ESAA Conference

Overall, Has Deregulation Worked?
Australian Perspective

by

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Introduction

The electricity reforms instituted in the 1990s by COAG and Special Premiers’ Conferences have come a long way. When compared to pre-reform outcomes, prices for business and consumers have fallen and investment by the market has maintained system security and reliability levels. According to ABARE the power reforms delivered a value of $1.4 billion to the national economy in 2001 alone\(^1\).

However, after just over three years of NEM operation, unresolved issues with the design and direction of the NEM are more and more evident. As issues such as network pricing and interconnection continue to be debated, it is clear that governments must go further with the reforms instituted in 1995 and provide direction and principles for the future operation of the market.

There are areas in which the market is not performing well. Certainly we are seeing electricity produced at close to minimum cost through a well-working wholesale market. However, the demand side of the market is hopelessly unresponsive to fluctuations in the cost of production, which can be very great as demand varies. Associated with this are continuing concerns about generators exercising market power. Investment decision-making in networks, additional generation capacity and location of loads are not well integrated and not closely attuned to the real costs of providing electricity at different locations. Moreover, even operational network decisions have too little regard to the costs they impose on other market participants.

In addition, the industry faces pressures from ever-increasing realisation and concern about the external costs it creates, eg in the form of greenhouse gases, and from changing technologies. These pressures are or will be reflected in costs and, in particular, in changes in the relative costs or prices of alternative means of generating and delivering electricity to users. The question whether the present market framework is capable of dealing with these changes needs to be faced.

The renewed interest of governments in energy policy is well overdue. The establishment of the Ministerial Council of Energy, the NEM Ministers Forum and the COAG Review of Energy Market Directions are examples of governments’ desires to resolve market issues. They provide an opportunity to complete electricity market reform.

\(^1\) Electricity Supply (ESAA Magazine), Feb 2002, p.3
The proposed work programs for these forums and reviews are extensive. They will cover broad national energy policy issues together with NEM specific issues such as network pricing, interconnection and governance arrangements. Coming to grips with these issues entails a huge amount of information and analysis. It is vital that the government reviews not get sidetracked with the detail of the unresolved issues and fail to deliver a long-term vision for the market.

**Long term vision**

In developing policies in areas such as energy, it helps (to say the least) if governments have a clear idea of where they want to get to before deciding how to get there; a tenet of public policy making that is not always observed. In the case of electricity the objectives are fairly easy to state: efficient, reliable and secure supply of electricity to users where and when they want it. You could say the same about other essential services and, indeed, about most other goods and services in the economy, and even if reliability and security take on a particular importance for electricity, they are not without relevance to other things that consumers want or need, including food, shelter and clothing.

Achieving that combination is less easy for electricity. I am old enough to remember when electricity supply was not reliable. When I was a boy in Brisbane, blackouts were quite common. In the succeeding decades, reliable supply came to be expected, but at the apparent cost of substantial inefficiency. I would assert that most of that cost was attributable to the activities of governments, as owners and operators of an integrated electricity supply industry and as promoters and defenders of State resources at the expense of a national view of the public good.

When governments embarked, in what I believe we can now see as halcyon days of farsightedness, on electricity reform in the 1990s, clearly they wanted greater efficiency, but not at the expense of inadequate reliability and security. They decided that, at least up to a point, the way to achieve more efficient delivery of electricity to users was by embracing market principles.

Note that when I described the objective as being efficient, reliable and secure supply of electricity to users where and when they want it, I did not mention ideas like competition, choice or even price. The idea that the price should be as low as possible consistent with reliability and security – ie sustainably low – is embedded in the concept of efficiency. The ideas of competition and choice come from the decision that the best way to achieve efficiency is by developing a market; indeed, a national market.
My claim is that all a vision for the electricity industry entails is the further development of that concept of a market. That claim needs to be subjected to scrutiny. In the rest of this speech, I will give my reasons for making it. Certainly there are some who would contest the claim that market solutions are the way forward. Moreover, some governments, which do not explicitly try to rebut the claim, nevertheless demonstrate by their actions that they do not believe it.

To decide the future path of electricity reform Governments must have the political courage to take a long-term view. The strong performance of the national economy, in spite of global shocks, is an illustration of the benefits of forward-looking competition policies.

