

Policy and Governance for Electricity Supply in Australia: Public or Private Interest?

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Abstract

The National Energy Market (NEM) introduced in 1998 sought to connect the electrically linked states and territories of eastern and southern Australia in a system which embraced the generation, transmission, distribution and marketing of electric power. The 'market' unbundled the vertically integrated public enterprises then operating at state and territory levels and substituted a complex system comprising several hundred entities functioning through all phases of the industry and demanding significant coordination and regulation to ensure effective operation. This article looks first at the structural arrangements, and examines private, public and public-private elements of the mix. It then considers a set of public interest tests for the industry first proposed as early as 1956, and asks whether the NEM arrangements satisfy those tests. It concludes that they do not.

Keywords:

Public interest, privatisation, National Energy Market, utilities

Introduction

In a valuable report on the structure of the electricity supply industry in Australia published in 1956, four decades before the establishment of the 'National Energy Market' (sometimes referred to as 'National Electricity Market', NEM either way), economist E.A. Boehm wrote of the 'movement away from the original pattern of many independent privately and publicly owned enterprises ... towards central public ownership and control' that had reached its peak around the time of World War II, and of the 'growing centralisation and hence coordination of control' that had occurred through statutory corporations in each state. The industry had thus passed into virtually total public ownership at the state level, with the fundamental requirement, as Boehm explained, that each supply authority should pay 'due regard to the public interest' involving electricity security (reliability, continuity and sufficiency of supply) and economy (as the cheapest supply to consumers). Boehm suggested that it might be appropriate for the Commonwealth, having entered the industry after World War II through the also-publicly-owned Snowy Mountains Hydro-Electric Scheme, to play a stronger role in coordinating the network by expanding its initial support through that scheme (Boehm, 1956).

Sixty years on there is now a NEM in Australia, and it aims to satisfy both criteria suggested by Boehm together with an additional third criterion of meeting Australia's international obligations to reduce carbon emissions. However, the energy network is far from integrated — with the roles of producer, transmitter, distributor and provider (retail) being shared through numerous organisations, public and private. Nor does the present arrangement appear to meet the public interest tests suggested by Boehm.

The NEM has been criticised by many commentators, such as columnist Ross Gittins who observed that 'climate change, and now energy policy, have been turned into partisan, salute-the-flag issues', and that the political parties are failing in seeking policies to reconcile conflicting goals that would advance energy provision in the national interest (Gittins, 2017: 1). Many dramatic terms, such as 'catastrophe' (Dunkerley, 2017) and 'world-class failure' (Murphy, 2017a), have also been used to describe the NEM situation in the second decade of the 21st century, revealing an electricity system under strain and leaving many Australians worried about the reliability of their power supply (Murphy, 2017b).

In this context, serious questions remain about whether or not due regard has been paid to the public interest. For the purposes of this paper, the term 'public interest', usually slippery and difficult to define, has been equated with 'common good', 'public good' and 'common interest'. These terms are underpinned by the notion that governments should serve the people, and people should be the beneficiaries of governing; in this case, benefits being energy security, energy affordability and serving the common good of the planet in curbing carbon emissions (see Johnston, 2017). Significantly, the Finkel review of the NEM (discussed late in the paper) used these same three criteria to frame its report.

The debate rages as the Commonwealth government challenges those state governments that have preserved older structures; as the Commonwealth government itself is divided between supporters of old-style coal generation, clean-coal generation and coal-free generation; as strident claims are made for greater investment in wind and solar generation; as one state has been totally blacked-out by storm activity; as energy prices rapidly increase; as separate conditions applying in the gas industry introduce serious complications and come close to destroying the central market altogether; and as the Prime Minister personally intervenes in the market with threats to impose export taxes unless gas companies

reconsider both supply and pricing arrangements. A combination of such factors has moved the NEM to the centre stage of political activity.

It is not only in Australia that energy supply issues have assumed such importance. Theoretical contributions to this debate, drawn from world experience, explore the claims for old-style vertical integration, with a single national or state organisation handling generation, transmission and distribution, against all the unbundling that has taken place in restructured markets. The editors of an international survey have concluded that, in nearly all cases considered, 'initial market reform leads to unintended consequences or introduces new risks, which must be addressed in subsequent "reform of the reforms"' (Chao, Oren and Wilson, 2008).

