

# Current trends and perspectives in Australia

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## Introduction

### Policy scope

There are several different dimensions of energy policy:

- exploration and development of coal, gas, petroleum and uranium resources;
- export policies; and
- policies concerning the transformation delivery and sale of these and other energy sources (principally hydro, wind and solar).

It is this third facet that is the prime concern of this chapter. Although exploration and development, and exports are vital to the national wealth (energy comprises over 35 per cent of exports) they are addressed only in so far as they have a bearing on the supply of electricity and gas to domestic consumers.

Electricity supply has four components: generation, comprising 30-50 per cent of costs; local distribution, with 40-50 per cent; long distance transmission and retail (billing etc) each with about 10 per cent of the costs. Gas has a similar structure.

In the space of 30 years, policy interventions in electricity generation and gas exploration have shifted Australia from world leader to world laggard in the efficiency of its reticulated energy supply industries. The cause of this stands squarely with government. As well as being of considerable direct importance to households, energy prices and reliability are vital to the costs of all activities, hence policies of federal and state governments covering the domestic gas and electricity industries have created an economic tragedy for the nation.

### The energy policy journey

With regard to the electricity industry, 25 years ago, the nation was a pioneer in global moves to replace central control of electricity supply with a market-based system based on competitive provision in generation and retailing.

Observing the benefits of electricity provision from a competitive market in several US jurisdictions and in the newly liberalised and privatised UK market, from the early 1990s Australia embarked upon the series of reforms. One catalyst of these reforms was, ironically, the result of the near bankruptcy of Victoria's state government, leading to the election of the Kennett government, which reformed and privatised the state's gas and electricity assets.

Learning from some unwanted effects of inadequate competition followed Britain's electricity privatisation, the Victorian government tempered its goal of maximising the return from asset sales by a strategy that created sufficient entities to ensure competitive tensions. This was important to prevent market power and excessive prices and to drive cost cutting. The disaggregation of the assets into separate entities was accompanied by

the adoption of a bidding process for generator scheduling, modelled on those in place in Pennsylvania, New Jersey and Maryland (PJM) and the England and Wales markets.

Partly as a result of transmission links between the different state systems and partly because of government policy, other states adopted similar reforms to that of Victoria. The previous monopolistic supply by five government entities in the four interconnected states (all except Western Australia, the Northern Territory and Tasmania) was replaced by two dozen independent rival generator businesses. Though several of these were government owned (and this remains the case in Queensland) competition and less direct political control due to the corporatization and disaggregation of the government generators brought about vast improvements in availability of supply and considerable cost reductions.

The outcome was an upgraded electricity supply that was already relatively cheap because of the nation's abundant, low cost coal reserves that are conveniently located close to major markets. The introduction of competition and profit-oriented private owners brought great changes in generator costs, including a more than fivefold saving in the heavily unionised labour force employed within the industry.

Competitive provision was also introduced in the retail sector with the individual state monopolies being replaced by some thirty rival suppliers. Distribution and transmission, as natural monopolies, were subjected to independent regulation over their prices and connection conditions.

Hence at the turn of the present century Australian electricity supply was cheaper than that of any other major nation and highly reliable. Generation was around 85 per cent coal with the rest split between gas and hydro.

### [The resurgence of the regulatory state](#)

#### [Electricity power costs](#)

Uniquely throughout the world, and reflecting a governmental response to concerns, however unfounded, that link nuclear energy to nuclear war, nuclear power is illegal in Australia. But the high costs of nuclear power, in the context of Australia's low-cost coal, has probably meant Australia's ban amounted to virtue signalling. This may no longer be the case now that [smaller modular reactors](#) are becoming available.

However, the Australian regulatory malady soon spread beyond nuclear power anxieties. No sooner had Australia achieved its peerless position in electricity supply, when government regulatory initiatives started to undermine it. By far the most important of these initiatives was the reinvention of measures, which were originally put in place in response to fears about resource depletion, to require retailers to assist in reducing demand for fossil fuels. Such fears about a coming resource depletion have a long history dating back from [Jevons](#) the most respected economist of the late 19th century and were seen in Meadows et al with the influential [Club of Rome](#) notions of 1973. The famous [wager](#) between Julian Simons and Paul Ehrlich put to bed the issue of impending resource depletion.

Commencing in 2002, in a measure which then Prime Minister John Howard has described as his worst political blunder, requirements were introduced for an increasing share within

generation of renewables (excluding large scale hydro, new supplies of which were banned on environmental grounds and remain so). The level of renewables required – the Renewable Energy Target (RET) - was set at 9,500 GWh by 2012, ostensibly two per cent of “additional” energy.

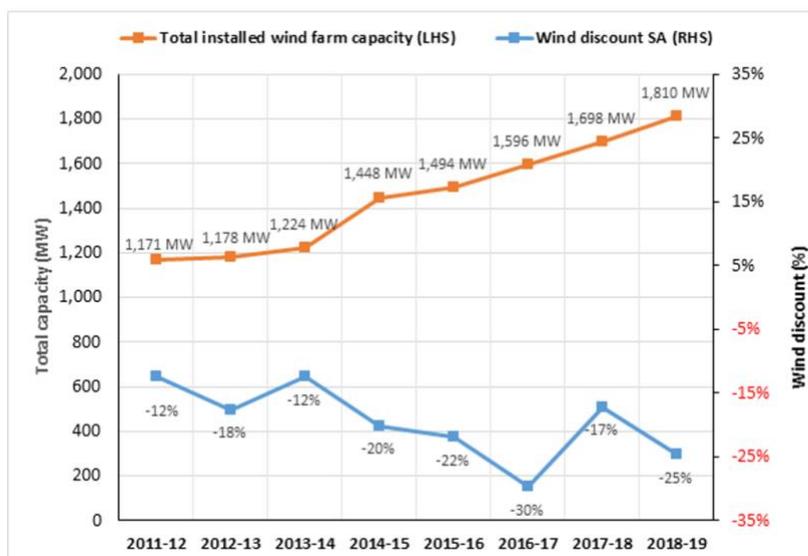
Once in place, there was unrelenting pressure to increase the renewables share and its associated subsidies. The Howard government itself commissioned former Senator Grant Tambling to review the program. His 2006 report, which the government did not accept, recommended a 50 per cent lift in the mandatory renewables level.

The Rudd ALP government, elected in 2007, was intoxicated by climate concerns. Rudd’s first major act was the ratification of the Kyoto agreement to limit greenhouse gas emission growth. The Howard government had signed this and, though not having ratified it, was abiding by it with the renewable energy program and measures to prevent [land clearing](#). Rudd expanded the renewables requirements to gradually grow to 41,000 GWh annually together with acceding to an unlimited number of small-scale units (roof top panels), subsidised at a lesser rate; these are running at over 10,000 GWh per year. State governments introduced additional subsidy-dependent renewable energy requirements.

The subsidies that these measures entailed came, via retailer obligations, from consumers, impacting on bills and on the competitiveness of (subsidy-free) fossil fuel generators. For several years, renewable energy subsidies may have contributed to keeping prices low by adding capacity with low marginal costs to an inflexible existing coal-based supply. The price outcome of renewables’ guarantee subsidy varied between \$35 and \$90 per MWh, far in excess of the \$30-50 per MWh electricity wholesale price<sup>1</sup>. This meant renewable generators would automatically run, if available, irrespective of prices offered by other generators.

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<sup>1</sup> The renewables’ price advantage is tempered by wind’s reduced available during (hot, still) high price events, which brings about a discounted average price on the spot market. This is illustrated [below](#) for South Australia.



