

Electricity in Australia: Where and why did we go awry?

John Cain Foundation
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Outline

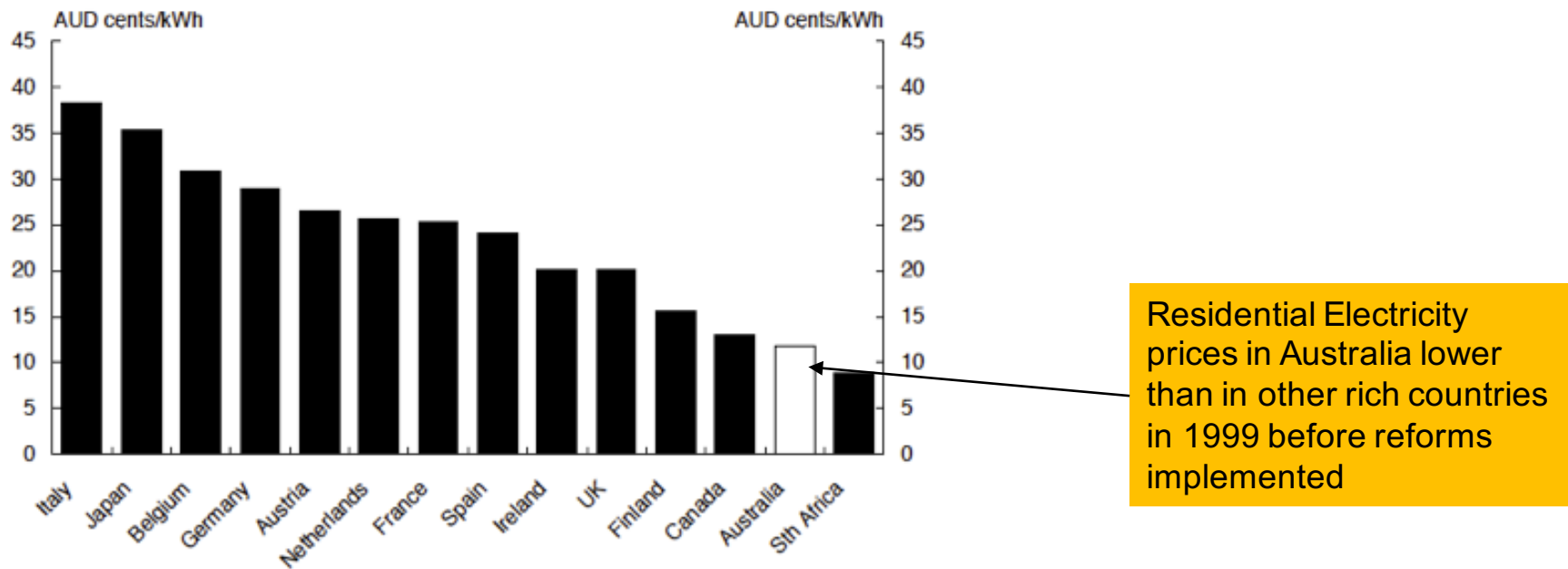
- What was the “reform” 20 years ago and what did it promise?
- Have the promises been delivered ?
 - Wholesale markets
 - Networks
 - Retail markets
- Why did it go awry ?
- What might we do now ?

What was the “reform”, started 20 years ago ?

- The “Reform” was designed by the Industry Commission and fleshed out by an industry council in the early/mid 1990s. The key elements mirrored changes in Chile & Britain in the late 1980s:
 - Vertical separation of generation, transmission, distribution and energy retailing
 - Competition in production and retailing
 - “Economic regulation” by independent regulators of transmission and distribution
 - Privatisation
- Significant institutional changes followed later:
 - Ministerial Council on Energy created in 2002, then renamed “Standing Council on Energy and Resources” then renamed “COAG Energy Council”
 - Creation of quasi-federal Australian Energy Regulation (AER) and Australian Energy Markets Commission (AEMC) in 2004
 - Transfer of regulation from state regulators to AER/AEMC from 2009

The reform promised lower prices and higher productivity

- Getting politicians “out of the kitchen” (cf. governance of the Reserve Bank) meant to promote professionalism, expertise - and freedom from the vices associated with populist politicians (at least from the technocrat’s perspective).
- The Industry Commission (now Productivity Commission) said prices would be lower and productivity would be higher.

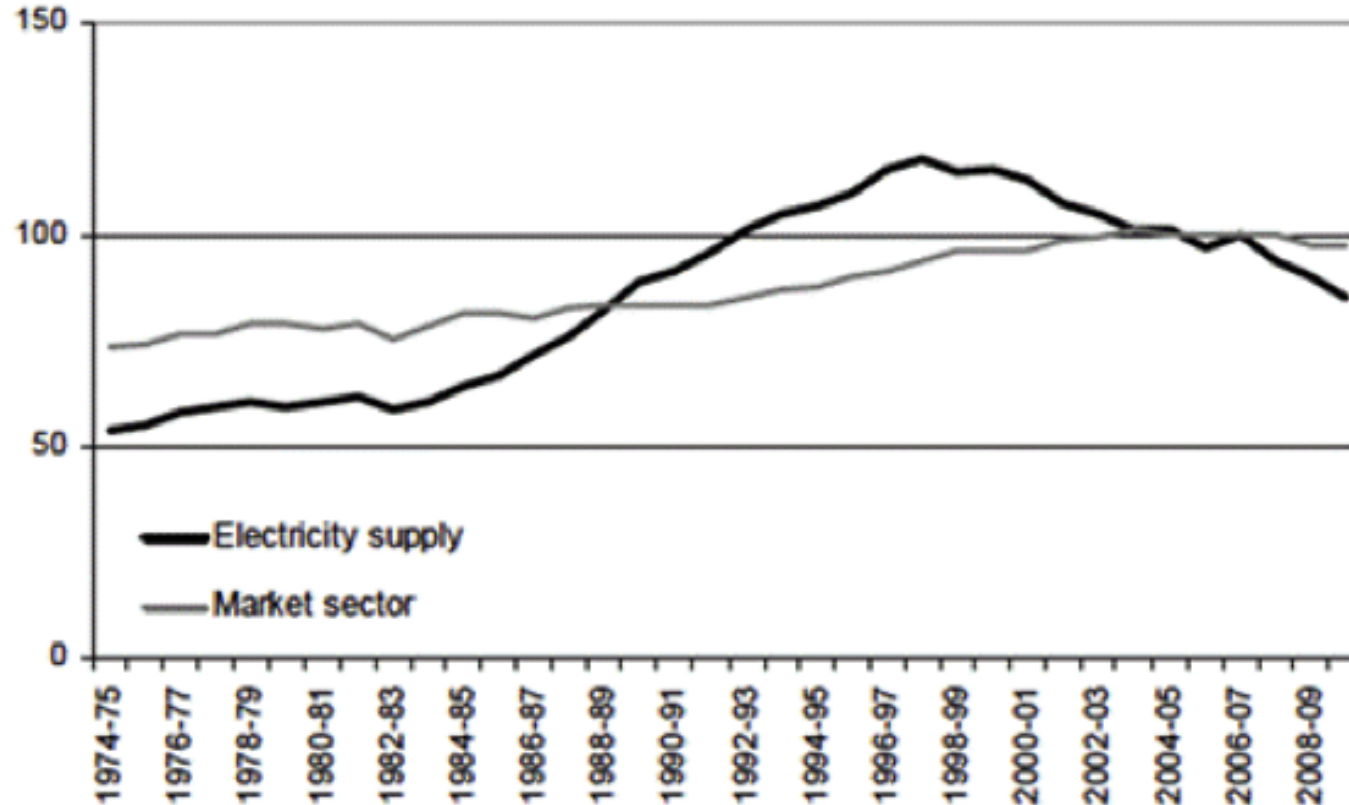


Source: (Australian Government Treasury 1999, p. 60).