Once dynamic considerations such as changing technologies and awareness of sustainable resource management are taken into account by governments, I believe the further reforms required for the market to work effectively will become evident. With a clear market direction the resolution of market issues such as network pricing, regional structure, interconnection, demand side participation and market power can be tackled in a coherent fashion.

**Environmental and technological considerations**

The worldwide promotion of sustainable resource management, and technological advances in generation, transmission and demand management may provide the strongest pressures for changes in the production and supply of electricity.

The world’s attitude towards resource use has changed dramatically over the past few decades. We now realise that our traditional use of resources is causing costs to our environment, with impacts on our future quality of life. Pressures for these costs to be brought home to the producers and users of resources are inexorable.

In Australia we have seen the introduction of a coordinated greenhouse response plan targeted at reducing Australia’s greenhouse emissions. For example, the mandatory renewable energy target arising from the policy is heavily influencing the supply of electricity in the NEM, and will continue to do so into the future.

Technological development in renewable and distributed energy technologies is allowing the efficient utilisation of many renewable energy sources and making these generation options competitive with traditional coal powered generation. Renewable and distributed generation technologies also consist of smaller modular units enabling them to be located at or near the site of demand, placing competitive pressure on the use of transmission and distribution networks.
Developments in technology to allow consumers and businesses more control over their electricity usage will drive further changes in the nature of electricity supply. It is now becoming more economic for businesses and retailers to invest in load controlling devices to minimise exposure to extreme electricity prices. Consumer appliances are also being developed to provide consumers with greater operational flexibility. The means for consumers to respond to the changes in the cost of producing electricity are starting to be at hand.

Of course, for the response to be at all efficient will require consumers to be exposed to changing costs of production through changing prices. Paradoxically, however, this will not require consumers to make minute-by-minute decisions about their power usage. With appropriate safeguards, and with new technologies, consumers will be willing and able to delegate some decisions to their retailers. Moreover, time-of-day pricing – even with greatly fluctuating prices – does not mean that monthly residential power bills will fluctuate.

The final technological developments I consider will bring about changes in the structure of electricity supply are in transmission. Jose Rotger and Frank Feldler in an Electricity Journal article state that new technologies such as controllable high-voltage DC lines, such as those used by TransEnergie, and flexible AC transmission system (FACTS) devices pose the most important challenge to the traditional transmission network’s status of natural monopoly\(^2\). The authors argue that as the economies of scale of these new transmitting technologies are realised at levels comparable to modern generating units a competitive market in transmission can flourish similarly to that of generation, given the right industry structure\(^3\).

Taken together, these environmental and technological developments signal major changes to the future structure of electricity supply around the world. The developments will give rise to a new industry structure exhibiting increased use of renewable and distributed generation, increased demand side management, and potential competition in network development.

**How will governments respond?**

With this picture of electricity supply in the future, the job for governments in thinking about the structure and design of the market becomes easier. If governments are


\(^3\) ibid.
genuinely intending to promote further improvements in the operation and efficiency of the NEM then policies and decisions must be made that are consistent with, and facilitate the move towards, the future I have outlined. Have no doubt: so far as changing technology goes, the future will arrive no matter what governments do. The question will be whether we lead the world as we did in taking up new technologies like VCRs and mobile phones, or whether government makes us wait, as we did with the introduction of colour television and then Pay TV.

The real concern is that governments will see short-term risks more clearly than long-term opportunities and think, wrongly as it always turns out, that they can fine-tune outcomes better than letting users speak and act for themselves. For this reason we especially need leadership from the Commonwealth Government. Indeed, I believe the risks for governments will be greater the more they try to hang onto the detailed workings of the market. Some have suffered from their ownership of generation assets in a market environment. In addition the problems associated with the approval of regulated network investments illustrates that central planning of market development is a costly and time-consuming process. One just has to look at the SNI approval process to see this.