Efforts to explain changes in the energy policy environment in Britain have led to the conclusion that, while a policy paradigm change has taken place, 'the process of change has been informed by multiple narratives and the new governance system is complex and incoherent' (Kern, Kuzemko and Mitchell, 2014: 513). And, directing this sort of inquiry to Australian conditions, economics commentator John Quiggin has argued strongly that the break-up of the old integrated state energy enterprises has been a disaster, and urged re-nationalisation of the whole as a single publicly-owned network (Quiggin, 2017).

Against this background, this paper has two main themes. First, focussing particularly on the structural arrangements, it traces the development of the Australian NEM since its formation at the end of the 20th century, noting particularly the influences of centralisation, disaggregation, privatisation and commercialisation. Second, it asks whether or not the 'public interest' test established by Boehm is observed under current arrangements. We conclude that it is not.

Establishing an integrated, publicly-owned energy supply

The Australian electricity supply industry was initially marked by an assortment of private and public operators with local governments prominent on the public side. The movement towards establishing integrated, state-based utilities was part of a broader strategy of utilising these state enterprises as generators of economic development which was 'not to be retarded by lack of ample, reliable and cheap supplies of electric power' (Boehm, 1956: 259). The integration under a single state government banner in each case was also seen as one way of ensuring broader public benefits of reliable supply which had hitherto only been available to some of the better-resourced communities. A 1909 publication underlined some of the benefits which accrued to fortunate communities:

The Sydney City Council runs a big electric plant, supplying light and power and returning thousands of pounds per annum in profit. Melbourne City Council does the same, and clears close upon 10,000 pounds per annum. ... Launceston, Tasmania, is the most advanced. It owns practically all public utilities. It has a splendid electric power and light supply ... From the profits of their water supply they built a large hall. They have large workshops, and possess hot, cold, and swimming baths, a fine museum and art gallery, a zoo, and public gardens (Spence 1909: 301).

Tasmania led the way in integrating electricity and power on a state-wide basis with its formation of the Hydro-Electric Department in 1914 (Commission from 1930), followed by Victoria's State Electric Commission in 1918 and after that by other states. This development of major public enterprises to

provide electricity was underscored by a series of government reports which endorsed the process (see Boehm, 1956).

These large supply organisations owned by the state governments were, for much of the 20th century, among the leading users of public sector personnel and finance. They had become leading examples of the practice of ‘lifting’ enterprise-related activities out of the general public service, and the creating statutes provided them with autonomous powers of management, under limited ministerial supervision, within the protection of legally incorporated boards and commissions. The term ‘statutory corporation’ emerged as a class-name for such organisations.

They were in each case creations of state legislation and of setting-up action by state governments. The electric power grids they established were similarly state-based, drawing power from generating stations within the territories of the owning states, using similarly state-focussed transmitting grids and supplying customers living or operating in that state. Consistent with the allocation of power supply to the states under the Australian Constitution, there was little or no cross-over between states, and any national coordination was provided as necessary by top-level instruments of the Australian federation such as the Premiers’ Conference and Loan Council.

The case for a publicly-owned, integrated arrangement was based on a number of premises. As Toner (2012) has pointed out, an electricity network is typically a natural monopoly, with entry costs generally prohibitive for alternative providers especially in relation to transmission and distribution infrastructure. The generation element of electrical infrastructure is highly capital-intensive and subject to significant scale economies. The implication of this is that the monopolist and oligopolist structure of the electricity industry does not and cannot provide benefits that supposedly flow from competition. Further, electricity supply is a networked infrastructure as it requires the integration of several types of discrete investment (generation, transmission, distribution and retailing) and is, therefore, most efficiently supplied by a vertically integrated entity. Finally, electricity is an inelastic commodity with consumers prepared to pay almost irrespective of the price. This provides the supplier with huge market power, and, by and large, the states were confident that this power would be less likely to be exploited if the industry were in public ownership.

State governments were not only mindful of the broader public benefits which would arise from public ownership of the quasi-monopolies associated with electricity provision. They also saw these public enterprises as providing much-needed boosts to state budgets as well as being ‘engine rooms’ for state economic development. The utilities flourished as part of a nation-building policy, congruent with then-dominant Keynesian economic traditions which encouraged governments to raise capital for public works.

