

The National Electricity Market 25 years on: outcomes and prospects

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Outline

- 1. Context: how was the creation of the NEM justified ?**
- 2. Outcomes: what has the NEM delivered (in wholesale markets, transmission and distribution) ?**
- 3. Judgement: what do policy-makers (governments) actually think of the NEM (judging by their recent decisions) ?**
- 4. Summary of the main points.**

Context

- ▶ ACCC's 1996 Authorisation of the National Electricity Code: Competition (in an interconnected "national" market) would promote efficiency in production, resource allocation and investment; it would reduce costs and align tariffs and prices with costs.
- ▶ The Industry Commission's said this "reform" would increase national income by 1.4%, the largest single benefit associated with the Hilmer reforms.
- ▶ Benefits would arise in two ways:
 - reducing generating reserve of generating plant in each region "*by sharing between jurisdictions better management of non-coincident peaks*";
 - (noting that electricity is difficult to store) "*interconnection between systems based on different technologies can make better use of existing generating capabilities and therefore increase flexibility and reduce costs*" (Australian Competition and Consumer Commission, 1997, p. X).
 - But, ACCC said benefits would depend on competition and effective regulation of networks
- ▶ What can we say about how it has worked, 25 years later?

Wholesale markets - outcomes

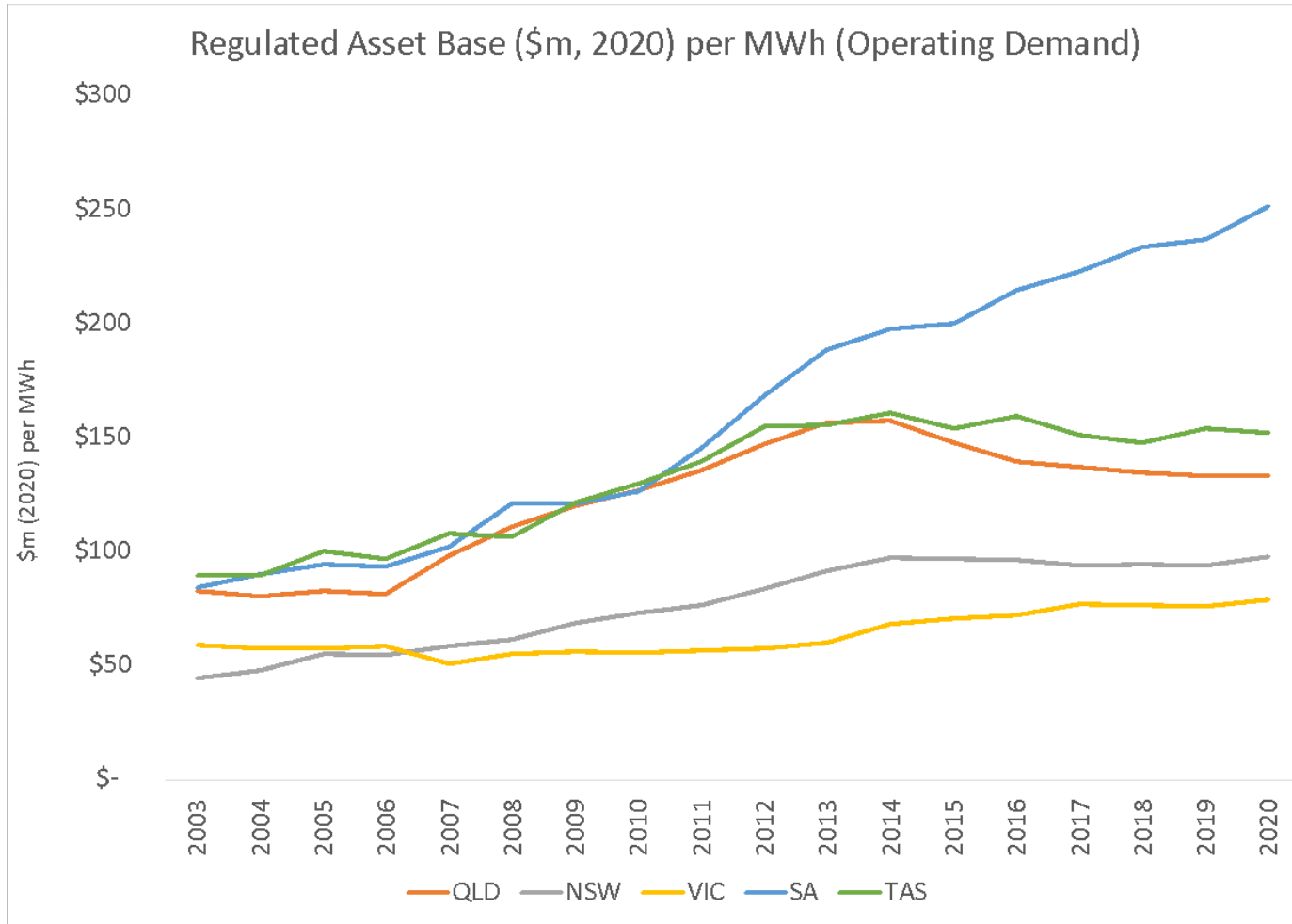
- ▶ Prices have not declined & aggregate grid demand barely changed since NEM started
- ▶ Investment driven by government policies since the start of the NEM: Coal (Qld) up to 2006; Gas (mainly Queensland) from 2005 to 2010; Renewables (since 2010, increasing over the decade)
- ▶ 10 years after the market started, policy makers thought it was working well: “*Australia is respected internationally for its past reforms in energy with these reforms producing one of the most competitive and efficient energy sectors in the world*” (Scales et al., 2007).
- ▶ 20 years later governments came to a different view and have ramped up direct intervention: *Hornsdale + diesel generators in SA (2017); VRET1 (2018), Snowy 2.0 (2019), VBB (2020), NSW Roadmap (2020), Kurri Kurri (2021), VIC OSW (2021), VRET2 (2022), Victoria Storage Target (2022), Queensland Energy and Jobs Plan (2022), SEC (2022).*