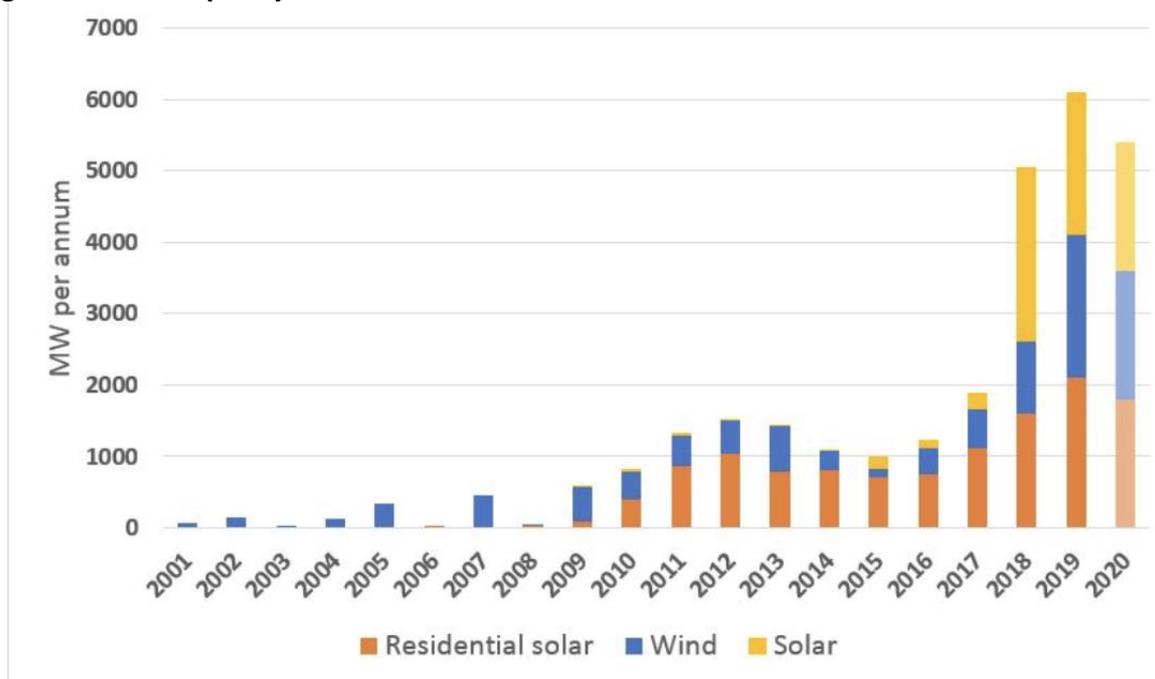
The most reliable estimate of different power source costs was undertaken for the Minerals Council by Solstice/GDH. Table 1 summarises the costs of alternative power supplies.

**Table 1: Cost estimates of different sources of generation**

|                             | Capacity factor | capex  | Fuel   | O&M    | Tax 30% company | Total  |
|-----------------------------|-----------------|--------|--------|--------|-----------------|--------|
|                             | per cent        | \$/MWh | \$/MWh | \$/MWh | \$/MWh          | \$/MWh |
| 650 MW black coal low       | 87              | 17     | 11     | 8      | 4               | 40     |
| 650 MW black coal high      | 87              | 22     | 35     | 15     | 6               | 78     |
|                             |                 |        |        |        |                 |        |
| 650 MW gas ccgt low         | 82              | 9      | 55     | 3      | 2               | 69     |
| 650 MW gas ccgt high        | 82              | 14     | 86     | 12     | 3               | 115    |
|                             |                 |        |        |        |                 |        |
| 650 MW solar low            | 20              | 62     |        | 12     | 16              | 90     |
| 650 MW solar high           | 20              | 127    |        | 19     | 26              | 171    |
|                             |                 |        |        |        |                 |        |
| 650 MW wind low             | 37              | 42     |        | 12     | 14              | 64     |
| 650 MW wind high            | 37              | 68     |        | 33     | 12              | 115    |
|                             |                 |        |        |        |                 |        |
| 650 MW solar + battery low  | 96              | 263    |        | 22     | 44              | 328    |
| 650 MW solar + battery high | 96              | 782    |        | 29     | 102             | 913    |
|                             |                 |        |        |        |                 |        |
| 650 MW wind + battery low   | 96              | 156    |        | 20     | 36              | 211    |
| 650 MW wind + battery high  | 96              | 577    |        | 43     | 73              | 693    |

Subsidies have led to an extraordinary growth of new capacity in wind and solar as illustrated in Figure 1

**Figure 1. New capacity installations**

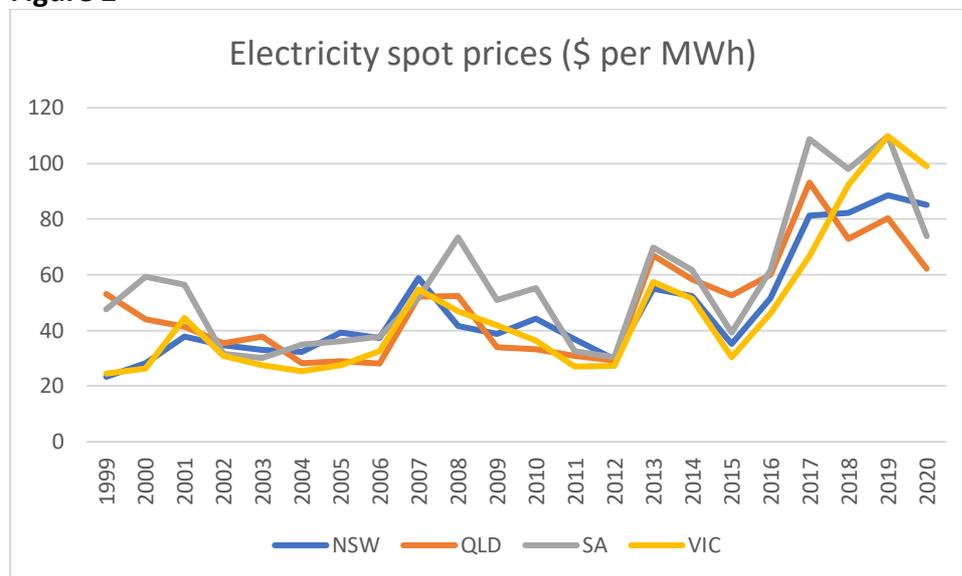


The initial effect of increased renewable supply was reduced incentives for additional commercial supply (the latest major coal-fuelled electricity supply source was commissioned in 2006). This injection of subsidised renewable supply impacted upon the profitability of coal plant, both by reducing the hours it could operate and by imposing stop-start operating costs on plant designed for continuous operation. These factors disincentivised major maintenance expenditure.

In 2016, the fermenting effect of subsidies to wind and solar on coal plant profitability brought closures of South Australia’s Northern and Victoria’s Hazelwood power stations.

These closures took out about four per cent of national electricity capacity from stations that had been supplying around seven per cent of demand. The upshot (see Figure 2) was a two-and-a-half-fold increase in the wholesale price compared with 2008 in a period during which overall inflation was 30 per cent.

**Figure 2**



Source: AEMO

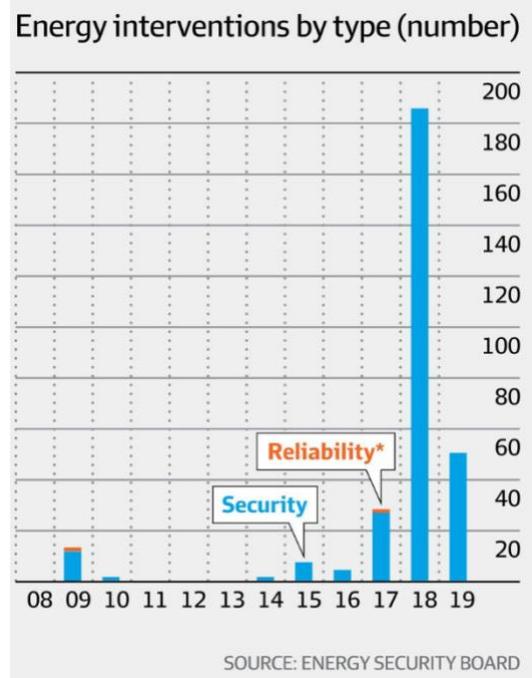
The increased prices (which collapsed in a COVID dominated 2020) have been accompanied by much greater price volatility as a result of the intermittent nature of wind.

