy in Vic etc)
- Political climate favoured microeconomic reform and market based solutions (COAG/ Hilmer)
- NEM delivered many benefits and lights have stayed on, unlike some overseas experiences (California a prime example)

Key challenges in the 2010s

- Environment
  - Deliver the 20% renewable generation target
  - Reduce CO2 intensity in line with yet to be agreed climate change policies
- Operation
  - Changing plant mix will challenge market operation
  - System inertia (replacing coal fired plant with low inertia plant)
  - Standby generation needed to firm-up wind
  - Increased network congestion
  - Accommodating distributed and micro-generation
- System adequacy - investment
  - Meeting supply demand balance
  - Replacement generation under a potential ETS, and other climate change policies?
  - Need to attract private capital
  - Financing new projects post GFC in the face of climate change policy uncertainty is increasingly challenging
- Infrastructure to underpin generation
  - Develop efficient **transmission and distribution infrastructure**
  - Provide efficient **gas infrastructure**
- Economically efficient outcomes from customers perspective

Industry overview

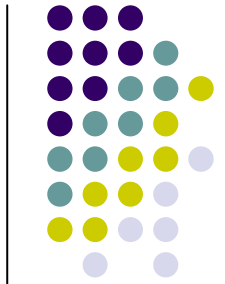


- Has some $120 billion in assets
- Employs around 52,000 people
- Contributes $14.5 billion directly to the nation's GDP

- Generating assets are lumpy, capitally intensive and have long asset lives (25-50y)

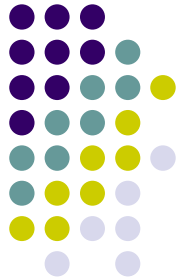
- Energy sector capital requirement – next five years
  - Refinancing - networks $29 billion
  - Refinancing - generation $19 billion
  - Capital expenditure on existing & new generation assets $18 billion
  - Capital expenditure on existing & new network assets $31 billion
  - **Total** **$97 billion**

Risks from an private investors perspective



- Market risks are expected
  - Competition and new entrants
  - Technology
  - Fuel supply and costs
  - Economy
- Transmission risks are not
  - Bearing risks which we have no ability to control
    - How much product to the market? At what cost?
- Policy risks are not expected at current levels
  - Impacting supply/demand and plant mix
  - Market intervention by regulators and governments
  - Impact of demand energy efficiency
  - Subsidised technologies forced into the market (RET, Gas scheme, GGAS)
  - “Subsidised fuels” (domestic gas)
  - ETS will change the economics: permits and SRMC

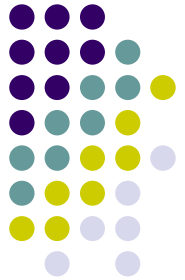
What's needed for timely investment in generation



- Reasonable prospect of earning adequate returns on investment over time
- Acceptable/manageable level of risk
  - This includes a need for a stable regulatory regime
- Essentially a competition for “fleet footed” capital
- Some of the risks
  - Reasonable expectation of ongoing transmission access to reference node
  - Permitting – timely, reasonable conditions
  - Physically achievable (EPC timeframes)

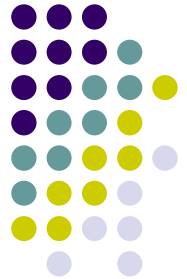
- Broader issues and role of the MPC and CPT…..

Broader urgent issues to be addressed



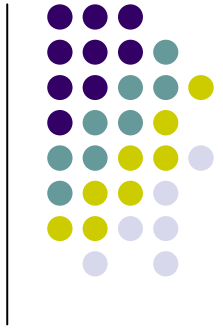
- Assess the ability of the current market form to meet the reliability criteria in the face of a range of policy interventions/initiatives (RET, ETS, energy efficiency initiatives, gas schemes etc).
  - Refer CRA advice to Reliability Panel 2007 – current (EOM) market form requires **undistorted environment**
  - Inertia is necessary for system reliability but is not explicitly valued by the current trading arrangements
  - No market cap triggered when market operation outside market design (FM)
  - Risks to investors from the current transmission arrangements
  - Uncertainty over Carbon policy and its impacts on existing and prospective investments

Role of MPC in the investment context



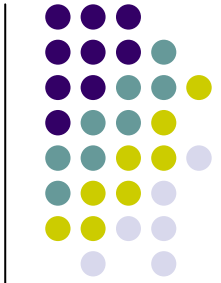
- Only a single element in a complex picture ..
  - If the MPC is too low, it may prevent very low capacity factor plant earning adequate revenue
  - However once high enough, it doesn't mean that investment will occur
    - So it can be thought of as an necessary but not sufficient condition for investment
  - The RP/AEMC analysis has not demonstrated that the MPC increase would have benefits that exceed the costs
  - MPC is only one of many factors considered in investment decisions
  - Increase in volatility/uncertainty of revenue will attract higher WACC (12%+ for OCGT), thus making plant more expensive
    - The MPC modelling appears to be driven by a few "rare events" which concentrate value into a very **small number consecutive hhs**. This must to be analysed and tested for reasonableness.

CPT



- The role of the CPT is to manage risk in the market
  - (Ref NECA VoLL review 2005) –
    - "…the CPT as the primary codified mechanism for capping risk";
  - Limit the duration of high price events beyond what is needed by the market for effective signalling
  - Limit risks to participants in the absence of market FM clauses – protect financial stability of the sector.
- Question the direct linkage to the MPC suggested by ROAM
- More robust assessment needed to justify any CPT recommendations
  - The CPT tested by ROAM appear inconsistent with the MPC modelling and market rule change maybe required (separate analysis and submission)

RP to address before the final decision



Increased costs and inefficiencies need to be considered:

- Other sources of revenue (contract etc) and other reasons for investing
- Increased risks of transmission constraints on generators
- Potential withdrawal of capacity from the contract market in response to the additional risk
- Increased end user tariffs – Do the benefits to reliability delivered by the change exceed the costs to consumers?
- Impacts on retail competition as prudential requirements, and hedging costs increase capital barriers in the industry
- The OCGT costs used in the modelling exclude gas infrastructure and unrealistically low level of WACC (6.58% vs 12%+)

The panel analysis should factor in all these costs to ensure that the cost of meeting reliability are minimised