Wholesale market outcomes – why?

NEM has evolved far from its origin. While investors, not governments, are taking most of the asset development and operation risks, State and federal govts dominate the selection of generators. Some volume but much price risk for new generation is now borne by tax payers rather than, as hoped, investors. How might this gap be explained? We suggest four possibilities:

1. Coalition federal govts (2013 to 2021) mostly at odds with Coalition and Labor State governments: encouraged States to “take back” power.
2. Energy ministers not convinced market is able to deliver reliable supply.
3. Co-ordination of investment in generation, transmission and storage is increasingly valued.
4. Technology change and declining costs mean RE production costs similar through-out the NEM: the rationale for a “national” markets gets ever weaker as fossils decline.

Looking back: Transmission outcomes



Outcomes are unimpressive but not dire (except in South Australia – this is what stranded assets looks like)

Definitely not the productivity improvement that the “reform” promised.

Transmission institutional arrangements – an ideological war

- ▶ **PM Keating’s “One Nation Statement” (1992):** Cwlth will chip in \$100m if States cede transmission to “national grid company”.
- ▶ **The Parer “Truly National” review (2002):** transmission ... is *“the largest NEM problem”* ... transmission planning is fragmented *“fail(ed) to facilitate sufficient inter-regional trade and competition”*. Solution? NEMMCO, rather than the TNSPs, to be responsible for transmission planning.
- ▶ **ERIG review (2007):** *“whilst the general level of investment is reasonably appropriate and no new major interconnectors appear economical at present, the mechanisms are not in place to ensure the efficient ongoing development of the national transmission system”* and so *“establishment of a strategic national planner under a reformed NEMMCO”* ... *“to deliver an integrated, national plan for the efficient development of the overall power system”*.
- ▶ **Inaugural “National Transmission Network Development Plan” (NTNDP) (2010):** *“information provision”* whose main purpose was to tell potential (generation) investors *“where and when electricity transmission expansion will be needed”*
- ▶ **Inaugural “Integrated System Plan” (2018):** from *“information”* to *“targeted investment portfolios that can minimise total resource costs”*
- ▶ **Actionable ISP rules (2020):** *“transferring responsibility for the coordinated identification and assessment of options to address needs for investment across the integrated system, from TNSPs to AEMO”*

The arc of transmission planning (driven by the quasi-national energy market institutions) has tended towards ever greater centralisation under AEMO