The large share of subsidised wind capacity in South Australia, where wind supplied 44 per cent of the state’s energy in 2018, has brought increasingly common negative prices which prevailed for 9.9 per cent of the time in [August 2019](#) in that state. Such events are also seen in other states – on September 4 2019, the electricity spot price in Queensland was stuck at the -\$1,000/MWh regulated floor price for several hours.

In addition, the displacement of coal generation by wind and solar has reduced stability and brought a deterioration of reliability. One result of this was the complete loss of power in South Australia during September 2016. Although it is claimed that new requirements (or the proper application of extant requirements) will prevent a recurrence of that blackout, at a minimum the new supplies have necessitated a considerable intervention (and associated

costs – amounting to \$44 Million in 2019/20) by the market manager, as illustrated in Figure 3, to shore up system security.

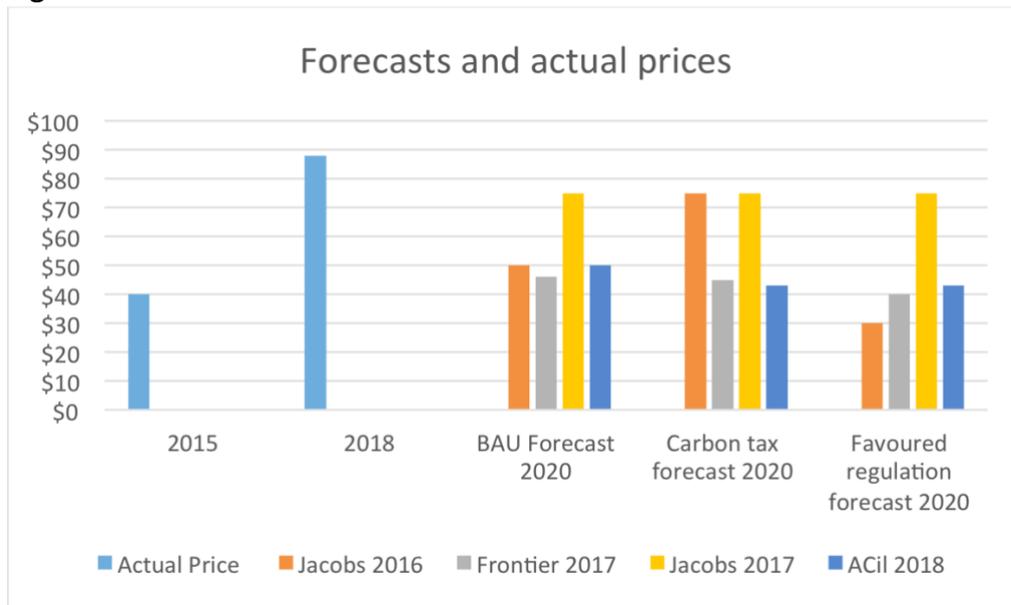
**Figure 3**



Reliability concerns remain and have spread to [Victoria](#), which on one isolated hot day, Friday December 20<sup>th</sup> 2019, came close to failure when output from wind farms gradually fell to one third its earlier levels. This was in spite of the fact that 9 out of the 10 major fossil units were on line, and demand was 15 per cent below previous peaks.

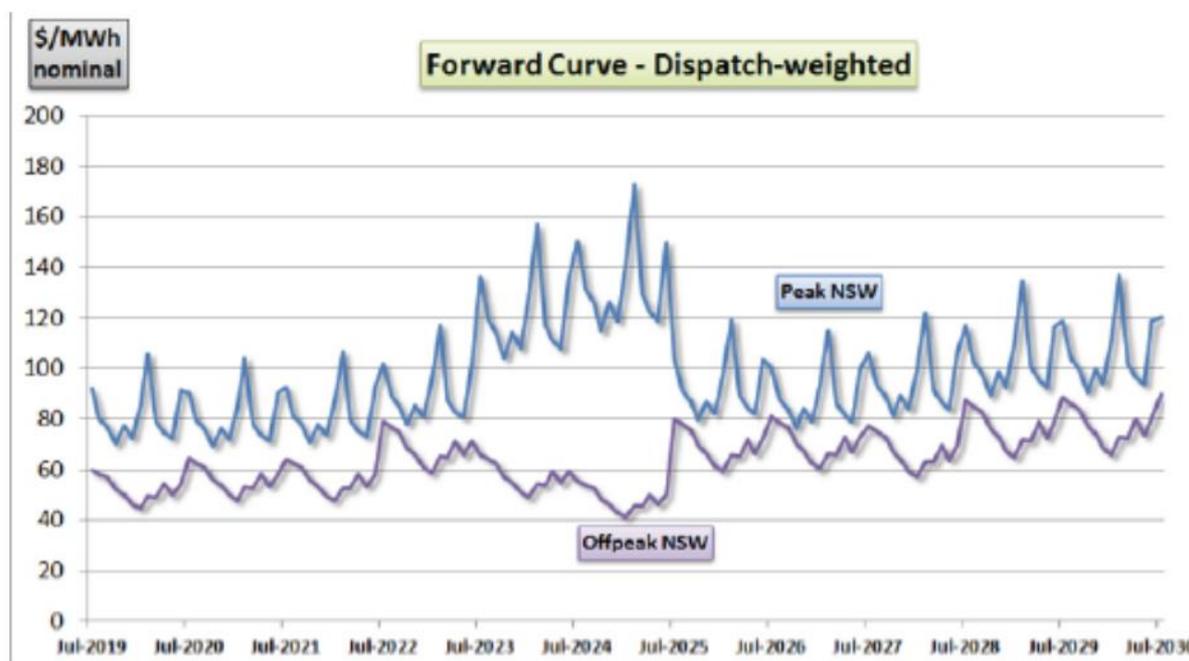
Government commissioned studies have usually shown a high degree of optimism over future renewable costs. This, together with sanguine expectations that the existing generators would continue to run, even with mounting financial losses, brought consultants to consistently forecast imminent falls in prices. As indicated in Figure 4, forecasts commissioned by governments failed to pick the doubling of wholesale prices 2015-2018 and estimated that such levels would not even have been reached with an intensification of the regulatory measures then in place.

**Figure 4**



Future prices (see Figure 5), though likely to moderate in the near term as a result of a bulge in new renewable installations, indicate no long term decline.

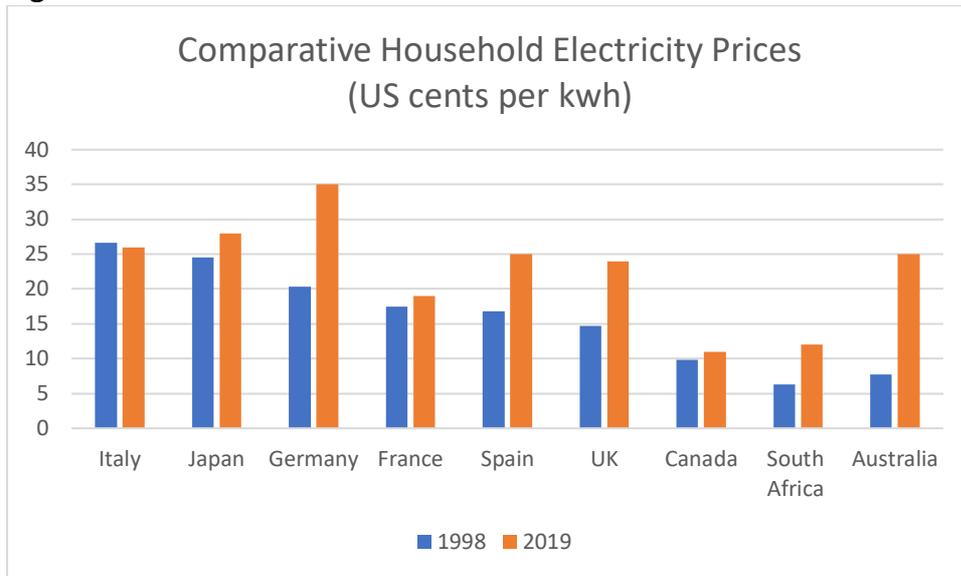
**Figure 5**



Source: [Marsden, Jacobs](#)

The higher wholesale prices are reflected in cost to the final customer, though the increased wholesale and environmental cost are muted by the relatively large share of total costs accounted for by networks, costs which have not shown the price escalation seen with generation. Even so, as evidenced below, Australian electricity prices have increased far more than those of other countries.

