

Energy in the market

The unfounded concerns about privatised electricity

Alan Moran

A dozen years ago, virtually all electricity in Australia was generated in government-owned plants, transmitted along government-owned facilities and marketed by government-owned retailers. The electricity industry comprised seven State-based utilities, which had total control over generation and sales within their respective States. Competition from other suppliers and retailers was illegal.

A rare level of political consensus—the 1993 National Competition Policy report (the Hilmer Report)—led State governments to separate their electricity businesses into the parts that were monopolies, that is, the poles and wires (which account for about half of the costs), from the generation and retailing parts where competition was possible. This was followed by opening up local markets to competition.

Unbundling the monopolies created dozens of new businesses in place of the integrated monopoly networks. Soon after, Victoria and South Australia privatised their systems, and other States also introduced some private ownership.

Although Australia was by no means the first modern market-based electricity system, ten years ago, when

the process commenced here, such markets were in their infancy. In essence, the industry ceased to feature integrated, commonly owned supply. Instead, the means of scheduling generation was turned on its head. In place of a central scheduler deciding what was required and directing plants to provide it, totting up the costs later, a bid-based system was introduced. Each potential supplier now submits price and quantity offers covering each half hour for the day ahead; they may change these offers in the light of market or other developments.

On the basis of producers' offers, the lowest cost supplies are scheduled and the market price is set at the highest price/quantity mix required to meet all market demand for the half hour.

Concerns about the New Structure

Ten years ago, there were many concerns about the Brave New World we were entering. These included:

- Would retail distribution businesses ensure reliable supply?
- Would prices remain competitive?
- Would there be adequate transmission to allow a national market?
- Would private enterprise have sufficient confidence and incentives to invest in new generation?

In general, these concerns have proven to be unfounded.

Reliability

Reliability has remained at the high levels achieved previously and the best performance has actually been the privatised Victorian system, although the NSW system appears to be showing some deterioration and Queensland suffered from severe problems in 2004. Table 1 illustrates the trends.

Prices

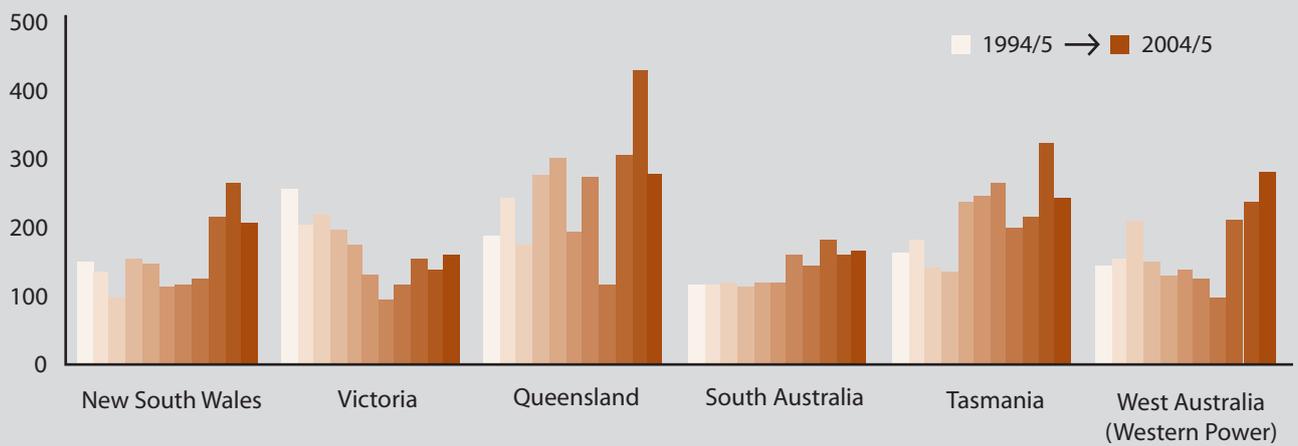
Prices to the final consumer remain among the lowest in the world. Prices to households are largely government controlled; those to businesses are largely individually negotiated and have been reduced in all markets.

Prices at the wholesale level have been kept down by competition. The linked market, which excludes West Australia and the Northern Territory, means that prices in each State tend to converge, although because transmission is sometimes stretched, prices do differ. Prices have been trending up slightly, indicating a need for more capacity, but compared with the levels in the three years to 2001, prices last year were lower in Queensland, Victoria and South Australia and only slightly higher in NSW. Moreover, the price movements are in nominal dollars—adjusted for inflation, prices are down significantly.

Underlying the favourable price outcomes have been very impressive improvements in productivity during

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Table 1: Measure of Reliability in Electricity Supply: Average Outage Duration (minutes off supply per customer per year)



Source: Energy Supply Association of Australia

the post-monopoly period. This is most easily measured in terms of labour productivity.

The productivity of the generators has increased considerably, with the outstanding improvement having been the privatised Victorian system, both in terms of output per employee and reliability. Labour productivity trends are illustrated in Table 2.