But this state-based system was to end in the 1980s when, again consistent with broader international trends, Australia saw the emergence of new ways of thinking about the role and operation of the public sector, from which the big public utilities were not exempt. The fiscal crisis of the states led to programs aimed at either commercialising all the utilities or, more radically, divesting them through privatisation. Partly as a result of this trend, public investment in Australia as share of Gross Domestic Product (GDP) fell from more than five percent in the mid-1980s to well below three percent by the end of the 1990s (O’Neill, 2017).

Commercialisation, privatisation and disaggregation

Pressure was applied to governments to operate more efficiently, in the case of utilities to ensure that governments received appropriate 'returns on their investments'. For example, an Economic Planning Advisory Council paper concluded that 'for many GBEs [Government Business Enterprises], particularly some of those involved in ... electricity generation ... there is still substantial scope to improve the efficiency and the profitability of trading operations' (Clare and Johnston, 1992: 43). Persistent pressure for improved productivity was partly responsible for the development of user-pays regimes across government businesses, including the utilities. Concerns were then raised that governments might exploit their quasi-monopoly in the utility sector, and various regulatory arrangements were put in place to ensure that the prices reflected 'real' costs of production.

A fundamental issue of conflict of interest arose with the commercialisation of the electricity supply: governments were required to supply energy at least cost, yet expecting commercial returns from electricity sales. The appointment of independent price regulators in most jurisdictions was aimed at providing one means of addressing part of the conflict but the essential tension between energy conservation and operating commercially remained.

Commercialisation soon morphed into microeconomic reform, driven largely by the acceptance that efficiency, both in public and private sectors, would be enhanced by competition. Australia's National Competition Policy was primarily designed to ensure that, where public ownership exists, competition should apply. This had several dimensions: for example, most states established some form of business review process to examine government ownership, with a view to increasing deregulation as one driver of competition (Howard, 1990). At the national level, in particular, government businesses that were operating commercially in contestable environments were privatised (for example, Qantas, the Commonwealth Bank, Telstra), though, under Labor, industries with significant public interest (defined largely as community service obligations) remained in public ownership (Aulich and O'Flynn, 2007). Later Coalition governments went further with their privatisation agenda by removing the caveats that Labor had instituted to 'protect' the public interest. A relevant exception arose under the Howard government when it decided not to divest Snowy Hydro in the face of concerted opposition from farmers, environmentalists, unionists and 'nostalgists'. Howard was reported as saying that 'There is overwhelming feeling in the community that the Snowy is an icon – it's part of the great saga of post-World War II development in Australia' (Higgins, 2014: 1).

The unbundling of public monopolies into competitive units was also an integral element in the report of the committee of inquiry on competition (Hilmer, 1993). This resulted in major pressures on the state-by-state electricity supply monopolies held by the big state corporations. Pushed by the anti-Labor forces in the conservative political parties, the states where these forces dominated quickly dismantled their supply networks, with big private companies not much concerned about state lines as they pursued their acquisition plans. In some states, however, the Labor forces had much firmer hold, so that there is still today a quite heavy representation of state-owned electricity suppliers.

Technological developments associated with advancement in accounting procedures have made it much easier to break the supply operation into its integral parts, basically generation, transmission and distribution, so facilitating thinking about part-sale possibilities and cross-state connections. International moves towards privatising electricity, for example from Thatcher's Britain, contributed to

the rise of microeconomic reform policies. As Beder (2003: 1) suggests, 'publicly-owned and state-regulated electricity monopolies were claimed to be so wasteful and inefficient that private companies competing in a free market could save enough money to both cut electricity prices and make a profit'. Through the 1980s even Labor interests came to see advantage in privatising public enterprises, and most of the state governments realised the huge budget-deficit alleviation possibilities to come from selling part or all of their electricity undertakings. Here the Kennett Government in Victoria led the pack, realising AUD\$22.5 billion from the sale of its electricity generators and distributors and \$6.3 billion from its gas distributors (Wettenhall, 1998; Walker and Walker, 2000; Collyer, McMaster and Wettenhall, 2001).

The organisational arrangements that emerged for electricity were highly disaggregated with many players, both private and public, operating at various stages of the supply chain. For example, at July 2011 electricity generation included 40 power plant owners across five states; the NEM transmission system involved five owners and 13 electricity distribution networks (AEMO, 2010). This disaggregated structure reflects the influence of 'post-bureaucracy' thinking (Barzelay, 1992; Aulich, 1999) that had promised 'a new generation ... of ideas about how to make government operations productive and accountable' (Barzelay, 1992: 117).