**Figure 6**

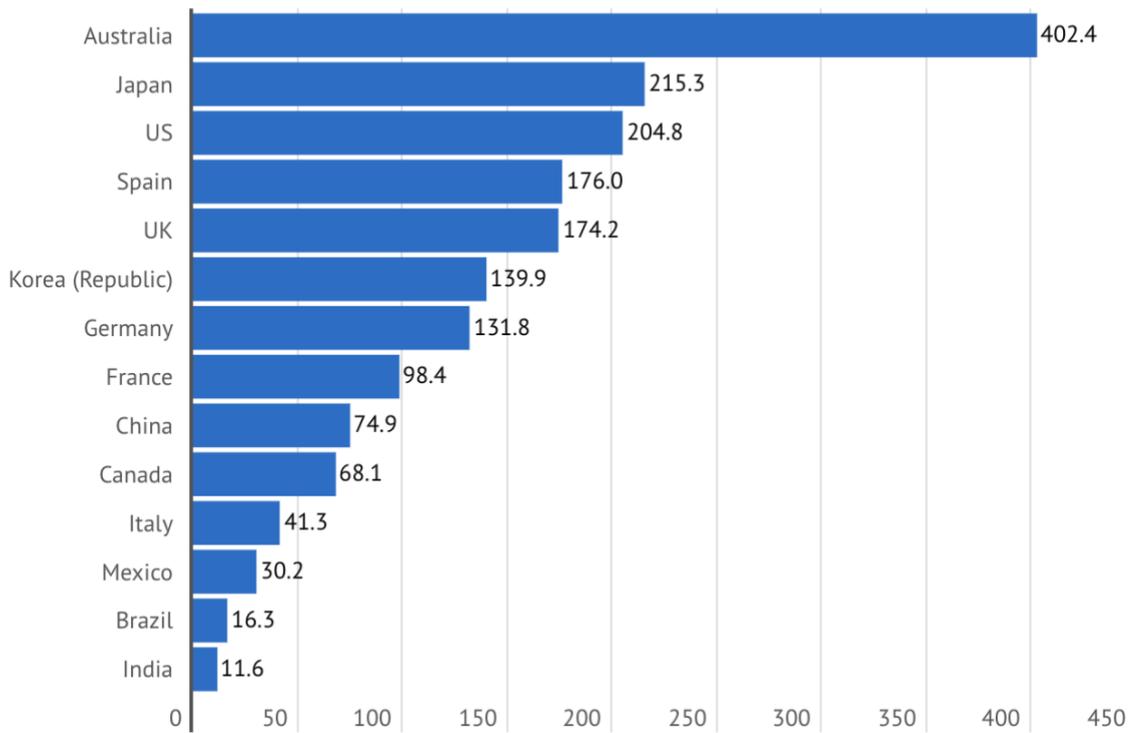


Sources: 1998 ESAA, 2019 [https://www.globalpetrolprices.com/electricity\\_prices/](https://www.globalpetrolprices.com/electricity_prices/)

Comparative data was not available for the US, China and India in 1998 but average household prices for China and India in 2019 were one third of those in Australia; US average prices were boosted by high prices in some States but averaged a little under one half of those in Australia.

While subsidies to renewables have been a feature of all OECD nations' electricity policy, as well as that of some developing economies, Australia is being far more indulgent in this regard. Per capita investment in Australia was almost twice that the next two highest countries, US and Japan), fivefold that in China and almost fortyfold that of India. Figure 7 illustrates this.

**Figure 7**  
**Investment in clean energy (\$US/per capita)**

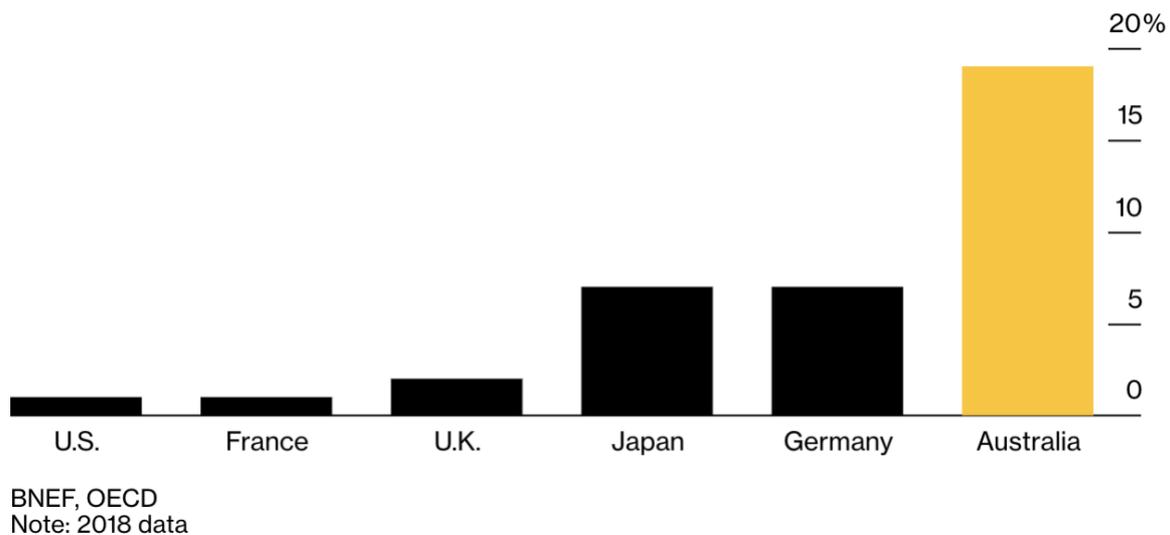


SOURCE: BLOOMBERG

Supplied by Minister Taylor [AFR](#)

Australia also leads the world in rooftop solar, as shown in Figure 8, for which subsidies provide 30-40 per cent of the capital cost. [AEMO's](#) draft 2019 Integrated System Plan noted that, "Some 3,700 megawatts (MW) of new capacity has entered the NEM since summer 2018-19. The bulk of this new capacity (some 90%) is rooftop PV and grid-scale solar generation." AEMO's modelling projects that these facilities could provide 13% to 22% of total underlying annual NEM energy consumption by 2040. Rooftop solar is far more prevalent in Australia than in other countries as shown in Figure 8. (Some have suggested this is due to Australian solar radiance but in areas of high population, [Australia](#) is not especially rich in sunlight).

**Figure 8**



Australian high take-up of (heavily subsidised) wind and solar energy has not prevented Australian policy being criticised for its inadequacy by The Greens and the Labor Party Opposition and being lampooned with “fossil of the day” awards by activists attending UN Climate Conferences like that in Madrid in December 2019. The Australian Government has also been criticised for its reluctance to formally commit to “zero net emissions by 2050”.