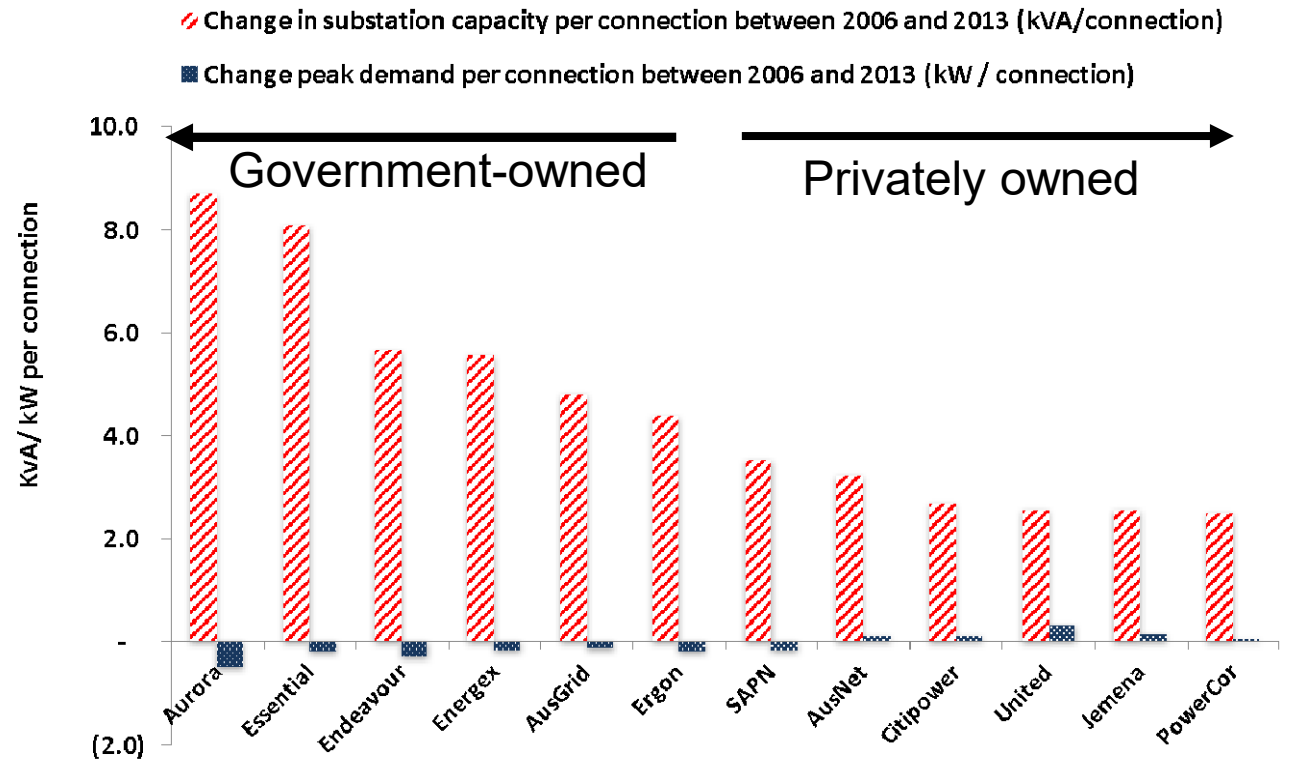
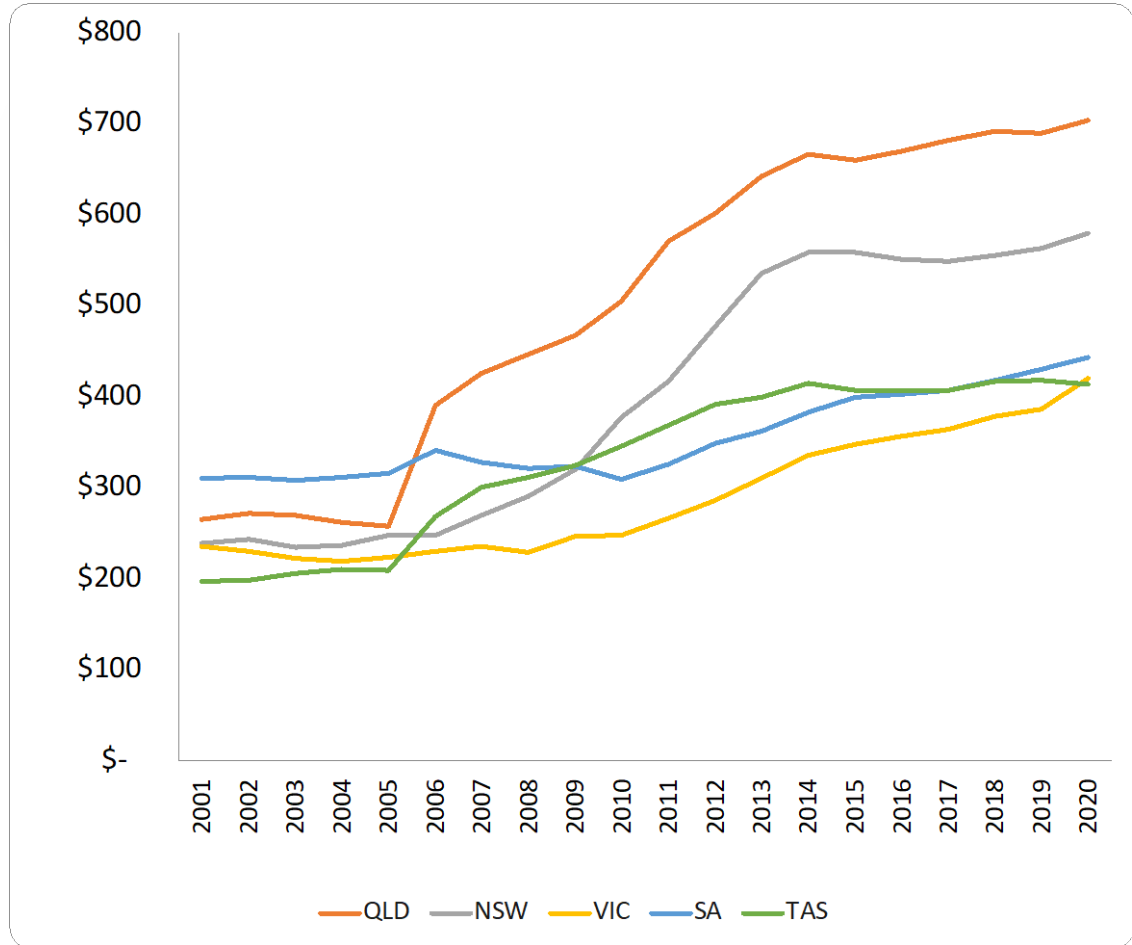
But are the States really onboard with the “truly national” ideology?