Have the promises been realised?

Productivity improved before the "reform" was implemented in late 1990s and has declined since

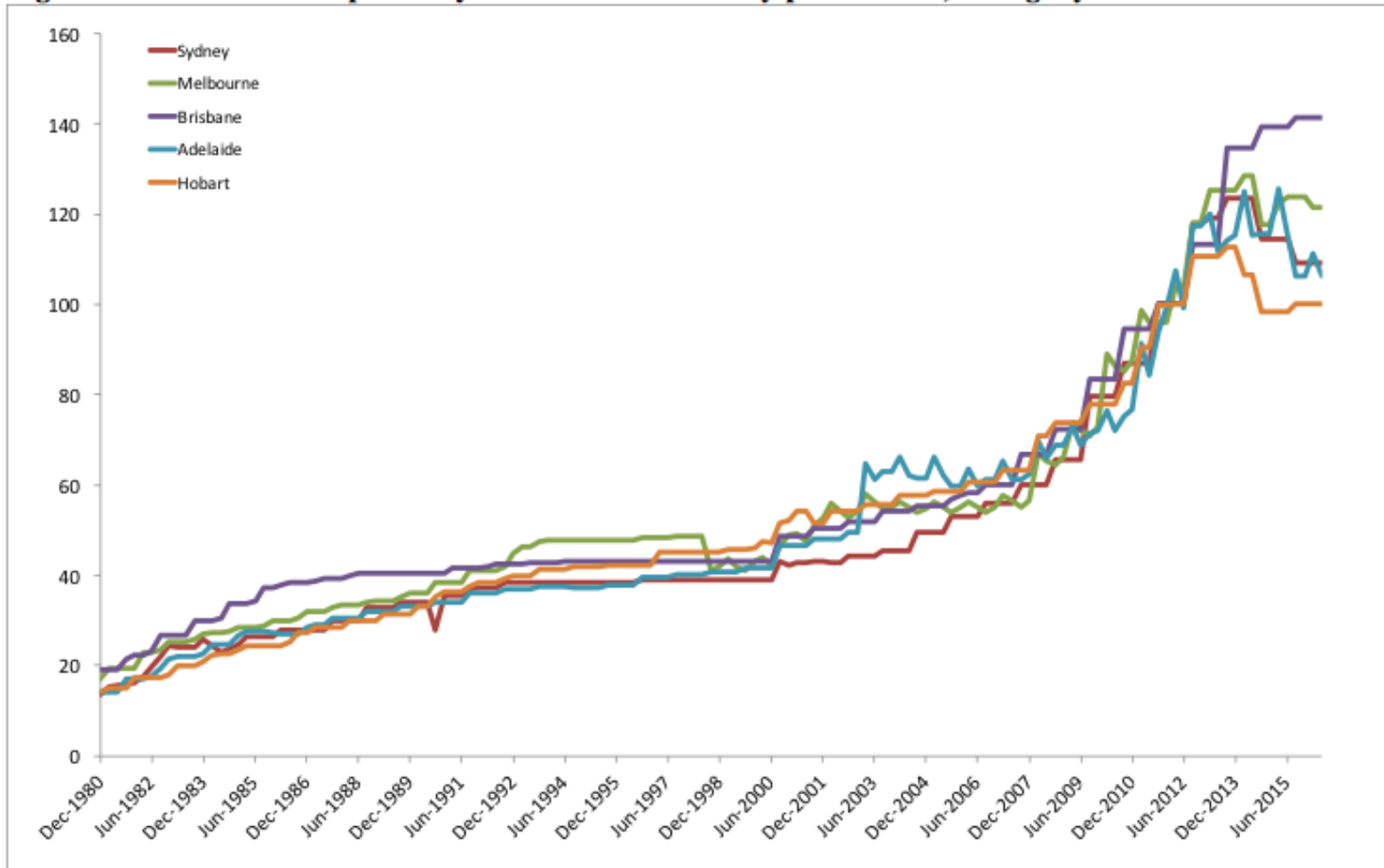
Figure 2. Electricity supply: MFP, output and inputs, 1974-75 and 2009-2010. Index 2006-07 = 100.



Source: Topp and Kulys (2012, p. 31).