#### Electricity network and other costs

The AEMC put the 2019-20, the national weighted average electricity bill for the representative household consumer at approximately \$1,375 exclusive of GST. This was made up of:

- 44 per cent regulated network component
- 40 per cent wholesale market component
- 6 per cent environmental policy component
- 10 per cent residual component (comprising retailer’s operating costs, customer acquisition and retention costs, return for investing in the business, and estimation errors)

(Note: the environmental component includes only the direct expenditures and not the effect of these in boosting wholesale prices two-and-a-half fold.)

Network charges have also increased over recent years but at less than the general rate of inflation in those states where there is private ownership of networks (Victoria, South Australia). Higher increases have taken place in Queensland, Western Australia and Tasmania, where continued government ownership of the networks remains and in NSW where partial privatisation took place only in December 2015.

This is not coincidental. There are greater disciplines on costs in privately owned networks. All networks will approach the regulator (the AER) with ambit claims for future expenditures and therefore the prices they are permitted to charge. For private investor-owned

networks, the shareholders' representatives (the Board of Directors) will force economies in management's actual expenditures in order to boost profits. This provides a base on which the regulator can determine future permissible expenditures for rate setting purposes. With government ownership, these disciplines are much less forceful: having set a budget based on the allowable expenditures sanctioned by the regulator, government owned businesses face far fewer pressures to economise on these expenditures.

Privatisation, however, remains unpopular based on fallacious notions that it involves loss of public assets and a replacement of public service by commercial motives.

Depending upon the size of load, the cost of generation for business customers tends to comprise a larger component – up to 70 per cent for smelters – than is the case for households. The pattern of increased customer costs for electricity is, however, evident with prices to businesses as well as households. Indeed, the uplift in electricity prices has impacted severely upon energy-intensive industries, especially aluminium smelters, which formerly spearheaded the nation's industrial competitiveness. Although the smelters' electricity is largely exempt from the renewable requirements, and is on long term contract, these contracts are facing renewal. Their replacement at threefold former prices is leaving the smelters dependent on government support for their on-going operations.

In this respect, Australia's strong relationship with the Trump Administration may have averted further pressure. Notwithstanding the overt government life-support, Australian aluminium exports to the US have avoided the countervailing tariffs imposed on subsidised aluminium from other nations in spite of having made sales gains.

One aspect of the industry that has boomed is the bureaucracy governing it both at the formal level of control and in the political oversight. The initially relatively small agencies responsible for operational management (AEMO), the legal features of trading (AEMC) and price fixing on the monopoly poles and wires (AER) have all sought and been given expanded resources and responsibilities for policy advice. New agencies have also been created including the Energy Security Board (ESB) and expanded roles have been given to the ACCC and various technical agencies like the CSIRO. Ministerial councils and individual state governments have also assumed considerable controls. Quantifying the costs of increased oversight is difficult because the regulatory agencies, perhaps understandably, do not assemble the material in a way that enables easily comparisons.

Unsurprisingly, the expanded oversight over the industry by bureaucrats and politicians has been inversely correlated to its efficiency.

## Gas

For gas, a similar pattern of price increases to that of electricity is evident. Gas is now responsible for close to 20 per cent of electricity generation (coal is 60 per cent, hydro 7 per cent and wind/solar 13 per cent). Its availability has been progressively squeezed by state government policies (in this respect there is little difference between the ALP and the LNP).

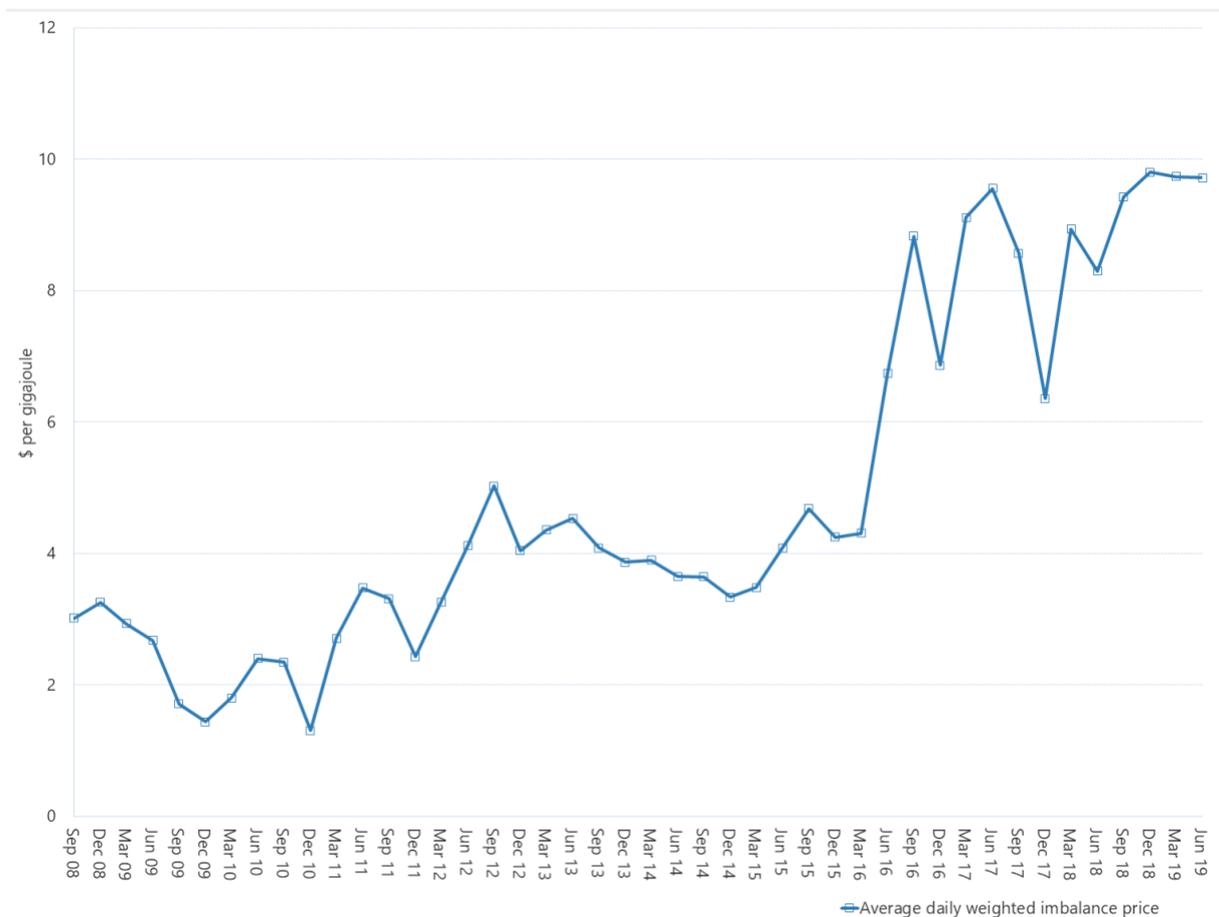
Responding to unsubstantiated scares about safety of fracking as a means of tapping gas reserves, exploration (let alone new production) for gas that would require this process has

been virtually banned by all governments except that of Queensland (where most new gas is contracted to overseas markets). Fracking itself has been around for 65 years and two million wells have been sunk worldwide – mainly in North America. Although green groups raise scare campaigns, the US [EPA](#) has found the practice, with appropriate care, is safe with only “isolated cases of water contamination”. The [Chief Scientist](#) of New South Wales came to a similar view.

The Victoria government banned all gas exploration but is relaxing this for conventional gas.

The upshot saw supplies progressively becoming scarcer and the price rising from under \$3 per GJ to over \$8 per GJ. This was more than double the US price where impediments to the exploration and production of “unconventional gas” have not been effective. Due to the collapse of international demand, prices fell in 2020 but are not expected to remain low.

