

University of New South Wales workshop

Insights from experimental economics for the design on an Australian national energy market

Thursday 6 March 2003

Input to session 1: David Swift, Associate Director, NECA

“It is clear that important steps need to be taken to achieve a truly national and efficient energy market” COAG Energy Market Review

It is apparent that there is almost unanimous agreement today of the need for change in the national electricity market. The debate seems at a political level to have focussed on the governance issues and several competing institutional proposals arising from that debate. It is valuable to be able at this forum and to look harder at the issues underlying the calls for change and the breadth of substantive proposals for market reform put forward by the COAG Energy Market Review. I hope we can within the scope of this forum and the valued input of Professors Vernon Smith and Stephen Rassenti do so in a non-partisan way and so what I say here this morning does not represent NECA’s view but rather a few personal views and questions.

Although I think we have consensus on the need for change, I don’t think for a minute that the various interested parties have either a common view of the problems, agreement on the objectives of the market and further market reform, and certainly not concurrence on the solutions. The first challenge in attempting to apply experimental techniques to determining the way forward has to be to determine and agree the objective criteria for success of the market. It would be interesting to speculate whether we did have a clearer view of our objective function back prior to market start when our visitors worked on the original market design. I suspect that to apply a more rational framework to determining the way forward we would need wider, more open and informed policy debate culminating in guidance from our political leaders to set those critical parameters.

If we could develop agreement as to those objectives, I do think that we could and should do more before settling on actual proposals for the way forward, and whilst I personally agree with a number of recommendations from the Review, I think some require further consideration.

In considering the way forward I think we need a better understanding of where we are. An energy market works implicitly on many timeframes. The national electricity market clears on the five minutes yet it seeks to drive an industry where investments commonly have lives of decades. Perhaps we even need experimental approaches to understand how the market is working right now, since we can only observe a short historical snapshot. Whilst not without its flaws, I believe the national electricity market fundamentally works and that future changes should be well considered to ensure they build on its success.

Some of the higher profile recommendations from the review have been in the area of governance. I note in Dr Smith's work that experimental methods have been used to study governance and that this work has indicated the importance of institutional arrangements on market efficiency and certainly would be interested to understand more of how experimental economics has been applied to these issues.

I fear that the various groups of participants and stakeholders want different things from the market based on outcomes they would like for their own reasons, whether commercial, socio-economic, environmental, political or whatever. Some parties hope a more commercial form of competition might bring them higher price outcomes or even a pre-determined price outcome. Some hope the opposite and for prices, especially for their area of interest, to fall. Others hope that their aspirations for higher rates of return and more investment in their sector might result. These hopes and expectations are grounded in each group's preconceptions of how the market should work. I think that it is vital to test those preconceptions. Technologies are evolving fast as are the financial and commercial systems behind our industry and we should not be limited in our thinking or constraining in our experiments.

The COAG review from the statement heading this session has I fear a preconception that the market should by rights be more national. They belittle the idea that the first choice for investment to meet regional demand is often within the region and exude a view that there is under investment in national transmission networks. On the other hand they, and others, argue for a bigger role for embedded generators and the demand side. My view and I know that of NECA generally, is that we do not, nor should not, have a view. The market design needs to ensure as level a playing field as possible such that the most efficient outcome can be brought forward by the market. At this stage we probably do not know what that future outcome will be.

The report also puts forward a particular view of competition that I think is overly simplistic. There is a tendency across the world for some economists to undertake short term studies of gaming potential and come to the conclusion that energy markets need a host of independent players to work. What real world market looks like that? What market in Australia looks like that even for relatively simple products or services?

So the efficient outcome for the Australian electricity market may be a complex combination of local, regional and national solutions to meeting customer's needs. It probably means living with a certain level of constraints between regions which is not economic to remove and real world levels of competition. The economic tools to assist the next round of reform need therefore to be able to assist us to understand the implications for practical market design in the real world. I was encouraged to read that some of Dr Smith's work has been in just this area and understanding more how markets with a more limited number of participants can still be efficient.

A further challenge for understanding and analysing outcomes in the real world is our lack of independent and reliable information on the financial markets. I fully agree with the Review's view on the fundamental importance of the financial market to the national electricity market. The financial contracts market is integral to the successful operation of the gross pool market and, as they recommend, should be taken into account in any analysis and proposed development. I would think it a challenge though to get sufficient independent and reliable information on which to build the sort of understanding to do so. The review seems

confident in its assessment that these markets are illiquid. I wonder how one judges their liquidity or otherwise and determining what level and nature of trading is adequate. Again should the financial markets fulfil our preconceptions of liquidity. Perhaps the real world market is again more complex and a range of bilateral arrangements over the short, medium and longer term are an efficient outcome. I am interested here to understand the experimental approaches to analysis in a world of incomplete information and uncertainty?

The need for more locational price signals in the market is, I believe, self evident. Without a better recognition of the value of generation at a location in the market we can get neither short term allocative efficiency nor efficient longer term investment. Whilst we need to remove some of the potential distortions in the current arrangements, we also need to heed the political and socio-economic realities. We also need to fully assess the views of those who raise concerns about the ability to maintain any liquidity we do have in financial markets with perhaps double the number of regions or to full nodal pricing. Perhaps experimental approaches might be able to assist us to address the concerns of some and, if we cannot get movement on the others, can help derive those second best solutions which minimise distortions.

The need for better instruments to support trading across regional boundaries is also widely agreed. The way forward again though needs more analysis. I fear that the review here proposes a potentially dangerous form of market design where the realities of the power system are not reflected in market risks and rewards. It is only by market participants dealing with and managing the financial risks in trading across regional boundaries that we can be confident that the real risks of supplying across regional boundaries and assuring reliable supplies to customers are appropriately managed. Refinements to the risk/reward structure for transmission network service providers and drivers to ensure cost effective improvements to the actual firmness of interconnectors are warranted. Better forms of financial instruments are also possible and should be further considered. A move though to artificially make these instruments firm is in my view flawed and a form of design based upon "I wish" rather than practical reality. Hopefully a more considered approach to assessing market development options could assist in minimising the risk of flawed developments.

I welcome Professors Vernon Smith and Stephen Rassenti back to the Australian national electricity market and the insights they can provide to help our policy makers and advisers decide what are the important steps needed to achieve a truly efficient and effective national energy market.