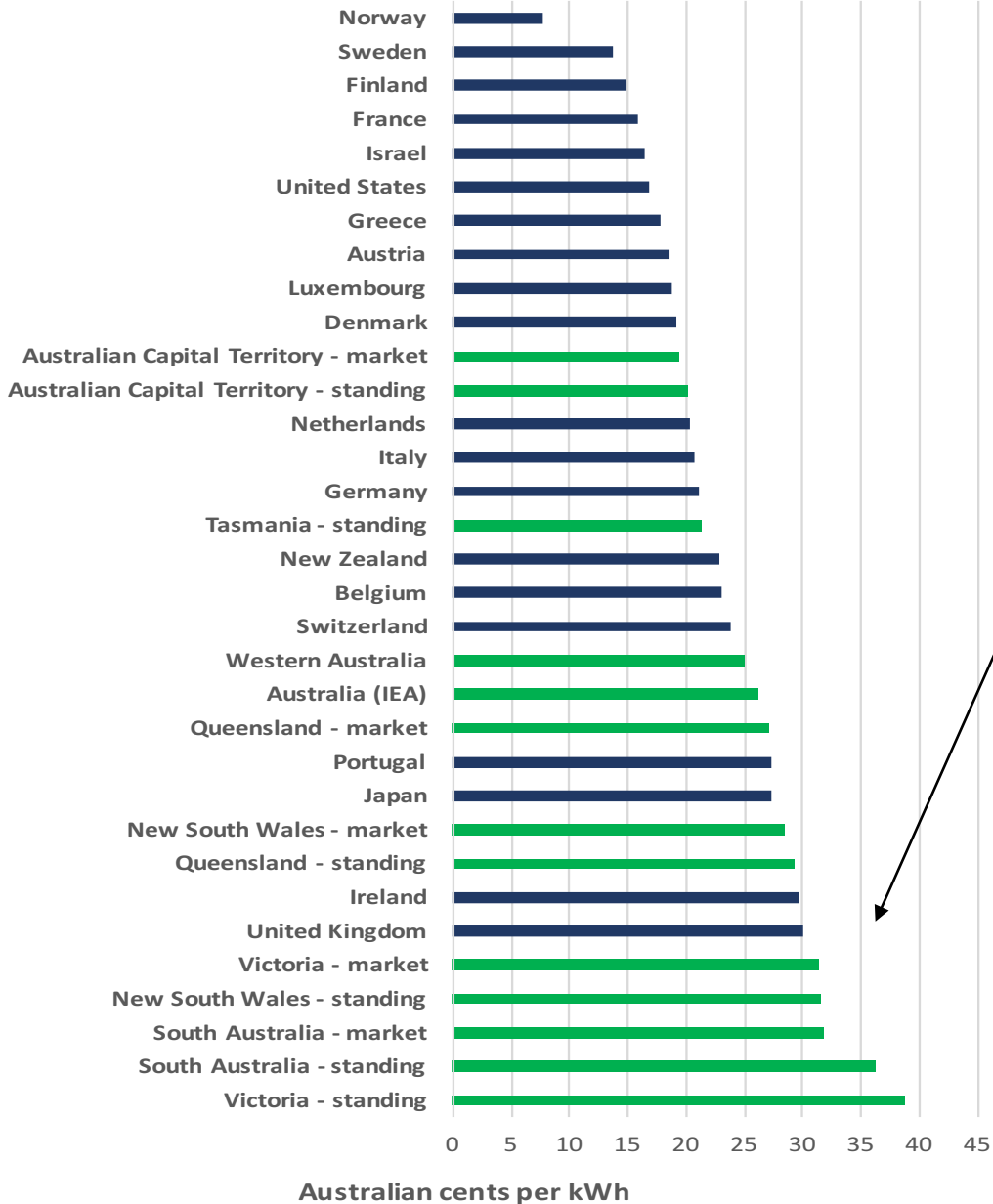
And electricity prices have increased significantly

Figure 10. Australian capital city residential electricity price index, Category 640108



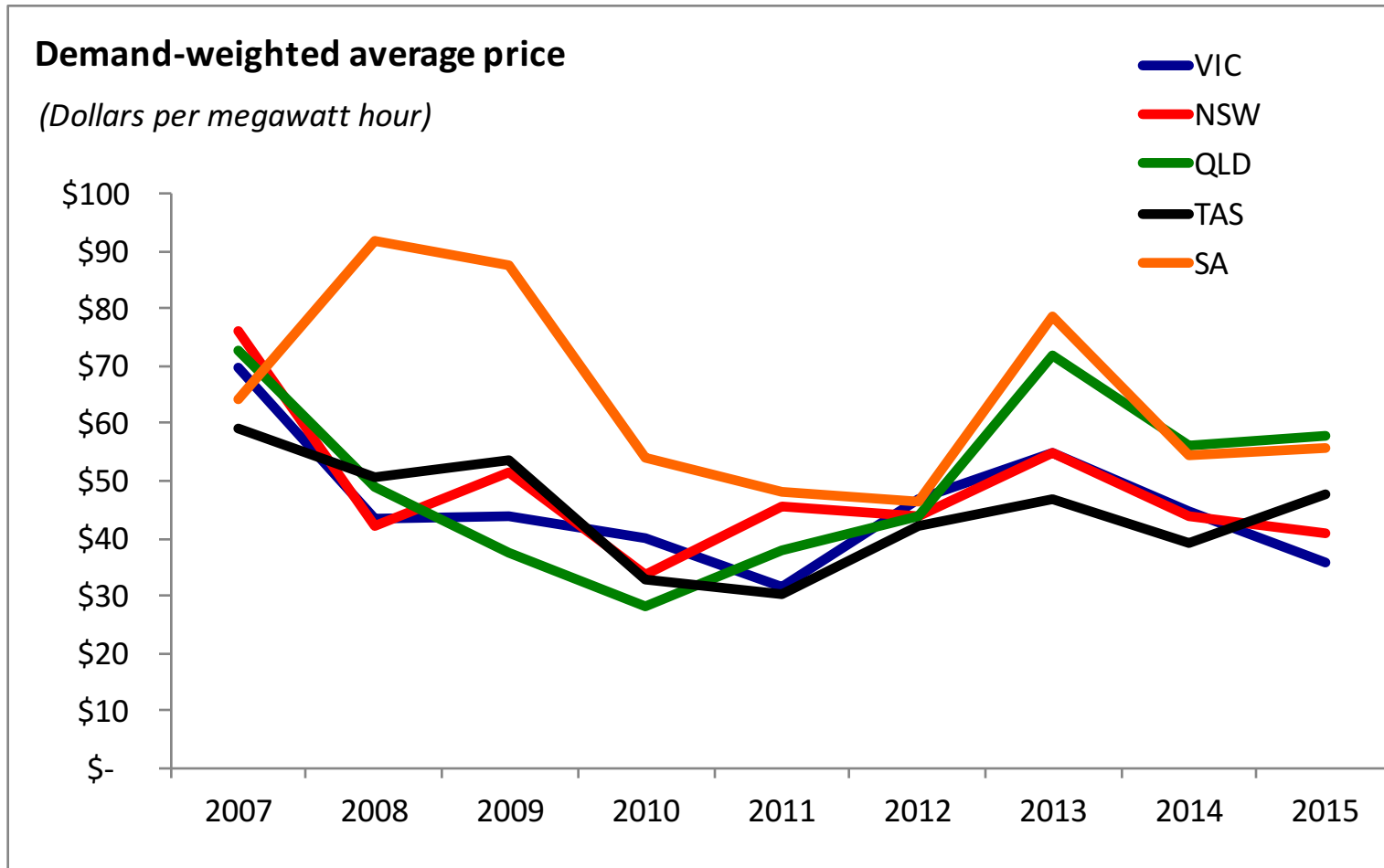
Source: Australian Bureau of Statistics, Consumer Price Index data series 640108.

Household prices exclusive of taxes (market exchange rates)



Household electricity prices in Australia (before sales taxes) are now higher than in comparably wealthy countries.