**Figure 9**  
**Victorian gas market average daily weighted prices by quarter**



Source: AER; AEMO, Last updated: 19 Jul 2019 - 9:33 am

### Measures introduced by the LNP government since 2013

The LNP has followed different paths under its three Prime Ministers: Tony Abbott, September 2013-September 2015; Malcolm Turnbull, September 2015 - August 2018; and Scott Morrison since August 2018.

The Abbott Government sought to reduce the renewable subsidies requirements (and abolished a carbon tax introduced in 2012). Businessman Dick Warburton was appointed to recommend future policies; his report sought a *de facto* halving of the 41,000 GWh RET. Without control over the Senate, the government was forced to compromise with the RET being reduced to 33,000 GWh.

The LNP government led by Malcolm Turnbull, supported by his Energy Minister Josh Frydenberg, sought to introduce a version of a carbon tax on electricity, which it disarmingly and inaccurately called the National Energy Guarantee. State governments, the Opposition, the energy bureaucracy and many in industry largely supported this goal. It was however the issue which caused the Liberal Party to replace Turnbull as Prime Minister in 2018. This same issue resulted in the replacement of Turnbull as Leader of the Opposition in 2009.

Many continue to press for new subsidies and/or carbon taxes for renewables – indeed, Josh Frydenberg as Treasurer remains influential in energy policy and has appointed Steven Kennedy, the author of the climate alarmist Garnaut Report (2008), as Treasury Secretary.

The appointment of Angus Taylor as minister for energy under Scott Morrison brought a somewhat greater resolve to extricate the nation from the poisonous effect of almost two decades of subsidies and taxes in support of economically inferior technologies.

### Current policy approaches

Subsidies and other regulatory instruments remain the dominant factors in the energy industries’ structure and cost. Total annual subsidies in 2019 were estimated at \$6.9 billion.

| <b>Subsidies to wind and solar for the year ending June 2019 (\$M)</b> |             |
|--|-------------|
| Federal regulatory support   | 3087        |
| State regulatory support   | 951         |
| Federal fiscal support   | 2418        |
| State fiscal support   | 457         |
| <b>TOTAL</b>   | <b>6913</b> |

Source: AEMC, Commonwealth and state budget papers

Particularly rapid growth has taken place with small-scale renewable energy scheme (SRES) (roof-top solar) which has increased to an [estimated cost](#) of \$1.5 billion.

As previously discussed, more important than the direct cost of these subsidies is their effect in lifting prices. With static demand, over the four years since the withdrawal of coal capacity due to the subsidies to renewables, the annual wholesale cost of electricity increased from \$7.5 billion to approaching \$20 billion in 2019. In the context of the COVID instigated price collapse in 2020, generation assets values have been undermined, with the major generator-retailers being forced into write-downs, in AGL’s case by \$3.5 billion, almost half of its asset value, mainly due to its renewable energy contracts.

Minister Taylor's approach is to avoid any further expansion of the requirement on retailers to increase the amount of (subsidised) large scale to wind and solar. Incongruously, however, he is maintaining the (SRES) subsidy to roof top solar, that has resulted Australia leading the world in these installations and that even interventionist minded bodies like the ACCC have recommended closing. Additional policies are

- Trying to prevent further closures of coal generators, including by requiring a three-year notice of closure, and to foster new ones
- Jawboning retailer-generators into lowering prices, partly through ensuring customers are made better aware of lower cost options, requiring retailers to have adequate contract coverage to supply their customers, and setting in train "big stick" laws that can bring asset divestiture
- Promoting Snowy 2, a major expansion of pumped hydro that aims to improve the Snowy scheme's ability to counterbalance the increase in intermittent power
- Encouraging transmission designs that will avoid further subsidies to remotely located renewables
- Requiring a form of domestic gas reservation to keep prices lower/availability higher than might otherwise occur.

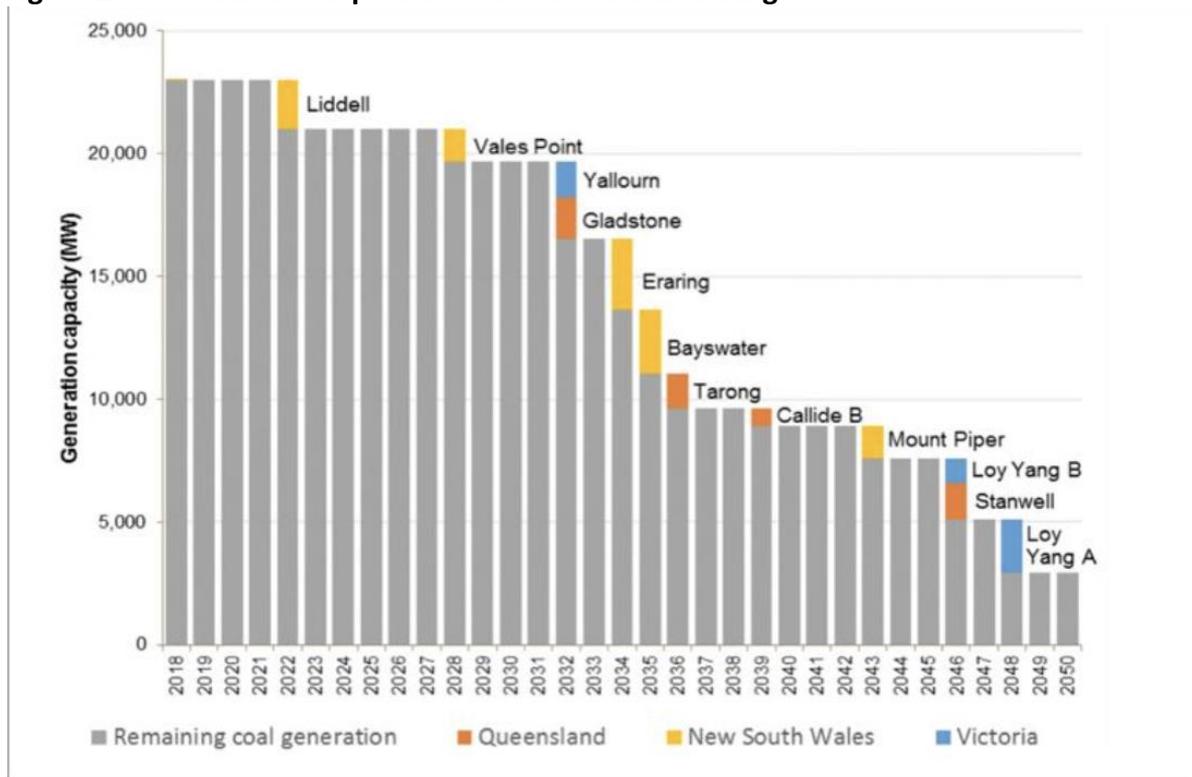
All this is far less harmful than the redoubling of the subsidies to renewables that was the ALP platform taken to the nation in the May 2019 election. It will not however bring lower prices nor markedly greater reliability. Still less will it return Australia to its former world leadership in low price/high reliability. Such an outcome is possible only if action is taken to remove the existing subsidies that are to remain in place for a further 10 years as well as to cease issuing new ones under the SRES scheme for roof-top solar installations.

The government's unwillingness to repeal the SRES scheme is one indicator of a lack of resolve (or political capital) to take even modestly unpopular decisions necessary to repair the broken supply system.

Ironically, virtually all parties now consider there is little alternative but to have further government intervention in the market that has been undermined by such intervention. Many within the energy bureaucracies and the renewables industry call for further support for what they see – or claim to see - as a renewables-dominated energy future. Characteristically, those seeking intervention in that direction often express outrage at interventions that do not support their favoured industries.