While competition was a major driver for the reforms, concerns were expressed that the public interest, however defined, needed protection as part of the microeconomic agenda. The Competition Principles Agreement, which arose from the Hilmer report, contained provisions to protect 'public interest'. The Chairman of the House of Representatives Standing Committee on Financial Institutions and Public Administration proclaimed that the public interest test was a 'pivotal element of competition policy', to be used to determine when the competition reforms were to be actually introduced by weighing up costs and benefits to the community. Competition was to be implemented to the extent that the benefits to be realised from competition outweigh the costs (Hawker, 1997). We argue that subsequent privatisation decisions with respect to the electricity sector invariably weighed private benefits far higher than the diminution of public interest.

The National Energy Market (or NEM)

The NEM began operation on 13 December 1998. Initially, it embraced 'the electrically connected states and territories of eastern and southern Australia': Queensland, New South Wales, Australian Capital Territory, Victoria and South Australia. Tasmania joined in 2005-06 when the Bass Strait Interconnector became fully operational. The NEM operates the world's longest interconnected power system, with over \$11 billion of electricity traded annually to meet the demand of almost 19 million end-use consumers. The exchange between producers and consumers works through a spot market where the output from all generators is aggregated and instantaneously scheduled to meet demand through a centrally-coordinated dispatch process, and it is charged accordingly (AEMO, 2010, 2017).

The organisational structure at the national level is complex. Representing a streamlining of the approach to federal law-making, the South Australian Parliament was given responsibility to process the National Electricity Law, with all other participating jurisdictions simply adopting that South Australian law by passing so-called 'application statutes'. The National Electricity Rules are made under that law. The central authority operating this distribution process is the Australian Energy Market Operator Ltd (AEMO).

Created by the Council of Australian Governments in 2009 and developed under the guidance of the Ministerial Council on Energy, AEMO replaced an earlier National Electricity Market Management Company dating from 1996. Describing itself as 'Australia's independent energy markets and power systems operator', it is responsible for operating the country's largest gas and electricity markets and power systems and services its shareholders with planning, forecasting, security and other critical advice (AEMO, 2017). Except for Western Australia and the Northern Territory which have their own arrangements, all Australian states and territories are now connected to the NEM and around 500 energy-relevant organisations, most private but some public or public-private, are members. Broadly its function is to balance demand and supply of electricity by working with generators to dispatch the supply of energy needed at any particular time.

Adding to the institutional complexity, there is an Australian Energy Market Commission to establish and monitor reliability standards (again established by South Australian legislation), and an Australian Energy Regulator (AER) responsible for the economic regulation of the wholesale electricity market and of gas transmission and distribution networks, this under a parallel national gas law and natural gas rules. The AER functions as an integral part of the Australian Competition and Consumer Commission.

These federal components of the NEM are well-enough described in industry documents, and in press commentaries they now attract much recognition and much criticism (for example, Sloan, 2017). Far less attention has, however, been given to how that market is currently organised at state and territory level. A compound report seeking to provide this information has been provided annually since 2007 by the AER. Described as 'flagship' reports (AER, 2017a), these reports are now long and complicated, reflecting the nature of the market itself, with a maze of separate organisations participating in it. The AER is well aware of the complexity of the field and makes no claim to have mastered all its detail: it records that its May 2017 report 'covers a period of intense energy market activity', welcomes 'comments from stakeholders, and may correct errors drawn to our attention' (AER, 2017a)¹.

The tangible features are generators and transmission networks. From the data in its possession, the 2017 AER report (AER, 2017b, section 1.5, Table 1.6, pp 43-44) records that 'over 300 registered generators sell electricity into the NEM spot market', and that 'market concentration in Victoria and South Australia has risen following recent plant withdrawals', 'government owned corporations own or control the majority of capacity in Queensland and Tasmania', 'private entities own most generating capacity in Victoria, New South Wales and South Australia', and, 'in New South Wales, the privatization of state-owned generating businesses was completed in 2015'.

The electricity transmission and gas pipeline networks are in no sense restricted by state and territory boundaries, and in respect of both the data presented show much crisscrossing of these boundaries. The AER report (2017b: 99) asserts that all the gas pipelines are privately owned; on the other hand, its maps and tables reveal a large variety of ownership arrangements through the electricity network, involving public and mixed public-private as well as private entities. Moves towards further privatisation in New South Wales (NSW) in the last few years have seen the controversial sale of urban power wires and poles to private interests.