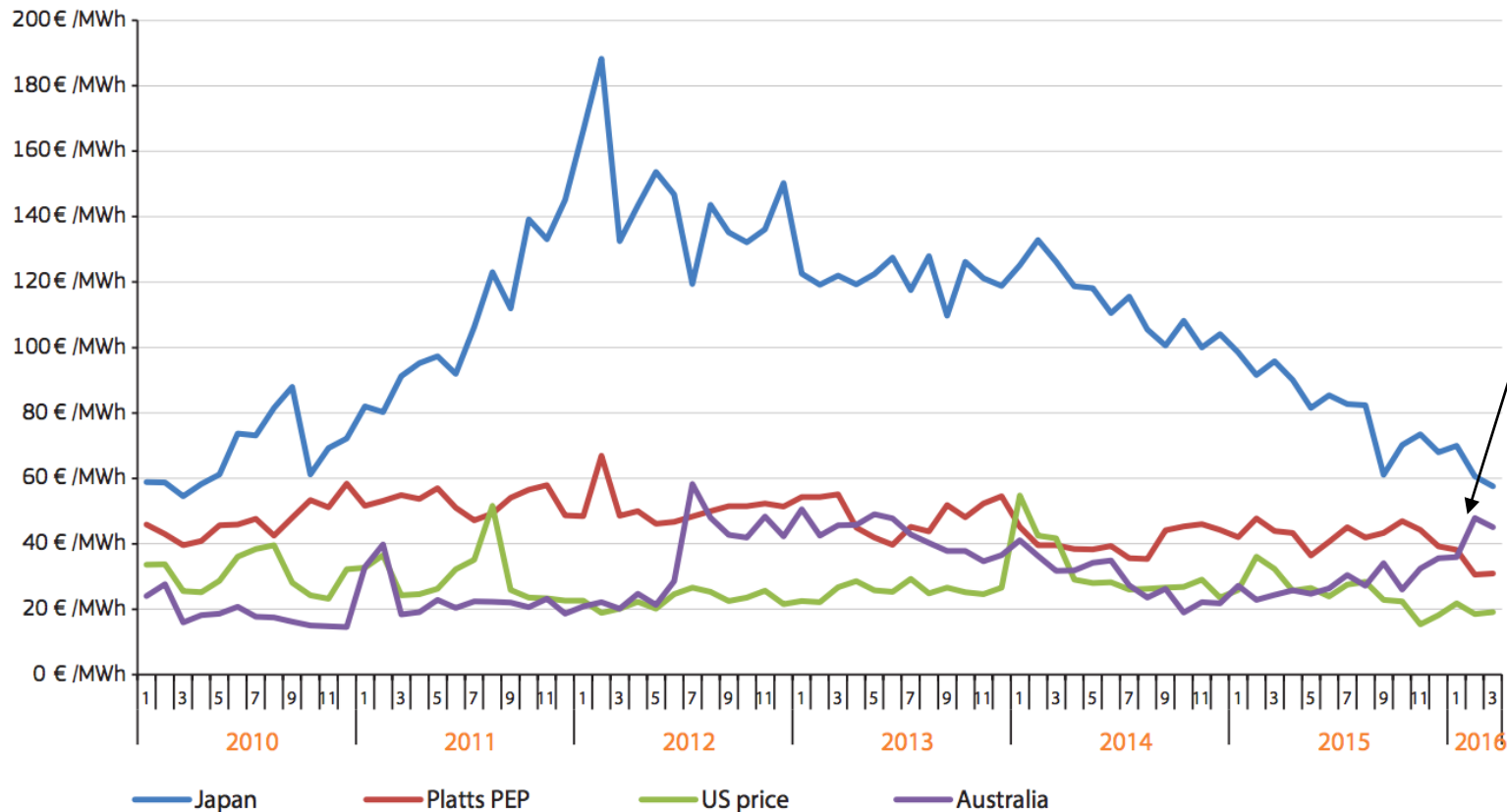
Wholesale markets (except in South Australia) have been the least problematic part of the industry



Source: AEMO data, author's analysis

But by international comparison, prices in the National Electricity Market are now rising relative to those in other countries

FIGURE 32 – COMPARISON OF THE AVERAGE US, JAPANESE, AUSTRALIAN AND THE EUROPEAN WHOLESALE ELECTRICITY PRICES



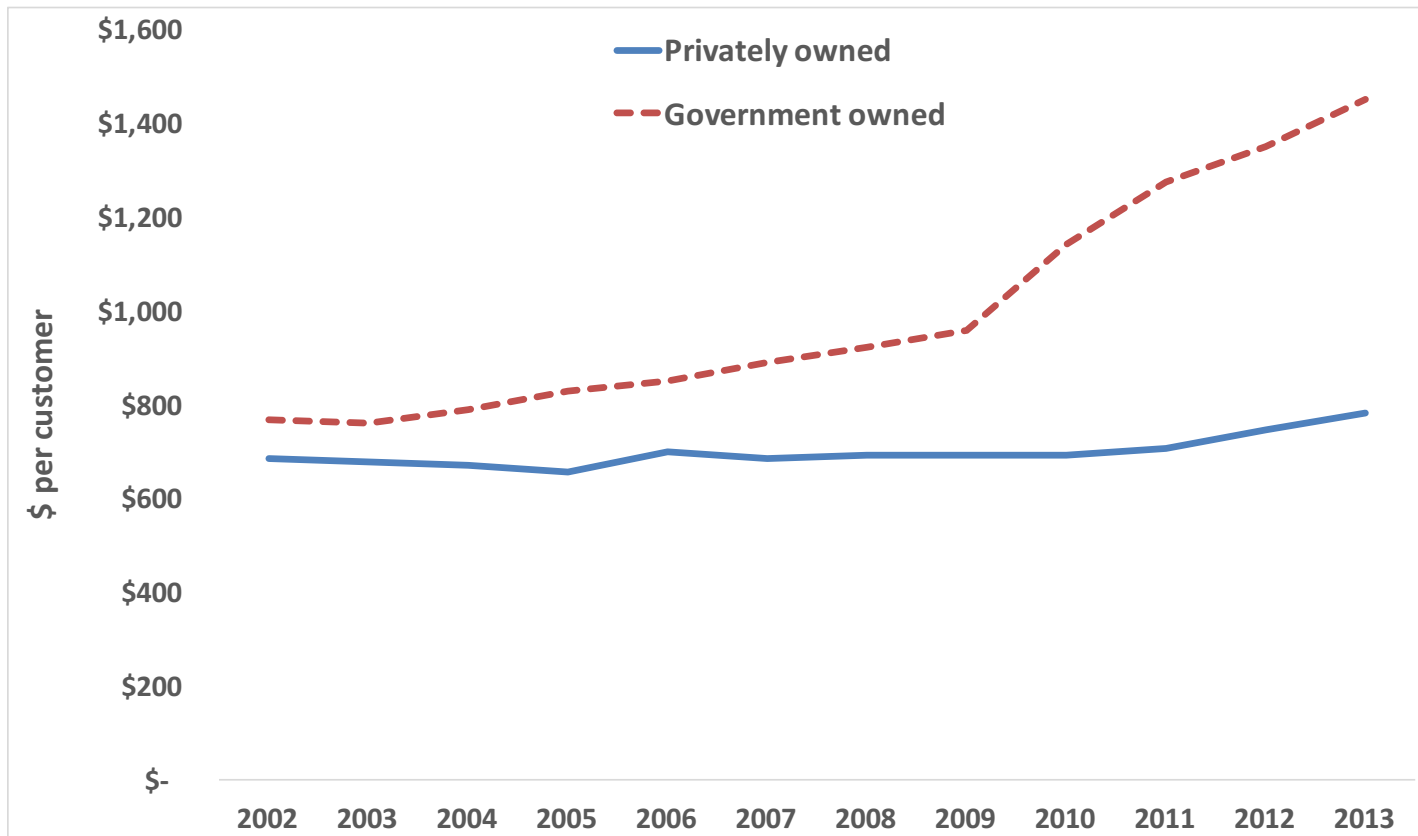
Cheaper gas (and growth of renewables in Europe and parts of the US) is depressing wholesale prices relative to Australia