- ▶ NSW Energy Infrastructure Investment Act (2020) “to co-ordinate investment in new generation, storage, network and related infrastructure” by “Consumer Trustee” and Minister.
- ▶ National Electricity Victoria Amendment (2020) Act: VicGrid will be responsible for planning the transmission grid in Victoria and establishing transmission access arrangements; and has established its own “least-cost” investment test.
- ▶ Queensland Energy and Jobs Plan (2022)

Is AEMO really ever going to be in charge?

Distribution: really unimpressive outcomes

Regulated asset base per MWh distributed State (\$m, 2020 per GWh)



Things really did not work out as planned. But why?

- ▶ The Industry Commission justified a national electricity market, in part, on the argument that it would improve the distributors' capital productivity and efficiency.
- ▶ But productivity increased a lot in the decade *before* the creation of the NEM and has decreased a lot since.
- ▶ And the regulated asset value and hence prices of the government distributors grew more quickly than those of the privatised distributors: government ownership of is associated with regulated assets and regulated revenues that are 46% and 26% respectively, higher than investor-owned distributors. Network characteristics, size and density does not explain the difference Mountain (2017, 2019).

Why did apparently independent regulation of distributors fail, and particularly so for the government-owned ones?

My answer

- ▶ Distributors, regulators, government departments, industry associations and some researchers attributed distributors' higher spending and consequential increases in regulated revenues and asset values to various factors (expectations of rising peak demand, a need to catch-up for previous under-investment, a changing investment environment, flawed regulatory rules, excessively strict network planning standards and flaws in the arrangements for the review of the merits of the regulator's decisions).
- ▶ None of these can explain the disparity between government and investor owned utilities (Mountain 2017).
- ▶ Instead, compensating government distributors' financing costs at a rate substantially above their actual financing costs encouraged inefficient expansion of the regulated asset base to deliver higher profits.
- ▶ The ACCC warned that independent regulation of network monopolies is necessary to deliver the promised productivity. It was wrong.

The evidence suggests that independent regulation of government-owned utilities is an oxymoron.

Summary of the main points

- ▶ The NEM has not delivered on the hopes and promises of its proponents.
- ▶ In wholesale markets, investment has been policy-driven since the start of the NEM. By their decisions we can see that State governments do not trust the market to deliver reliability or decarbonisation.
- ▶ In transmission, results have been unimpressive. Central institutions have been driven by a “truly national” vision but, really, the States have never really bought it. The case for “truly national” gets ever weaker as the industry decarbonizes. The States have (recently) taken their powers back and are showing great desire to use them.
- ▶ In distribution, outcomes have been very bad. Independent regulation of government-owned monopolies have proved to be an oxymoron.