The costs imposed on conventional reliable plant by renewables includes the "hollowing out" of demand during the daytime, which wrecks the economics of baseload plant that is designed to amortise capital costs by continuous operations. Even though the government has won a grudging deferral of the next scheduled major plant closure, Liddell owned by AGL, the largest energy company, the market operator's forecast future pattern of closures (Figure 10) shows the difficulties in reversing course.

**Figure 10. Scheduled coal power station decommissionings**



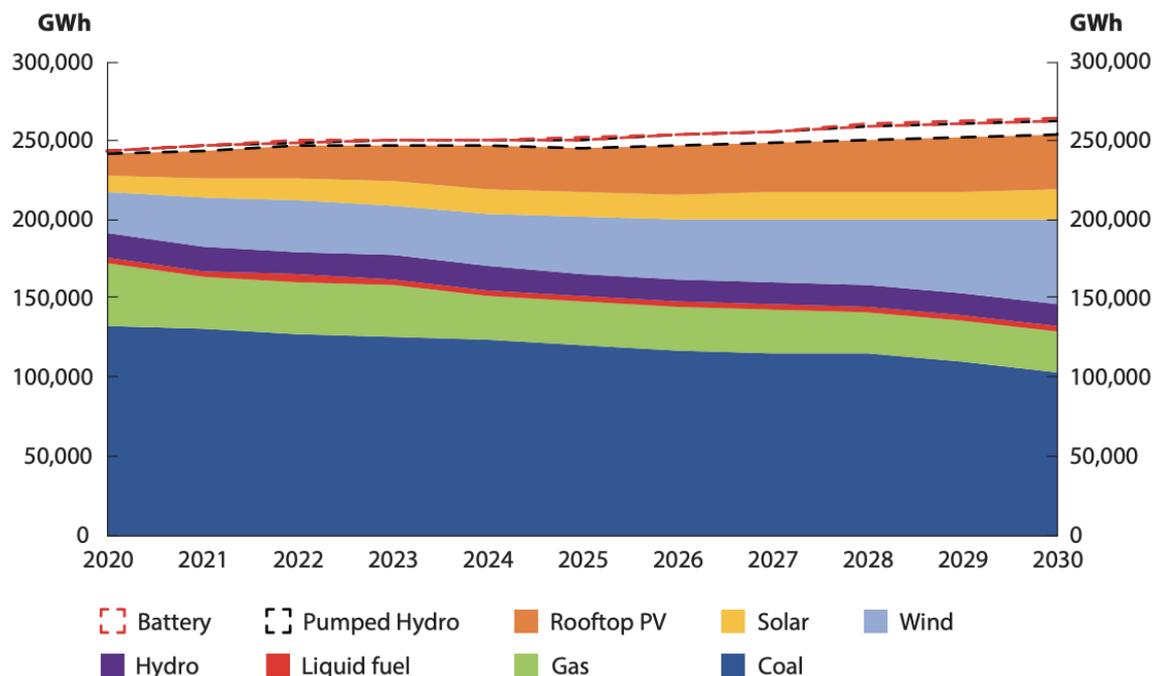
The difficulties are further exemplified in the outcome of Minister Taylor’s plan for a form of government support for “dispatchable” plant, which many saw as code for coal, especially in view of gas supply constraints resulting from state government exploration bans. Part of this has been a plan to require retailers to hold “firming” contracts to provide assurances that power will be available to their customers; wind and solar cannot supply such contracts. But these requirements are unnecessary, as retailers’ internal risk management procedures already insist on such contracts to avoid exposure to spot electricity prices of up to \$14,000 for a product that is retailed at perhaps \$150.

Moreover, the fact is that with existing policy settings favouring wind/solar, any new coal power station would simply expedite the closure of an existing coal station, adding little to the increased security and reliability that is the initiative’s immediate goal.

Furthermore, the committee appointed to advise on the best prospects, recommended only one small coal fuelled generator upgrade, which perhaps underlines the difficulties governments now have in obtaining advice that is untarnished by the dominant green paradigm. Indeed, the Commonwealth Government supports the [Carbon Market Initiative](#) under which firms are invited to donate up to \$12,500 per year in what amounts to an assisted suicide pact involving a “journey towards net zero emissions”.

The Department of Environment and Energy, in its *Australia’s emissions projections 2019 report*, sees an ongoing increase in renewable supplies at the expense of coal and gas. It envisages (Figure 11) the following fuel supply shares, where renewables (with no growth in hydro) lift their share of generation from 27 per cent in 2020 to 48 per cent in 2030.

**Figure 11. Projected supply to 2030**



The deep hostility to coal throughout official circles is also illustrated by a decision in February 2019 of the senior judge in the NSW Land and Environment Court, Mr Justice Brian Preston, who rejected the application to operate for a new coal mine because, among other reasons, he said it would be unable “to meet generally agreed climate targets” for a “rapid and deep decrease” in emissions. The case against the mine was run by the Environmental Defenders Office NSW, which is [funded in part](#) by the [state government](#) and at which [Preston once served](#) as the founding principal solicitor.

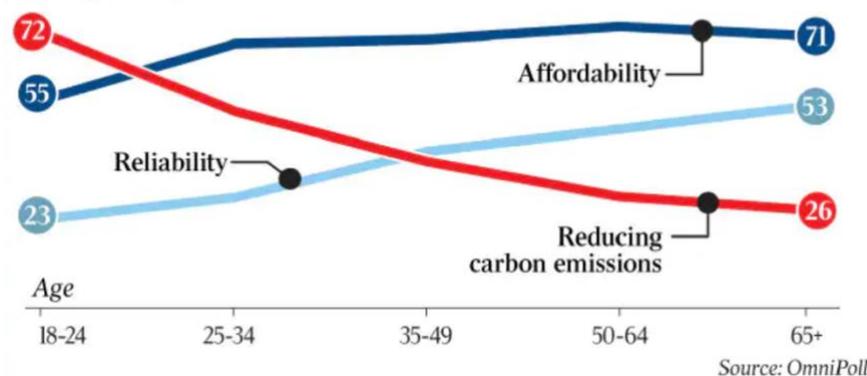
In NSW, there are gas and coal projects including [Rocky Hill](#) and [Wollongong](#) that have been derailed through the planning system where local interests and activists are allowed to dominate. With such views prevalent throughout the judiciary as well as in political circles, it would require some form of government guarantee as indemnification against any new measure that might prejudice fossil fuels in the market.

The “march through the institutions” of green left ideology has resulted in high public approval of green energy, with a September 2019 [Omnipoll](#) finding (Figure 12) that 81 per cent of Australians support a role for it. Perhaps more worrisome is the importance younger people attached to reducing carbon emissions compared to reliability or price.

Figure 12

## ENERGY PRIORITIES

Mean importance ranking (0-100)



Many see these considerations and claims by the big four domestic banks that they will not invest in new coal as evidence that global warming anxiety would prevent new mines from obtaining finance. This is untrue - the domestic banks rarely lend for major projects and the hundreds of coal facilities planned or under construction around the world is testimony to the availability of finance. Australia, as illustrated by the nine year long proposal by Adani for a new coal mine (and the aforementioned views of a senior NSW judge) is vulnerable to political and judicial activism.

Australia also is somewhat hostage to labour unions with regard to major programs. For this reason, in assessing the costs entailed in new greenfield coal generators, [Solstice](#) in a meticulous report commissioned by the Minerals Council placed a loading of 25 per cent on labour costs compared to those prevailing in the US. Even so, the report still found a new coal generator could profitably operate at an electricity price of \$50 per MWh if operated continuously as a baseload generator.

The government, with support from the Opposition, is seeking to curb what it sees as market power from generator-retailers. This is misplaced in the case of retailing. Though not all are active in every state market, there are 33 different brands among electricity retailers (16 for gas). Even though the big three (AGL, EnergyAustralia, Origin) have a 75 per cent market share this still means there is a very high degree of competition. It was, however, a mistake by the NSW government to prefer an asset sale program in 2014 that left the state market with too few competitors by selling the Bayswater and Liddell stations to the same buyer, AGL. This has left that firm with profitable opportunities in closing Liddell and gaining from the resultant price increase. The government, rightly, is pressuring AGL to on-sell Liddell.