Source: Platts, PEP: Pan-European Power index US electricity hubs including PJM West: Pennsylvania-Jersey-Massachusetts hub (Western part); ERCOT: Texas hub, JPEX, (Japan) and AEMO: Australian wholesale power market

(Government-owned) network service provider outcomes have been highly unsatisfactory

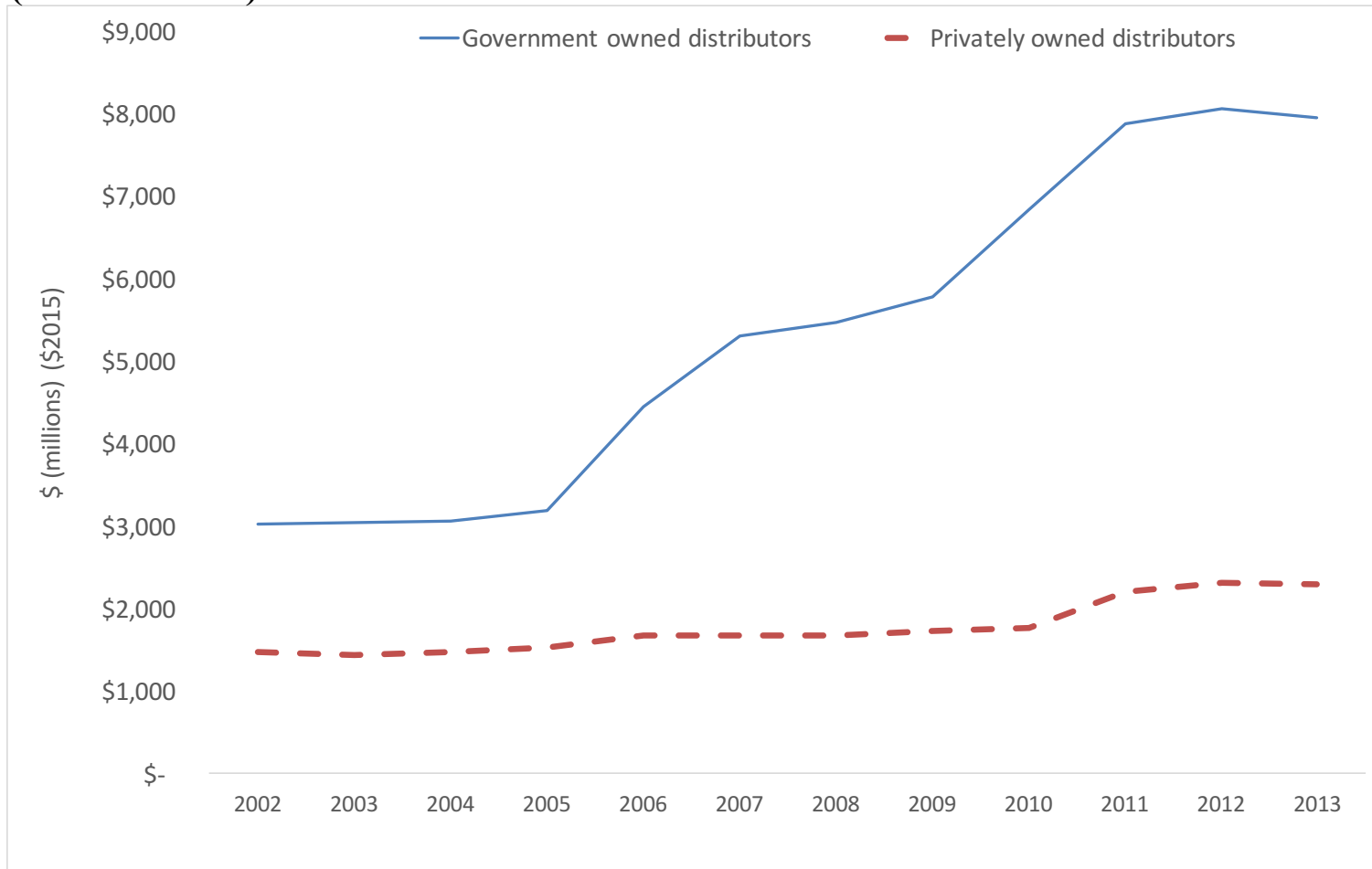
- 4 companies provide transmission network services (all except one is privately owned)
- 12 companies (plus much smaller one in ACT) provide distribution network services (of which 6 privately owned).

Average annual prices for network services in the NEM (\$/customer) (2015 dollars)



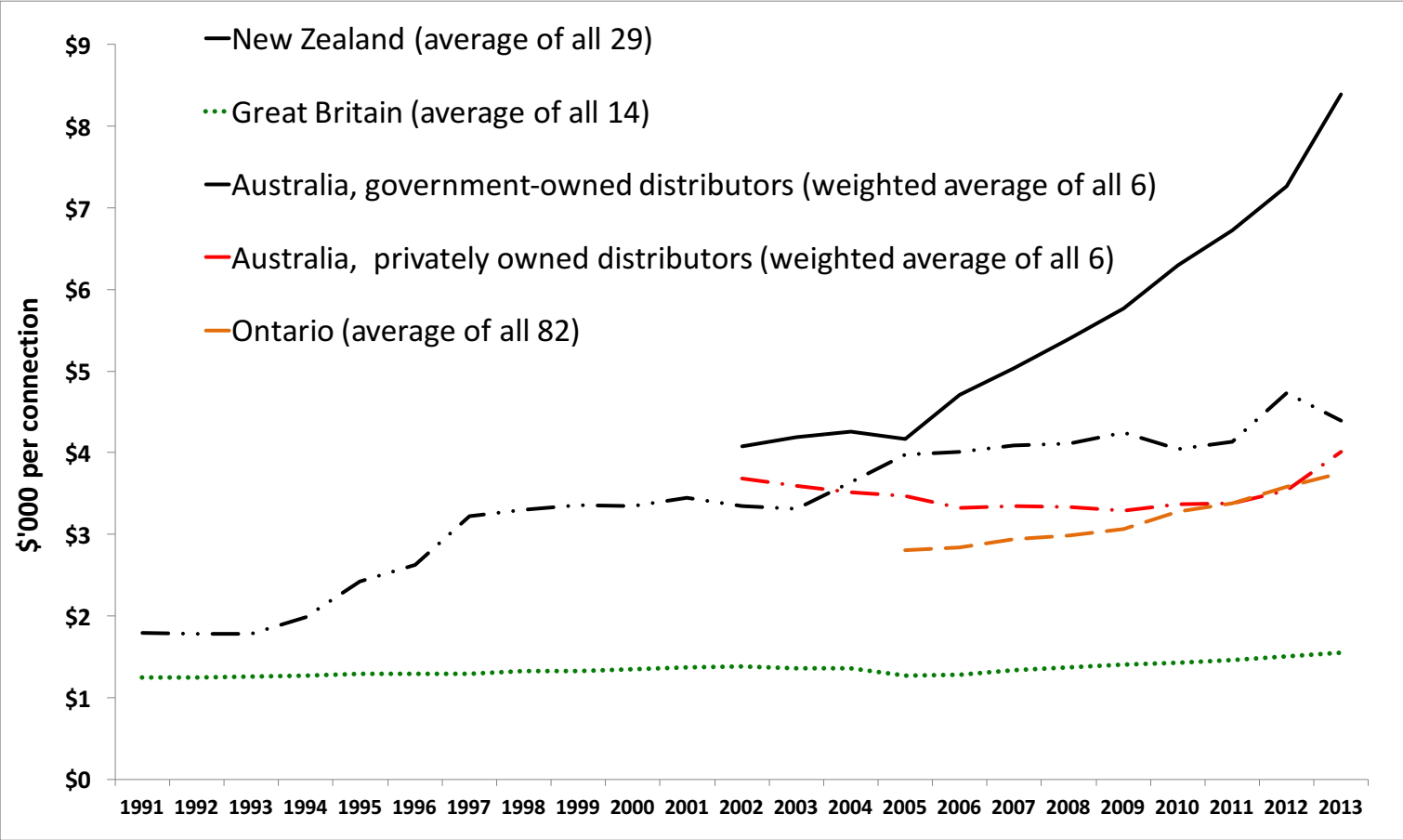
Distribution network expenditure ballooned following the reforms