There are some problems about the way in which these data are interpreted in the AER report. Notably, several references to Snowy Hydro record correctly that it is owned jointly by three governments (NSW 58%, Victoria 29% and Commonwealth 13%), but in the tables accompanying the report it is treated inconsistently as being privately-owned. Notably also, ActewAGL, the Australian Capital Territory's

(ACT's) home-grown supplier which trades in neighbouring areas of New South Wales as well as the ACT, is also treated as private, whereas it is now owned half by the ACT public enterprise ICON Water and half by Jamena, which is itself owned partly by the State Grid Corporation of China and partly by Singapore Power, both state-owned enterprises (AER, 2017b: Table 3.2). Also of particular interest is the Basslink undersea pipeline that has, since 2009, connected the public Tasmanian and mixed (part public, part private) mainland electricity systems, and is now owned and operated by the private Singapore-based Keppel Infrastructure Trust.

It is obvious that quite a few of the organisations listed have both private and public components in their governance structure, but the category of public-private partnership is not well understood in these compilations. Specifically, ownership by non-Australian public enterprises is treated as private, as in the case of Pacific Hydro (State Power Investment Corporation of China), Jamena (State Grid Corporation of China), and Petronas of Malaysia. These arrangements of state-owned enterprises of one country operating in the territories of other countries are now too significant for their effects to be so simplified (see Wettenhall, 1993).

The participating second-order governments have their own regulatory instruments, and they also provide data about industry organisation. As an example, the Queensland Department of Energy and Water Supply which regulates in that state reports that the 'electricity industry is made up of four distinct yet interconnected sectors ... generation, transmission, distribution, and retail', that the 'generation sector has a mixture of government and private ownership', that 'the transmission and distribution sector is entirely government-owned', and that, providing an interstate connection, the network of a NSW government-owned distributor extends into Southern Queensland (Business Queensland, 2016: 1). Comparable data about other state regulatory systems are generally available.

In the 2014–2017 period there were two major reviews seeking to carry forward the search for an appropriate national energy policy; the extent to which they succeeded in this quest remains for later assessment. The first was a response to a Council of Australian Governments (COAG) commitment to review the governance arrangements in the NEM five years after the establishment of AEMO; it was entrusted to a review panel headed by economist Michael Vertigan. Somewhat surprisingly in view of all the dissatisfactions recorded above, the COAG Energy Council's assessment of the review was that these arrangements were fundamentally sound and among best practice internationally; they concluded that 'Australia's energy market governance ... relies on clearly specified and stable policy and appropriate regulatory objectives, delegation of some roles to specialist institutions and importantly, institutional separation' (COAG Energy Council, 2015: 1). For the second report, the Energy Council asked a team headed by Australian Chief Scientist Alan Finkel to recommend enhancements to the NEM – echoing some main ideas in the Boehm article with which we began this paper – to optimise security and reliability. Finkel reported in June 2017 with an important policy document which, after an exhaustive inquiry, canvassed the benefits and costs of virtually all non-hard coal generating options (Finkel, 2017).

Assessing public interest dimensions of the NEM

The literature of public administration/public management devotes considerable space to considering the rival merits and capacities of public ownership and private ownership (see, for example, Aulich, 2011). With that understood, a first point to be made here, in considering the many organisations now

operating within NEM, is that on any objective test they represent a *mélange* of public-ownership, private-ownership and mixed public-private-ownership entities. A second point, however, is that reportage from within the industry itself misses not only the mix element but also, wrongly, attributes private ownership to many cases that fall within the public-ownership category. In doing this, it reflects the dominant conceptual approach that came with the growth of New Public Management theory in the later 20th century, which sees much virtue in private structures, and which has infected so much governance practice over the past few decades. The consequence is that issues such as transparency, accountability, the government-industry relationship, and the value of the contribution of the several groups of participants to policy development all receive less attention than they deserve in reporting and debates about NEM.

Having noted this lack, we focus here on the public interest test suggested by Boehm in the 1950s, though acknowledging that a third public interest issue has arisen since the Copenhagen and Paris discussions on climate change and the global reduction of carbon emissions. Boehm's test was based on two considerations: electricity security (reliability, continuity and sufficiency of supply) and economy (the cheapest supply to consumers). To this, we need to add another major policy-related issue: the extent to which tensions between profit-making and energy conservation impact on the system.

