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Changing Electricity Markets and the Need for Flexibility

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International Electricity Markets

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- They are all different
- They are all changing
- No one model is perfect

This has very particular implications:

- We can learn from other peoples' adventures and mistakes
- We will not get it right first time
- Change and flexibility are required

Electricity Markets in Australia

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- Like everywhere – markets in transition
  - Every state (region) has its own challenges
- We separated the value chain to create competition
  - Generation
  - Transmission
  - Retail trading
  - Distribution
- Some of it is now coming back together again
  - This has implications for strategy, flexibility and systems
- Ownership – we have almost every model in one country:-
  - Government own some companies
  - Private sector own some companies
  - Some companies and assets share Government and private ownership
  - Some private companies are listed on the stock exchange, some are not
  - No Government companies are listed on the stock exchange

California – Was a Wake up Call!

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Australian and Other Energy Markets Have Real Choices

<u>California</u>
Market failure expensive, energy investment lost

Learn from markets that work better

Deploy the best principles

Ensure focus on cheap, reliable energy to keep investment and jobs

No markets are perfect

Have We Lost Sight of Market Goals?

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The Australian National Generator Forum (NGF) needed to re-state the goals:-

- Deliver a cheaper, cost effective and reliable supply of energy (through competition)
- Promote investment in appropriate energy facilities to ensure the above is achieved
- To encourage new investment in industry and commerce through economic and reliable supplies of electricity

The market is not an end in itself

The Market We Would Like

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- Market rules, physical capacity for generation, transportation, and environmental legislation clearly defining the market opportunity
- Gas and electricity markets converging
  - Physically, for trading and for risk management
- Investment confidence through:-
  - Stable market rules (not perfect rules)
  - Clear Government policy
  - Clear policy for (market) cost recovery
- California provides one unique opportunity to focus

The Market We Have in Australia

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- Market achievements have been miraculous (partly because of oversupply)
  - More later
- (Too) Many rules are in transition (nodal markets, cost allocation, legislative and environmental reviews etc.)
- Transmission interconnection between the states (eg regions) is directionless
- National Generator Form (NGF) market study highlighted key market requirements for success:-
  - Market deployment needs to be led – market ‘Bus’ must have a driver
  - Decision making processes must be quick, efficient and transparent, and
  - Participants must be involved

  These factors are not completely present in Australia
- Private and Government owned utilities have to recognise Governments’ legitimate role in these markets and work with them

Market Deployment - The Good

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The Good:-

- A very stable market start (with oversupply in most States)
  - This is changing in each state
- Costs are significantly lower after re-alignment and restructures
- Greater company staff alignment to margin/value creation as a key goal
- Greater transparency in market drivers
- Market rules can provide better (not perfect) signals for investment
- Large industrial users have seen significant reductions in electricity prices

Market Deployment - The Bad

The Bad:-

- Domestic consumers have not seen significantly lower prices
- Customers very confused by the next steps
- Public and Unions not convinced
  - that open market processes will deliver the benefits (waiting for a California here or the next one) and
  - that there are processes to manage employment transition
- There was an expectation of perfection rather than planning for imperfection
- Private sector investment is hesitant as a result
  - Provokes an important role for Government

Market Deployment - The Ugly

The Ugly:-

- No ongoing Leadership of the market transition - no ‘driver in the bus’
  - Leadership is split between competing (government) agencies
  - Better role definition is needed
- Market rules are being applied as if all international markets are the same (Australian maximum demand is 29000MW)
  - They are not!
- Market rules are changing faster than the participants, Government and the publics’ capacity to absorb them
- Accountability and redress processes are tortuous and unclear
- Interstate transmission (interconnection) does not have a home

Several Key Reviews Underway

- COAG (Council of Australian Governments) review of energy markets
  - Electricity and Gas are included
- MRET (Mandated Renewable Energy Targets)
  - Review is due end of this year for legislation sometime the end of next year

Issue – we cannot hold up investment decisions until the world is quiet and stable!

-

So we make investments with strategic flexibility in mind

Market Maturity - We are learning

- Market participant behaviour is changing
  - due to learned competitive behaviour, improved experience and trading competence
- Shift in bargaining power is detectable
  - Due to tighter demand / supply and resulting higher prices
  - Unstable rules are not helping
- The National Electricity Market (NEM) is now maturing but there are risks
  - Price recovery in wholesale pool and contract markets in Victoria/New South Wales/South Australia
  - Participants getting better at taking advantage of the existing rules
- Flexibility in planning, strategy, people, fuels and systems are key elements of coping with this change