**What is the Commission’s view of an appropriate market direction?**

To reiterate, in my view the electricity supply industry suffers from unresponsive demand, which is not intrinsic to the nature of the service but can be addressed by allowing price signals to reach power users. This will reduce the need for costly investment and mitigate the opportunity for the use of market power by generators. In addition, network investment decision-making is not sufficiently driven by price signals and not properly integrated with other investment decisions about when and where to add new generation capacity and loads. These are problems we already have and are not dealing with adequately. In addition, new pressures are building to take account of external costs caused by the industry and to respond to new technologies.

In my view the thread that runs through these concerns is that they cannot effectively be responded to by centralised decision-making. Rather, the individual agents that produce, transmit, distribute, retail and consume electricity need to be empowered to make their own decisions in their own interests. In a well-working market, the only information those individuals will need to make decisions is knowledge of prices and of what it is they are buying and selling. In other words, we would reach the state familiar in many, many other industries, where atomistic decision-making leads to efficient outcomes.
Now the question is – or should be – what are the impediments to that result? Is the market inherently doomed to fail? I don’t believe that it is. I think it just needs to be allowed to work. But that requires a considerable effort to complete the design so that all the market participants are able to transact with each other and so that all the participants’ rights are well-defined. We need to move to a market structure that facilitates decision-making by individual participants rather than central planners.

Thus the Commission advocates a move away from regulated network development towards greater locational pricing, together with the broad implementation of time-of-use metering. I consider that among a raft of reform issues, these two developments are key to completing the path of energy reforms initiated last decade.

**How will locational pricing and time of use metering facilitate efficient decentralised market development?**

The NEM is designed as a real-time energy-only market. The real-time nature of pricing in the market provides market participants with the latest information about the nature of supply and demand in the market. This dynamic nature of pricing drives market behaviour both in the short and long term.

At present spot market energy prices are set at reference nodes in each region. Prices between regions will vary according to the supply and demand of electricity in each region. While such prices will reflect the underlying supply and demand differences between the regional reference nodes, prices within the region do not reflect local supply and demand characteristics. Therefore, market participants in a given location within a given region will not face energy prices that accurately reflect the marginal costs of delivering electricity to that point. With efficient price signals masked, decisions by customers and generators become distorted.

Greater locational pricing is not enough to drive efficient market development. Real-time or interval metering must be introduced broadly so that customers are faced with the real cost of their energy consumption. While customers will not necessarily be exposed to spot prices (after all, retailers manage their exposure through contracts), the retailers’ ability to measure a specific customer’s consumption at different times of the day and year will see the development of demand side management schemes. Retailers, exposed to wholesale spot prices, will have the financial incentive to discourage energy consumption by end use customers at times when prices are high. The introduction of real-time or interval metering will therefore facilitate the introduction of demand-side participation in the wholesale energy market.
The twin developments of greater locational pricing and real time metering will provide price signals that facilitate a market response rather than a regulated response to supply problems. Greater use of locational prices will reward generators and customers that locate at points on the transmission network that relieve a network constraint. If the constraint is sufficiently large then price differences between the two locations will encourage a market-based expansion of the network to relieve the congestion. Finally, with real-time metering, end-use customers may be encouraged to reduce or shift load to alleviate a particular supply problem. A market design with greater location pricing and real time metering will exhibit the decentralised characteristics needed to cope with changes in technology and cost structure.

**Immediate market issues**

Let me turn now to comment on some current market issues.

*Governance*

I don’t think anyone denies that there are problems with current governance arrangements.

Regulatory overlap has produced some slow results, notably on transmission pricing, although the fact that there is still so far to go on that issue reflects the existence of much greater impediments to progress than just the NECA/ACCC interface. Accordingly, improving that interface, worthwhile as it is, will not of itself solve problems of governance that are more deep-seated. For example, no regulator presently has the capacity to deal effectively with market power. More fundamentally, no regulator can cut though the impasse on market design that I talked about earlier. In other words, the Code change process is incapable of delivering further market development to the extent needed.

One also hears concerns expressed about inconsistencies between regulators, which imposes regulatory uncertainty and more direct costs on the market. It is hard to know how big a problem that is, but in any case it is one we can do something about. The ACCC puts a lot of effort into consultation with the State regulators – with, I am pleased to say, a great deal of co-operation on their part. By now you are probably familiar with the fact that the State regulators sit on the ACCC’s Energy Committee and that we also convene a regular Regulators Forum to seek consistency in approaches and promote best practice regulation.