Total expenditure allowances for government and privately owned distributors in the NEM (2015\$millions)



And regulated asset values now compare very unfavourably in international comparison

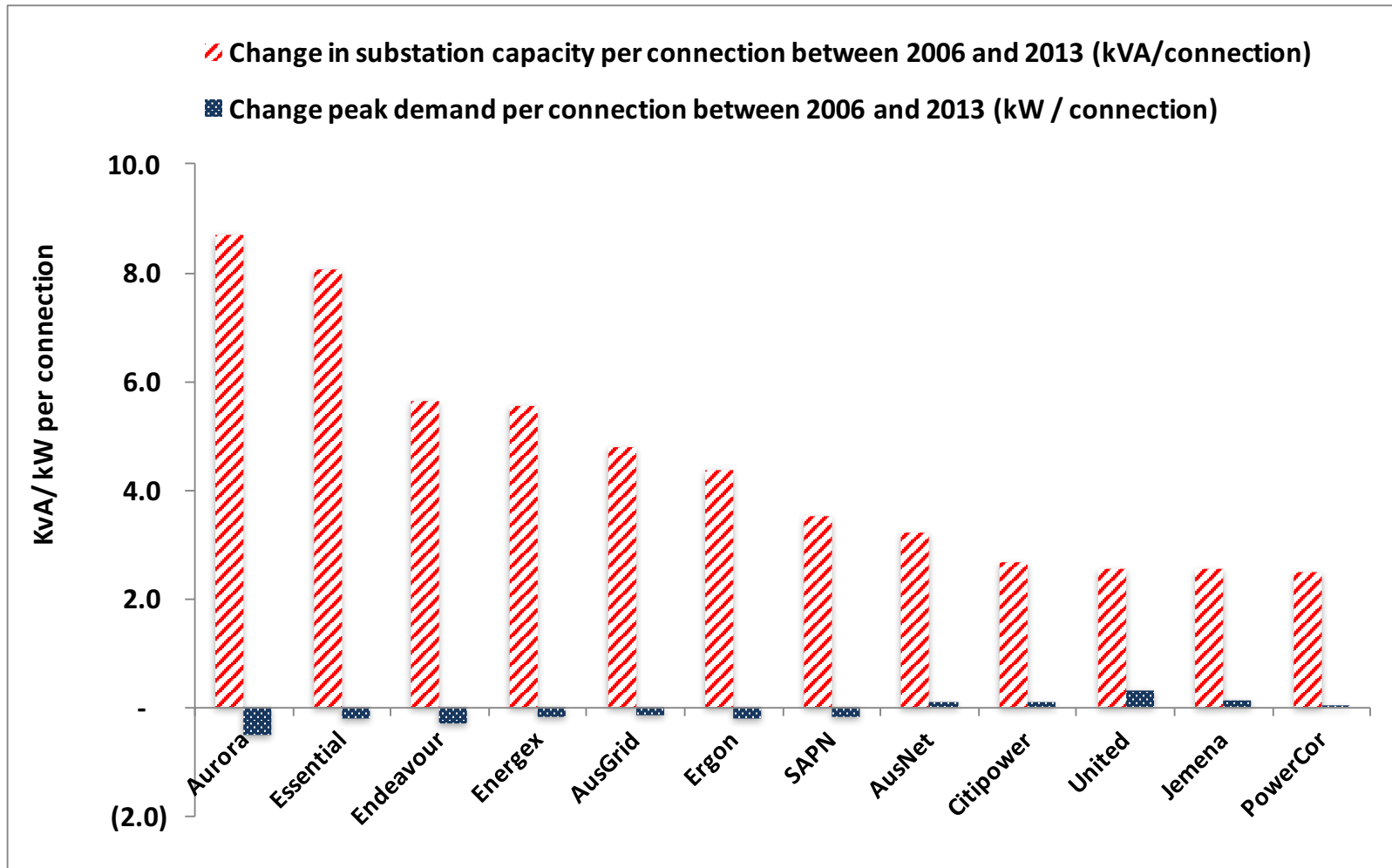
Regulated asset value per connection (\$'000 per connection) for electricity distributors in New Zealand, Great Britain, Australia and Ontario (2015 Australia dollars, PPP exchange rates)



Source: (Mountain, 2016 p.56)