Re-Positioning - Generator Issues

- A generator's market position is derived from:-
  - Prevailing supply/demand balance in the market
  - Gross MW size, portfolio structure and positioning
  - Fuel type, availability and terms of supply
  - Who else they are working with in the value chain
  - Portfolio generators (multi site, multi fuel, multi region) have a clear advantage
- Modelling in Australia suggests stand alone critical mass in our small markets is about 4500 MW
- Generators are coming to understand 'price maker' or 'price taker' alternative strategies
- Competitive tension is now between wholesale vs retail (generators vs retailers)
- Flexibility in strategy, people and systems is an important requirement

Re-Positioning Issues – Other Participants

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- Transmission
  - How do we ensure that they have incentives to operate the infrastructure to the benefit of other participants, as regulated return entities?
  - This requires a major change in (historic) outlook
- Retailers
  - Critical mass required is greater than 2 million customers
  - Competition is now intense
  - Vertical integration with generation is now occurring
- Resources (gas)
  - Gas companies have an effective stranglehold in small markets
- Achieving overseas private sector involvement in market exposed segments
  - The current and uncertain world economic environment presents a challenge

Risks to Stable Outcomes

(Manageable if you recognise and adapt to them)

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- **Market failure (real or perceived) eg: lights going out**
  - Strong perception by the Public and the Unions is that the failure is real
  - If failure occurs, politicians will (and have to) take charge
- **Lack of emphasis on transmission constraints in small markets**
  - This is the transport system – (what other products have transport constraints)
- Market critics not being countered in the media – it was not fashionable
- Individual groups with force of resources not argument
- Inability of any one class of participant to migrate to economic critical mass
- World and Asian economic recession
- Retreat to the lowest common denominator – forced regulation

Australia can avoid a California!

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Conclusion

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There is unprecedented and unpredictable change in energy markets around the world:

- •Be especially nice to customers - we need them
- •Be nice to our people - they are our business
- •Be profitable, its safer that way
- •Be clean and green, our stakeholders expect it
- •Be everywhere to know what's going on
- •Be nice to politicians - they 'own' the markets
  - We have to help them
- •Be very very flexible and adaptive - it's a changing world

Flexibility in structures, people, planning and IT and other systems is very important

Questions are welcome

Supporting Information

Market Institutions

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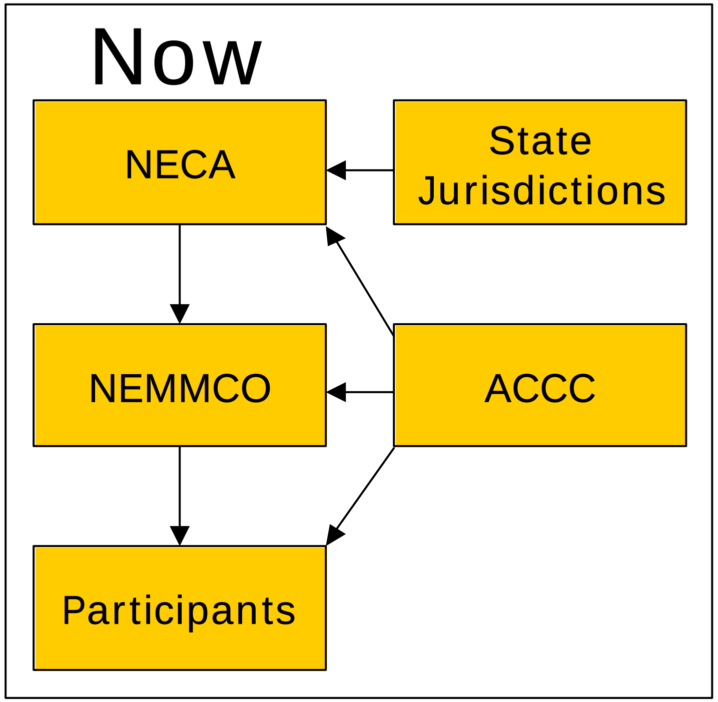
- NEMMCO (National Electricity Market Management Company) operate the market
- NECA (National Electricity Code Administrator) administer the Market Code
- ACCC (Australian Competition and Consumer Commission) role is becoming increasingly unclear
  - Federal Government has bowed out for now (got off the bus)
  - The roles are unclear
- There is some tension between State and federal Government on energy policy and planning



