



On entry cost dynamics in Australia's National Electricity Market

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Abstract In theory, well designed electricity markets should deliver an efficient mix of technologies at least-cost. But energy market theories and energy market modelling are based upon equilibrium analysis and in practice electricity markets can be off-equilibrium for extended periods. Near-term spot and forward contract prices can and do fall well below, or substantially exceed, relevant entry cost benchmarks and associated long run equilibrium prices. However, given sufficient time higher prices, on average or during certain periods, create incentives for new entrant plant which in turn has the effect of capping longer-dated average spot price expectations at the estimated cost of the relevant new entrant technologies. In this article, we trace generalised new entrant benchmarks and their relationship to spot price outcomes in Australia's National Electricity Market over the 20-year period to 2018; from coal, to gas and more recently to variable renewables plus firming, notionally provided by – or shadow priced at – the carrying cost of an Open Cycle Gas Turbine. This latest entry benchmark relies implicitly, but critically, on the gains from exchange in organised spot markets, using existing spare capacity. As aging coal plant exit, gains from exchange may gradually diminish with 'notional firming' increasingly and necessarily being met by physical firming. At this point, the benchmark must once again move to a new technology set.

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