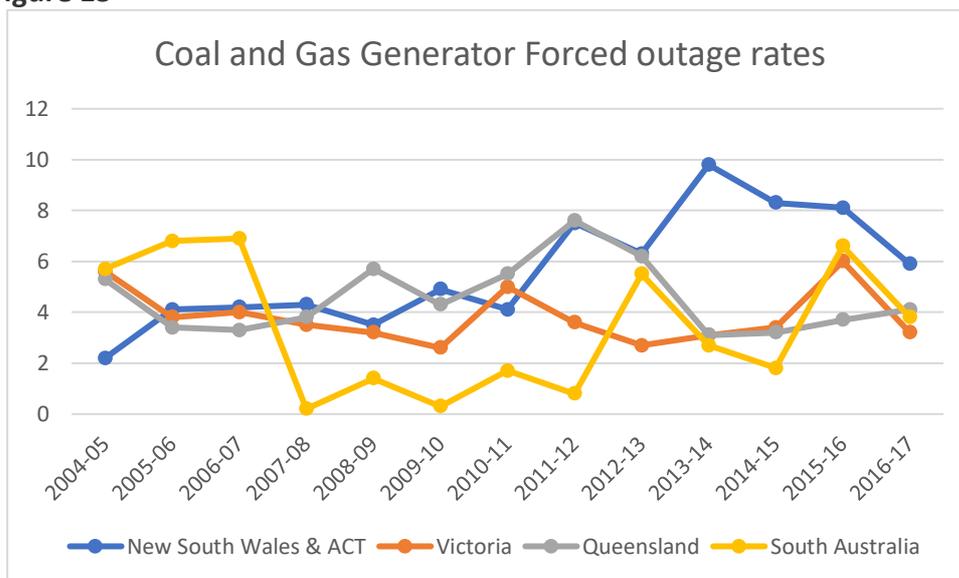
The ACCC has expressed concerns about vertical integration. These are unwarranted. Vertical integration is just a variation of long term contracting and, as with other industries involved in make-or-buy strategies, offers firms different degrees of certainty.

Politicians and regulators alike have also expressed concerns about price insensitive customers, who have remained loyal to their retailers and have accepted uncompetitive price packages. They have done so in spite of an abundance of comparator sites,

requirements to facilitate easy switching of retailers and a crescendo of information about how to get a better deal. On spite of sticky customers, the churn rate is very high, typically [30 per cent a year](#), (see Table 6.1) though misguided policies of the ACCC in restricting aggressive sales campaigns and cold-calling by retailers has tended to mute this.

Other issues being debated largely surround measures that might prevent a further deterioration in reliability. The renewable sector makes considerable noise about breakdowns of “archaic” fossil fuel plant. This is unfounded. Although, as Figure 13 shows, there has been an increase in fossil fuel plants’ forced outage levels in NSW, this has not been substantial and is not seen in other states.

**Figure 13**



Source: EGA, Australian Energy Council

The market operator, [AEMO](#), is calling for new expenditures to offset the deleterious effects on grid reliability caused by household and other small-scale weather-dependent generating facilities as well as by dispersed and remotely located wind. It, like the remotely located renewable facilities, favours the costs to this being incurred directly by customers rather than by the generators themselves. This would be a new form of subsidy for renewables and large scale solar and provide little incentive for new facilities to choose locations that take the costs of transmission into account.

The AEMC, the rule-making body, had taken a different view and was calling for a policy change which would see new generators which choose to locate away from established transmission (or on transmission lines where their presence might cause congestion) to incur the costs. This latter view is preferable but faced with opposition from an industry and other regulators which prefer to have central direction and socialised cost, this position has been largely abandoned.

In addition, there is the plan to change the nature of the Snowy and the Tasmanian hydro-electricity systems. These have assumed greater importance in a network with far greater

price volatility. Snowy is to be redesigned as a pumped storage facility to allow better balancing of the intermittent renewable supplies, even though this will reduce gross output by 40 per cent. Initiated by Prime Minister Turnbull (under whom the Commonwealth bought out the NSW and Victorian governments' shares of Snowy Hydro) the government is sees the Snowy scheme becoming "the battery of the nation".

Like so many government schemes, the cost of the pumped storage initiative has blown out and its claimed effectiveness has been questioned, especially by competitive solutions, including those involving actual batteries. Originally foreshadowed at \$2 billion, costs including for beefed up transmission are now [credibly estimated](#) to be some \$10 billion.

The Marinus Link with Tasmania is another transmission plan, which is to add an additional 1200MW of capacity to the existing 400MW of constrained generation to the mainland.

The [Prime Minister](#) has announced a new one billion dollar fund for the Clean Energy Finance Corporation to "future proof the electricity grid". While such power sharing vehicles may help prevent regional blackouts, they also deter new private investment and therefore further raise prices.

It is doubtful that such expenditures would pass a test of commerciality under any circumstances and they can only approach such a standard because of the price volatility subsidies to renewables have created.

### [Concluding Comments](#)

The bottom line of policies under consideration is that none of them are going to restore the former low-cost electricity and gas supply. Unless the Commonwealth government finds a way to renege on the subsidies to renewables, stops all new ones immediately, and can pressure state governments to cease impeding gas exploration and production, the present tragedy of high energy prices amidst an abundance of supply potential will continue.

Australia will certainly be the poorer for destroying its energy advantages. It is only the nation's vast natural wealth that has enabled a steady increase in living standards, an increase achieved despite government energy policies.

The bushfires in late 2019 and early 2020, though due to [inadequate cold season burning](#), have illogically been blamed by activists and vested interests on Australia not doing enough to replace fossil fuels by renewables. The resultant media pile-on has made for further difficulties in the government's ability to pursue sensible policies.

While consumer prices are the most visible and publicised aspect of the deterioration in electricity supply costs and reliability, it is the effect on commercial customers that is most serious. Mention has already been made of the aluminium plants, standing or many years at the apex of the nation's world class manufacturing facilities. The three major facilities in Victoria (Portland), NSW (Tomago) and Queensland (Boyne Island) account for 10 per cent of electricity demand. All face difficult contract negotiations for this supply, which comprises some 30 per cent of their costs. These plants cannot rely on government subsidies over the

long-term and, in any event, this leaves them vulnerable to countervailing trade measures of the sort that the Trump Administration had imposed on some exporters.

Moreover, electricity and to a lesser degree gas is ubiquitous in all commercial activities. In addition to its vital importance to aluminium smelting, it comprises over five per cent of costs in other smelting, iron and steel, wood and paper, glass and ceramics. And while these industries might see a silver lining in the power price collapse that would accompany the closure of an aluminium smelter, that closure would undermine the economics of baseload coal plants. What would follow is the closure of one of them and the return of high prices, accompanied by a further diminution of reliability across the system.

Similarly, government, judicial and activists' opposition to new gas saw its prices increase two and a half fold compared to those in the US. Five years ago, they were similar. Industries highly dependent on gas include pulp and paper, metals, chemicals, stone, clay and glass, plastic, and food processing.

Present energy policies will therefore, at best, mean a serious underperformance of the economy. The core determinant of this, the attack on fossil fuels and uses of other resources including water and land itself has been boosted by activists' populist slogans like "climate emergency" and "extinction rebellion". The wider tacit support for such refrains, even within the LNP, make it difficult to assemble the political will to reverse course. And government planning documents, like *Australia's emissions projections 2019*, are predicated on a continued increase in wind/solar displacing coal and increasing the overall renewables share from 27 per cent in 2020 to over 48 per cent of supply in 2030.