Small Markets - Smaller Interconnectors

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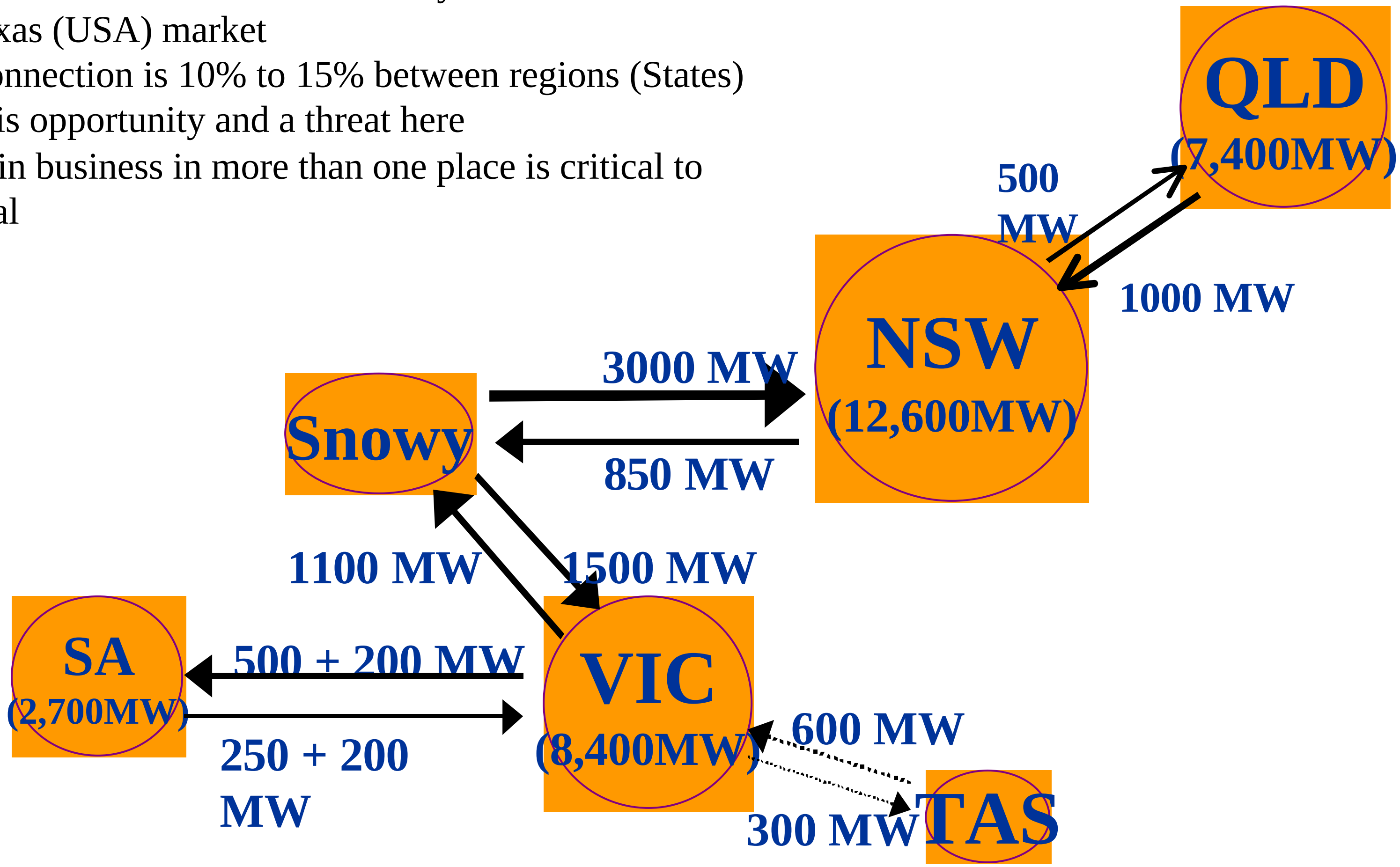
- Australia's interconnected electricity market is half that of the Texas (USA) market
- Interconnection is 10% to 15% between regions (States)
- There is opportunity and a threat here
- Being in business in more than one place is critical to survival



Re-Positioning along the Value Chain

- Retailers are re-positioning for economic scale
  - Origin/Powercor
- Retailers active in several National Electricity Market (NEM) regions (ie. Companies like AGL, Origin, Pulse)
  - Moving to between 5 & 8 major retailers of energy who will operate across South Australia, Victoria, New South Wales, Australian Capital Territory and Queensland
  - Most will retail electricity, gas and other services
- Market power is shifting
  - New integrated participants will have significant purchasing power for wholesale energy commodities

Environmental Initiatives are Important

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- **There are many initiatives:-**
  - The Renewable Energy (Electricity) Act (and now the Mandated Renewable Energy Target Review or MRET)
  - Environment Protection and Bio-diversity Conservation Act and triggers
  - Greenhouse Gas Emissions Trading and permit allocation
  - Queensland renewables and gas legislation
  - National Greenhouse Gas Inventory
  - Generation Efficiency Standards
  - Greenhouse Gas Abatement Program and early action
  - Greenhouse Challenge
  - National Pollutant Inventory
- **But they have a critical effect on viability**
- **Scope, clarity and timing are everything**