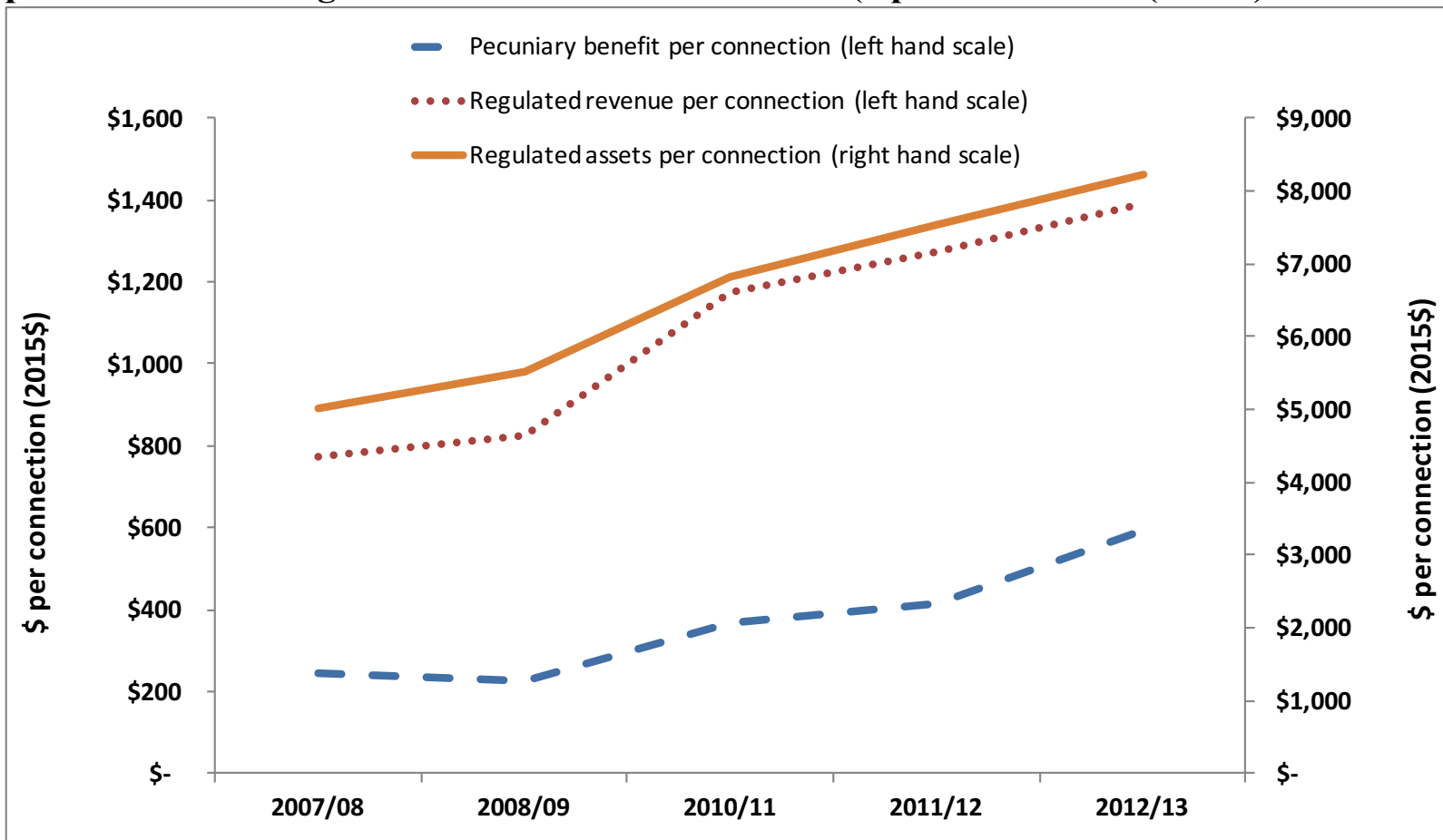
There is compelling evidence of substantial capacity surpluses, particularly where governments own the networks

Change in substation capacity compared to change in peak demand, 2006 to 2013 per connection



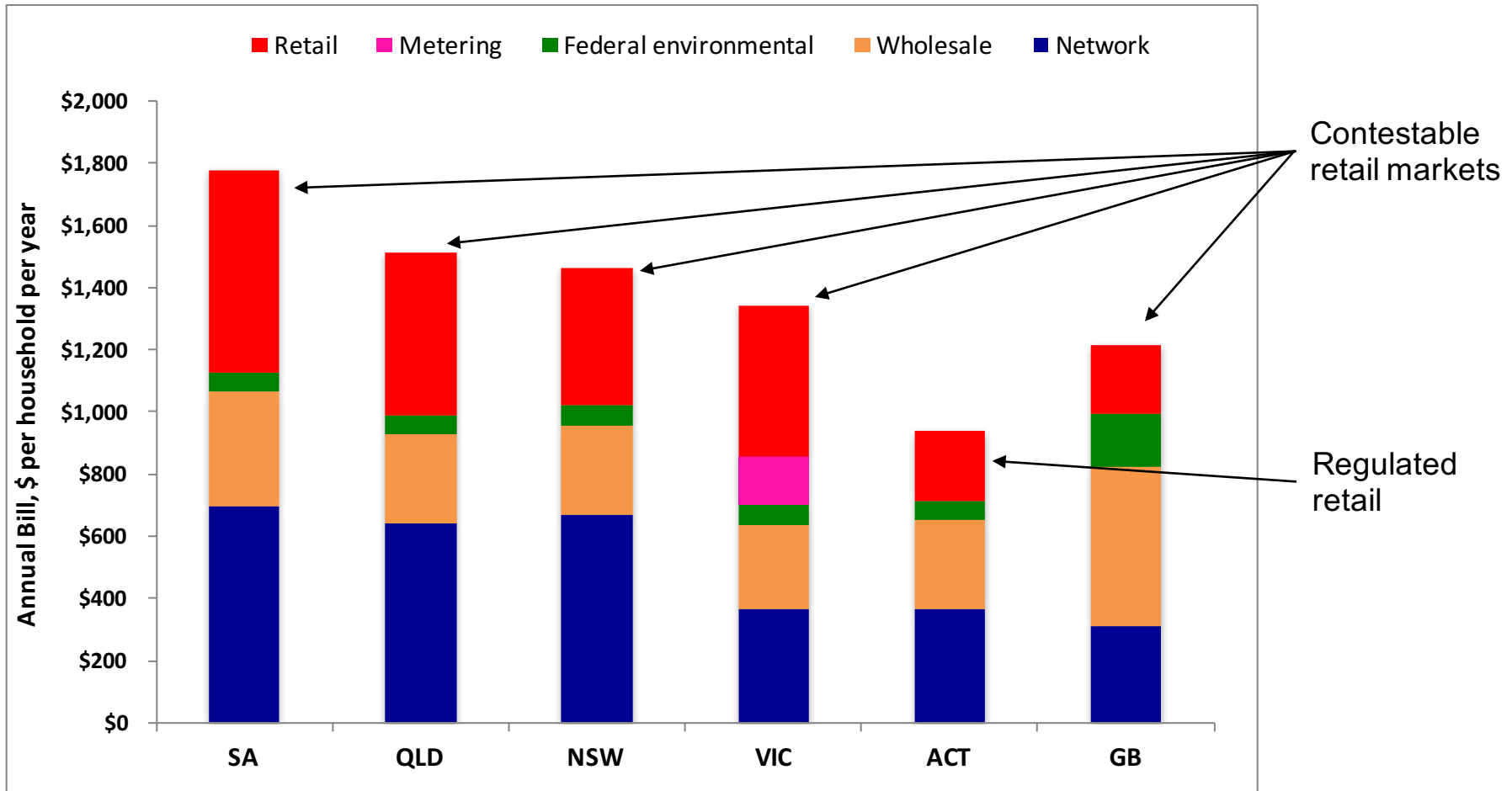
Larger regulated asset values combined with generous regulatory determinations of the cost of capital means networks have become very profitable