Security

The view that Australia has an energy crisis became popular after the supply failure in South Australia in 2017. Blame for this failure was attributed by the Commonwealth government to South Australia's overly ambitious renewable energy targets, though AGL Energy saw it as a dysfunction of the gas market (Murphy, 2017c). The national regulator, AEMO, warned that declining gas production could result in a shortfall of gas-powered electricity generation impacting on NSW, Victoria and South Australia from the summer of 2018-19 (Murphy, 2017a).

Concerns about reliable supply have led to a response from the South Australian government that it would 'go it alone', arguing that 'the national market is now widely considered to be failing' (Premier Weatherill quoted in Sommerfield, 2017; also Quiggin, 2017). This is the first state to challenge the so-called advantages inherent in any integrated national system, and raises the prospect of fragmentation of the market. At heart, the South Australian response exposed major fault lines between those who have greater faith in the future of renewables and those who see a more prominent place for coal-based systems; and between proponents of funding for 'clean energy' policies and those for support of 'clean coal' development. With the 2017 release of the Finkel report and its recommendations for clean energy targets, these fault lines have been widening not only between the states and the national government but within the Coalition parties as a number of states are now implementing 'very reasonable and obtainable renewal targets' consistent with the Finkel report (Denniss, 2017).

The Finkel report tried to address the issues of system reliability (meeting demand), security (the capacity to tolerate 'disturbances'), and governance (ensuring that the electricity market can run effectively) (Finkel, 2017). The report recommended changes to improve system reliability through enhancing demand response at times of extreme pressure in the supply system. The report was predicated on the continuing existence of collaboration between governments together with a consortium of players in competition with each other in the wholesale electricity market. But recent events point to a dilution of such collaboration.

The South Australian plan involved investment in a publicly-owned gas plant and a 100-megawatt battery storage facility to help stave off the danger of future blackouts (Pears, 2017). This state action imposed strains on the NEM regulator who is responsible for managing the supply of electricity, especially as South Australia had passed legislation to give power to the state's energy minister to override the NEM's operating rules (Sommerfield, 2017).

That there were few effective constraints on gas producers accessing the more lucrative overseas markets in preference to local ones required a policy response by the federal government to ensure that supplies are 'reserved' for local markets, as they are in Western Australia. Such a policy was explicitly ruled out by the Gillard government (Martin, 2017). Prime Minister Turnbull has attempted to force gas providers to free up more gas for the domestic market, though emergency export restrictions may be seen as an intervention of last resort for a party built on free-market principles. However, at the time of this writing, there appear to be few incentives offered to the private owners of gas resources to meet local demand. The absence of a clear national policy has allowed such market distortions to occur, despite the recommendations of numerous policy reviews over the past two decades.

One of the promises of commercialisation and competition was that markets would recalibrate to ensure supply at market prices and that the proper role for government was to be just one player in that market rather than as a regulator. It is, then, interesting to note that, in the absence of any reserve policies for domestic gas supply, the Turnbull government was forced to intervene in the market through threats (to impose an export tax) rather than allowing those markets to operate less encumbered by government intervention. The agreement signed by gas exporters was not specific on price, referring to 'the good faith offering of gas to the domestic market on reasonable terms' (Wood and Blowers, 2017: 1).

That such market distortions occur points to the policy vacuum that has over-ridden the recommendations of the policy reviews noted above. AEMO has produced a report arguing for several additional interconnectors to strengthen links between states, at a cost somewhere between half and one billion dollars each. While there has been a history of national government financial support for interconnectors, the Turnbull government refused such support on the grounds that these are state responsibilities (Tingle and Ludlow, 2016). As there is little argument that the interconnectors are needed to guarantee supply, the question arises as to who should pay. Given state and federal government positions, it may be left to private providers, who would, of course, expect a 'fair' return on their long-term investment, with AEMO admitting that costs would then be borne through higher electricity charges for consumers (quoted in Tingle and Ludlow, 2016).

In the longer-term, however, policy options that aim at slashing carbon emissions must be implemented if Australia is to meet its international obligations. Thus far, the Turnbull government has shown a distaste for such policies, and it has not attempted to underwrite the development of renewable energy, especially energy storage.