There may in addition be room for some jiggling of our relative responsibilities, and possibly a greater degree of formal consistency imposed on transmission and
distribution regulation, but the ACCC does not see itself as taking over the State regulators’ functions holus bolus.

Without labouring the point, governments must set a clear direction and objectives for the market and give a clear mandate to regulators to deliver on those objectives. We believe the ACCC has the track record of independence, fairness and analytical rigour to make it central to future governance arrangements.

*Interconnection*

Some policy makers are arguing for increased interconnection, but at the same time are saying they don’t want to interfere with the day-to-day operation of the market. Those positions can no doubt be reconciled. However, it is reasonable to examine the motives of people who call for greater regulated interconnection to see if they are representing special interests rather than seeking efficient outcomes that are in the general public interest, across State boundaries.

Decisions about optimal levels of interconnection investment require resolution of the issue of the future direction of the market. By and large policy-makers don’t need to get involved in decisions about whether new factories are built to ensure we are adequately housed, clothed and fed. Sure, I know electricity is different, but I nevertheless believe we should be aiming to get to the point where policy-makers don’t need to worry about whether new interconnectors get built. Those decisions should be internalised within the industry.

*Full Retail Contestability*

As discussed before, the development of demand-side participation is one of the really big issues for delivering further gains from market reform. FRC is an essential component in developing demand side participation. Competition amongst retailers will lead to innovative ways of structuring rates and providing incentives for load management.

Governments must push towards FRC and the use of real-time/interval metering. A consistent approach taken by State governments will ensure benefits are delivered to the whole market. The States that do not proceed are likely to suffer.

*Rebidding*

Generator market power is a question that needs to be considered in the wider context of market design. Rebidding is an essential part of ensuring efficient dispatch of generation in the wholesale energy market.
On the other hand, so long as demand side responsiveness is weak, the electricity market will lend itself to the exercise of market power in tight supply/demand conditions. If market power were being exercised more frequently to drive up average prices, that would be an even greater concern.

In fact, it may be that the most insidious impact of generators exercising market power is in bringing the market into disrepute. This invites intervention by regulators and politicians.

The question immediately facing the ACCC is whether constraints can be found to place on rebidding behaviour that we can be confident will reduce anti-competitive rebidding while not deterring beneficial rebidding.

However, the bigger question of market power raises bigger questions about market structure, e.g. the number, size and location of generators, and about the network, including signals for augmentation. Moreover, as I keep emphasising, it will not be solved without improving demand-side responsiveness. Few things are sillier than governments complaining about generator market power and rebidding while standing in the way of full retail competition.

Review of Integrating Energy Markets and Network Services (RIEMNS)

This review is central to the question of which direction the market is heading in – down the decentralised or centralised market development approach.

The Commission supports the move towards more regions and increasing locational signals. It is simply fatuous to claim we have a true national market while regional boundaries do little more than mark the borders between State-owned transmission authorities.

Conclusion

While there remain many unresolved issues with the operation of the NEM, the main issue is the long term direction of the NEM.

The Ministerial Council of Energy, the NEM Ministers Forum and the COAG Energy Review must address this key concern and not get caught up in the detail of the many other unresolved issue.
Technological development in the supply of renewable and distributed generation, demand side management and transmission services, together with greater environmental concern by governments, will require a decentralised market design.

The move towards locational pricing and real time metering will facilitate decentralised market development and should be the next steps in energy market reform. With those steps taken we will have a complete market and a truly national market. At present we have a real market only on the supply side and a market that is a set of linked State-based hegemonies.

The way forward needs only a reinforced commitment to the objectives COAG agreed to in 1994:

- the ability for customers to choose which supplier, including generators, retailer and traders they trade with;
- non-discriminatory access to the interconnected transmission and distribution network;
- no discriminatory legislative or regulatory barriers to entry for new participants in generation or retail supply; and
- no discriminatory legislative or regulatory barriers to interstate and/or intrastate trade.

Currently, some of those objectives are observed more in the breach. If the jurisdictions are prepared to revisit the commitments they have already made, the further reforms needed will be all too apparent.