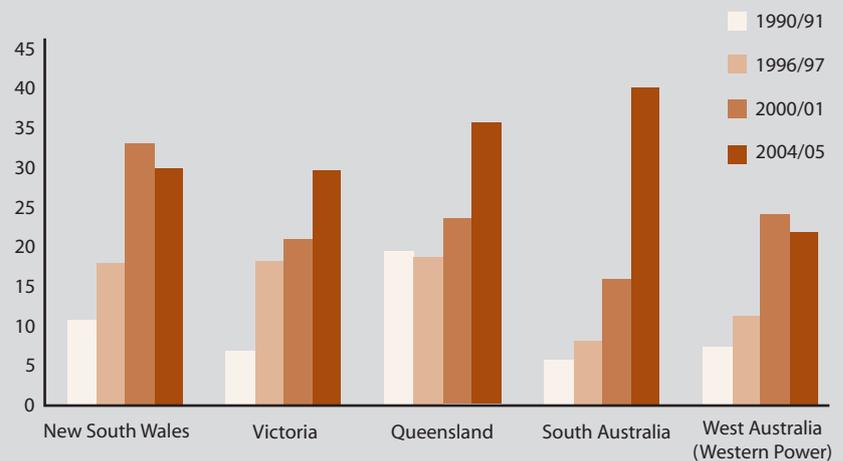
Distribution businesses have vastly improved productivity levels as measured by the number of customers per employee (including contractors pro-rated as Full Time Equivalents). The most impressive gains were in the privatised Victorian and South Australian systems (WA in Table 3 refers only to the area around Perth). Even so, the State-owned systems have also shown notable improvements.

New Investment

Another question asked of the market was ‘Would private enterprise have sufficient confidence and incentives to invest in new generation?’

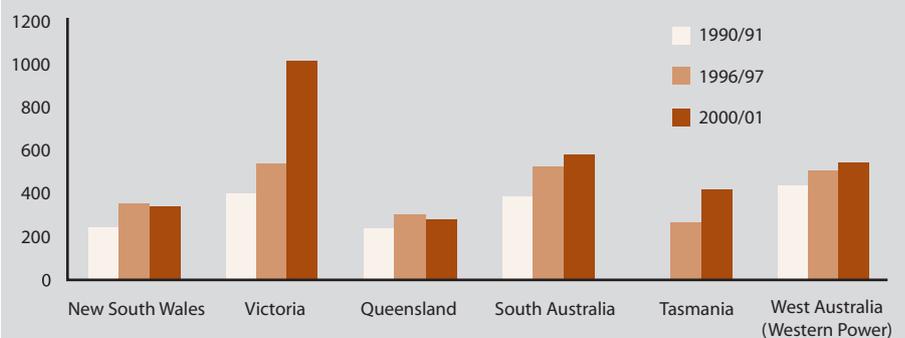
The concern was motivated by the knowledge that half-hourly prices are very volatile and can differ from period to period by a factor of a hundred or more. This is an oversimplification of the market.

Table 2: Generator Labour Productivity: GWh / employee



Source: Energy Supply Association of Australia

Table 3: Distribution Businesses: Customers per Employee



Source: Energy Supply Association of Australia

Even though firms bid and are scheduled on a half-hourly basis, almost all energy is contracted forward at agreed prices. Neither retailers nor generators want to take the risks of being exposed to very high prices, and although the price is set half hourly, the contracts are settled on pre-arranged terms and the pool price represents only a tiny share of true sales.

One response to fears about the market not working has been to put a cap on prices, but this only serves to suppress the high prices that are necessary to signal to firms that it is profitable to invest in new capacity, even if it will only run occasionally.

An agreement between State and Federal governments also saw a Reserve Trader being put in place as a supplier of last resort financed by mandatory charges on consumers. This can never work in the long term.

If the public agency considers there to be insufficient supply, it must contract for that supply. In doing so, it must either:

- move into the market and contract supply at a higher price than the supplier was able to get from real customers; or
- build its own capacity.

If it moves into the market, the supply it is likely to get is mothballed supply and it will contract for this by lifting prices. Although the consequential price increases may not be serious, they do raise costs to customers, thereby defeating the purpose of the market model. More than this, the process will encourage firms to hold back on offering supplies to the market in the hope that the government will offer them a better price. This has a snowballing effect by creating even greater apparent shortages and can start a process that will unwind the market itself.

If the reserve power agency were to hold its own capacity to be used only in special circumstances, this is simply an added insurance and a drain on the market. Of course, if the reserve capacity were to be used more liberally than

this, it would undermine investment incentives and contribute to supply shortages in the future.

Another answer to capacity shortages is a capacity payment offered in addition to the energy price. If additional payments are made for supplying energy for one set of reasons, compensating reductions will occur with related payments as firms jockey for revenues that cover their costs.

The main problems for future supply stability stem from government activities.

Moreover, experience has shown that where supply is ample, the capacity price will be bid down, perhaps to negligible proportions.

The single price market that we have in Australia is superior to all the refinements that have been tried elsewhere. It places the onus on commercial parties to cover their future positions in the knowledge of their customer bases and future demand shifts. Suppliers and retailers develop their own reserve trader through contracting in ways that give them adequate insurance for mistakes and uncertainty.

Moreover, on the face of things, it has served us well in terms of incentives. Not only are plants and facilities being run more cheaply, but new capacity in generation has kept pace with requirements. This has been in the form of a mix of public and private, peak and base-load. In

the main, the sort of capacity brought into commission has corresponded with observers' expectations.

Problems for the Future

The main problems for future supply stability stem from government activities. These are several-fold.

First, there is a danger that governments will over-encourage their own generators to invest by informally accepting a less-than-commercial rate of return. There are suggestions that this has been the pattern in Queensland, where the Minister has stated his opinion that 20–25 per cent surplus capacity allows him to sleep easier at night.

One outcome of this is the very low Queensland spot price, which also somewhat depresses prices in southern States.

A second danger is that governments will positively discourage new investment. This has doubtless been the case in NSW where the State Government announced that it would go to considerable lengths to prevent a new coal-fired generator. In Victoria, too, the experience of Hazelwood in trying to obtain approval for an extension of its plant will have raised the bar somewhat on new coal-based investment.

The third main impediment to timely new investment is the requirements stemming from greenhouse fears. These place coal and, to a lesser degree, gas at a disadvantage as a power supply.

The uncertainties about future government policies—and Victoria is in the process of increasing the penalty on fossil fuel powered electricity—are likely to create under-investment incentives.

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