Prices

Globally, advocates of privatisation promised greater efficiencies and lower energy prices. However, the failure to accompany privatisation with appropriate regulation and enforcement has left many countries with poorly governed energy sectors and increases in prices (Florini, 2010). This crisis of

governance has also affected Australia, and it is clear that energy prices have risen rather than fallen as predicted by these advocates.

To some, especially in the union movement, the privatisation of the electricity market has been the cause of price rises; to others, such as *The Australian* newspaper and Infrastructure Australia, further privatisation in NSW would yield price falls of 17 percent (*The Australian*, 2016). A more balanced fact-check by an Australian Broadcasting Corporation (ABC) review team reveals that privatisation is not the key factor in price rises (and by inference, projected price cuts). The ABC team concluded that 'whether comparing electricity bills, prices or the relative price index of electricity in each state, there is no consistent link between privatisation and what consumers pay for their electricity' (ABC, 2016: 1). This finding accords with broader conclusions about privatisation: that ownership is not as critical an issue in determining organisational performance as is the level of effective control and regulation by government and the robustness of the competitive environment (Aulich, 2011).

What is clear, however, is that competition has failed to deliver on its promise of lower prices, as average electricity prices have risen by 70 percent in real terms from 2007 to 2012 regardless of ownership (ABC, 2016). Australia's residential electricity prices are among the highest in the world with residential prices in Canada and the United States typically less than half those in Australia. The Grattan Institute argues that these high prices are explained not by high costs but by excessive profits or 'gold-plating' (Mountain, 2017; Wood, 2017). This conclusion is supported by Quiggin (2017), who concludes that prices have risen because the NEM regulatory system has allowed rates of return on capital far higher than those that would be needed to finance the system under public ownership. One relevant factor is that the NEM is an energy-only market, where generators only get revenue when they sell their electricity. The revenues then have to cover the initial capital costs of building the plants, which serves as an incentive to keep electricity charges higher and a disincentive to new entrants to the market.

Quiggin (2017) has suggested that the electricity grid should be purchased by governments both to keep a cap on costs and to better manage the integration of the supply chain, this to overcome some of the disputes and tensions between distributors and owners and the failure to regulate to better handle the business as a whole. As a consequence of price rises, electricity prices are consistently the top cost-of-living concern for households (Mountain, 2017).

Role tensions

Whatever solutions are suggested to the 'crisis', there are political dimensions that need to be considered. On the one hand, the system is designed to enable providers at all stages of the supply chain to make profits; on the other hand, there are global pressures and commitments that suggest solutions with zero or very low greenhouse emissions that may impact on those profits. Federal and state governments have broader environmental obligations and choices in determining the energy mix for their jurisdictions, affecting the degree to which they will honour or contribute to their environmental policies and global responsibilities to ameliorate climate change. These roles require an active intervention in the market despite the potential that this may have to frustrate generators and distributors seeking to maximise their investments.

Further, publicly-owned agencies, especially including government corporations or business enterprises, must make their activities and their business finances open to both parliamentary and public scrutiny. Typically, this is not required of privately-owned firms, even those in partnership with

government-owned entities, usually because of the argument that it may breach commercial-in-confidence considerations. Parliamentary scrutiny is possible even where there are security issues, so there should be no constraints to full parliamentary inquiry about important issues such as potential abuse of market power. Market-distorting behaviours by participants in the electricity industry were reported in 2011 by the Australian Energy Regulator, who found that generators withheld supply to drive up prices in periods of peak demand and used 'strategic pricing' to exclude new competitors from entering the market (AER, 2011). These matters require transparency if the public interest is to be protected.

Developing a new energy policy

The shift from integrated state-based electricity systems to a national system containing such a variety of ownership types has exposed problems created by the absence of an agreed national energy policy. At present, any policy has largely been the product of market operations with 'light' oversight and regulation, very much a textbook case of market-driven service delivery. However, numerous stakeholders in the energy market have lamented the lack of an agreed, stable and coherent policy to give greater certainty to those wishing to invest in the industry as well as making a strong contribution to ensuring greater energy security and economy. Despite its generally positive finding (noted above), the Vertigan report concluded that 'a strategic policy deficit exists which has led to diminished clarity and focus in roles, fragmentation and a diminished sense of common purpose' (Vertigan et al., 2015: 7). This broad conclusion was supported by others such as the Grattan Institute which argues that the present 'mess' is a result of poor or absent climate change policy (Wood, 2017)

In the decade following the election of the Rudd government in 2007, Australian governments have failed to implement numerous suggested policies to address climate change: an emissions trading scheme, the Carbon Pollution Reduction Scheme, the Carbon Pricing Mechanism (the so-called Carbon Tax) and the Finkel review's Clean Energy Target. The difficulty in establishing a national energy policy has been a consequence of a longstanding debate about climate change, including specifically the position of coal and carbon emissions. The policy process has staggered with little consensus between the major parties about the direction that new energy policy should take.