State Governments' pecuniary benefit, regulated assets per connection and regulated revenue per connection for government owned distributors (\$ per connection (2015\$))



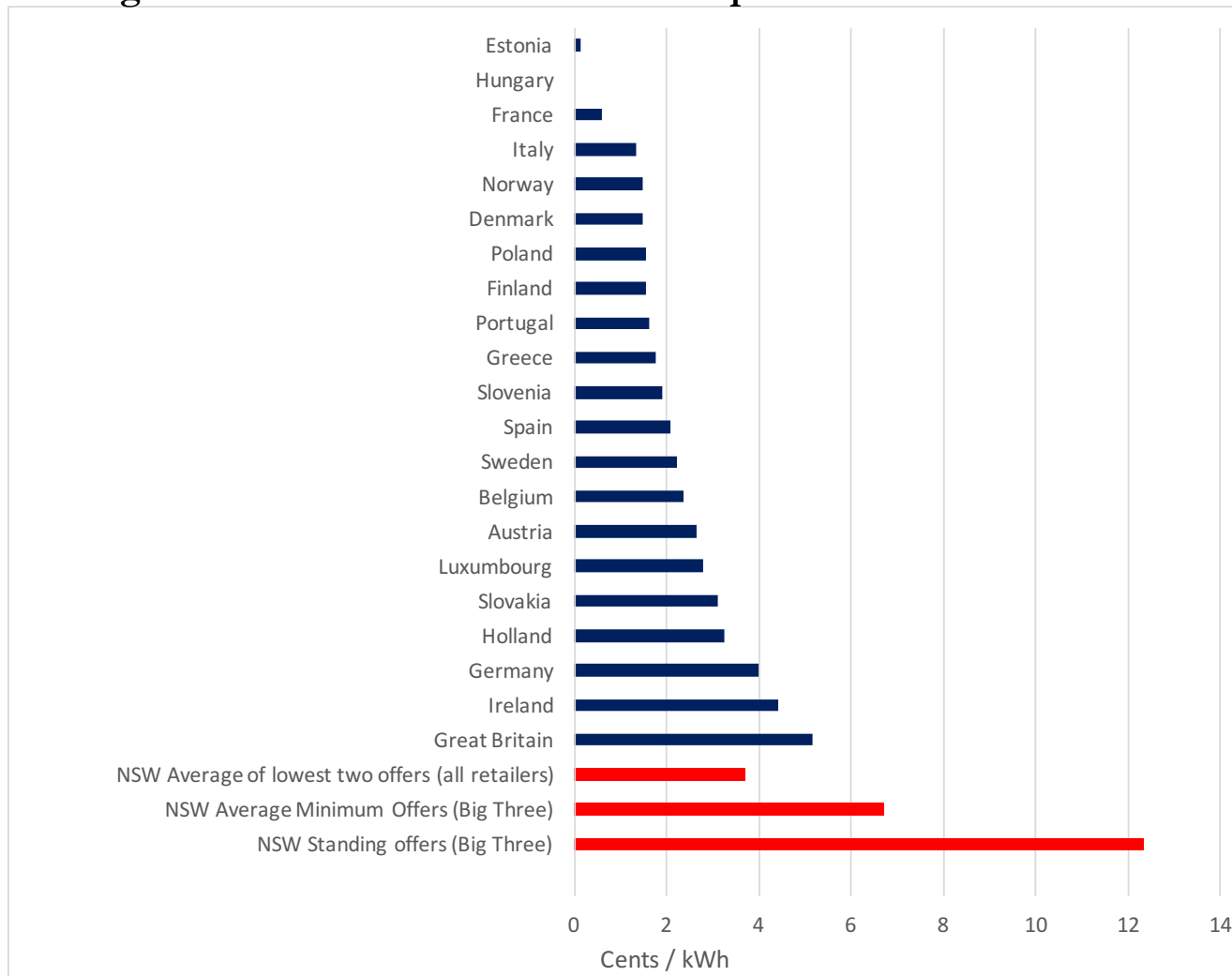
Retail market outcomes are also problematic

Breakdown of household electricity bills in regional markets and Great Britain (GB)



Retailer charges in Australia compare unfavourably with those in Europe

Charge for retail services in New South Wales on different retail offers compared to average charge for retail services in various European countries



Source: (Mountain, 2016a p.3)

Why did it go awry ?

- **Networks:** we failed to take account of the inter-relationship between regulation and ownership. There is no support, empirically or theoretically for the approach we have adopted of assuming that government-owned firms should be regulated as if they privately financed.
- **Retail:** this is terrifically complex. Very high market concentration exists in all retail markets. Policy makers and regulators are relying on competition to compete the rents way. Results so far are underwhelming and this is gathering increasing attention.
- **Renewables policy:** high solar feed-in rates had a significant, albeit short-lived impact on prices mainly in SA and QLD. Federal schemes do not have a significant impact on prices to small customers, but can be significant to larger customers. High renewables penetration in other countries is depressing wholesale prices but we are not seeing that in Australia. Why?
- **Governance:** we are a federation, but unlike other federations have centralised regulation and industry oversight, sort-of. We have tried to become half-pregnant. Confused state / federal accountability has resulted in opportunistic blame-shifting and, invariably, settlement at the lowest common factor.

What can be done about it?

- If we accept that the Australian Constitution makes electricity supply a right/obligation of the states (it does), then we need to be clear about why the institutional arrangements adopted in other federal countries such as Germany, the United States and Canada do not provide an appropriate model for us. Can we explain why their arrangements should not apply in our federation?
- Alternatively, if we decide to emulate the centralisation evident in unitary states such as New Zealand or England, then we should do so whole-heartedly.
- Political leaders, state and federal, must clarify who should have responsibility for what, and then how institutions and roles should be reformed to give effect to that clarity.
- Success in this “reform” can be measured when the average punter has no doubt whose door to knock on when next the lights go out whether involuntarily, or from bill shock.

References

- Mountain, B. R. July 2016. “*Ownership-invariant Regulation of Electricity Distributors in Australia: A Failed Experiment*”. PhD Dissertation.
- Mountain B.R October 2016a. “*Submission to IPART: Review of the performance and competitiveness of the retail electricity market in NSW*”
- Mountain B.R. August 2016b. “*Australia’s retail electricity markets: who is serving whom?*”. A report for GetUp!”
- Quarterly Report on European Electricity Markets, DG Energy, Volume 9, July 2016.
- Mountain B. R. July 2016. “*International comparison of Australia’s households electricity prices.*” A report for One Big Switch.
- Topp, V & Kulys, T 2012, Productivity in Electricity, Gas and Water: Measurement and Interpretation, Productivity Commission, Canberra.