The squabbling over climate policy has been a key contributor to the failure to produce a coherent, longer-term energy policy. Sustained support for coal by a group of conservatives within the Coalition has provided a divisive voice and a rallying point for those government members who are yet to be convinced about the science of climate change. This uncertain policy environment has been blamed for higher energy costs to consumers because it has led to a lack of investment in new generators to replace closed coal-fired power stations (Heath, 2017).

The Turnbull government made an attempt to address the absence of national energy policy by asking Chief Scientist Finkel and a review team to prepare a report which could provide a framework for such a policy. While accepting many of Finkel's recommendations, the government rejected the major option of introducing a Clean Energy Target in favour of a proposal to introduce the National Energy Guarantee (NEG). The NEG will require electricity retailers to make some power available at all times while also ensuring a reduction in the electricity sector's greenhouse gas emissions by 26 percent by 2030 (a 'reliability obligation'). This, according to the government, will save the average households up to \$115 per year (Pears and Skarbek, 2017) while improving reliability and meeting Australia's

commitments under the Paris climate treaty: in other words, meeting the criteria of supply reliability, economy and international commitments.

At this stage, full details of the NEG are not available, especially the modelling involved. Because details of the proposal are scant, the new policy has yet to be fully debated in Parliament with experts divided as to the possible effectiveness of the policy. However, it is a strong attempt by government to formulate a national energy policy which may even receive bipartisan support when details are published. If so, it may signal an end to the mess that has been energy policy for more than a decade.

Conclusions

The electricity supply industry is a natural monopoly in a number of ways. The entry costs for new providers are extremely high, thereby limiting the access to well-funded corporations. Disaggregation within the supply chain has increased contestability with more firms being able to access the competition. Nevertheless, and despite the now quite large number of participants, the present arrangements in Australia constitute an oligopoly dominated by two to four principal regional firms, each exercising considerable market power (Toner, 2012). Further, market constraints exist at the level of consumption: consumers are largely price-takers as few can realistically 'switch off', and few can be excluded from the market, given weak support arrangements for low-income households in most states. Given these market characteristics, it might be expected that governments would assume the role of regulator, provide oversight on prices, strategic development of assets and infrastructure, and form policies that enable the supply chain network to operate more smoothly. All these responsibilities can be packaged under the umbrella of 'maintaining the public interest' in supply.

It is clear that, in the Australian electricity arrangements, this market oversight responsibility is not being accepted by national governments who leave regulation in the hands of a mix of public and private organisations in the hope that they will somehow be willing and able to collaborate sufficiently well to overcome the policy gaps. As Murphy (2017b: 1) concludes, the lack of a stable, bipartisan policy framework 'has created an investment strike in big generation assets at a time when some of our coal-fired power stations are reaching the end of their operating life'.

It is hard to disagree with Quiggin's conclusion that, 'after 25 years, the promised outcomes of reform – cheaper and more reliable electricity, competitive markets and rational investment decisions – are further away than ever' (Quiggin, 2017: 1). The creation of the NEM has failed to lower power prices and improve system reliability or environmental sustainability. It is also difficult to see how the patchwork of players, without national government leadership, can be shaped so that Australia can meet the emissions outcomes that it has signed up to in relation to global warming.

The conclusion must be that the disaggregated, disconnected market is not working sufficiently well to provide reliable electricity at affordable prices and that some further radical reshaping of the market is now needed. Quiggin's preference for a single all-encompassing national public enterprise is unlikely to attract much support in today's political climate. We suggest a single publicly-owned statutory regulator at the national level, armed with all the regulatory powers currently distributed over a variety of agencies operating at both state/territory and federal levels. It would then be possible to allow for competition between public, public-private and privately-owned generators, transmitters and distributors. In this way, the public interest is more likely to be served.

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Endnote

¹ This report is in large parts technical in character; it contains much detail and seeks to cover all the major structural aspects of NEM operations. In our commentary, we focus only on its coverage of the structural aspects.