AEMC ISSUES PAPER

NEM financial market resilience

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Background of Commentator

Comments are provided on AEMC paper **NEM financial market resilience** by Don Burtt, an independent consultant having substantial practical and theoretical experience in the issues raised through time spent as senior trader and General Manager, Pacific Energy Ltd, Energy Trading Manager Energex Retail and Strategy and Renewable Energy Manager, Ergon Energy. In addition I completed a Master of Philosophy thesis (Thesis) entitled Electricity Deregulation and Vertical Integration at University of Queensland in 2009 which covers many of these issues.

Structure of Response

This response notes the key issues of:

- 1. Nature of financial interdependencies between NEM participants,
- 2. Potential risks associated with these financial interdependencies,
- 3. Potential financial contagion risks that could arise as a result of the failure of a large retailer, and
- 4. Potential financial contagion risks that could arise as a result of the failure of a large generator

as well as the NEM objectives contained in the NOE.

Comments have been provided broadly in the order they have been raised in the Review paper, including related issues of relevance. In general where no comment has been provided I agree with the statements made.

It is important to recognise that all the issues raised are impacted by the overall market trend towards greater generator/retailer vertical integration, which although creating greater financial market resilience has as a downside some negative market implications, including creating substantial market financial risk for "independent" retailers, as referred to in Thesis.

2 Overview of the financial relationships between NEM participants

2.3.2 Exchange-traded futures and options

Comment 1

On P. 12 reference is made, in third to last paragraph, to timing of cash flows in regard to OTC contract settlement, generator AEMO receipts and margin payments, but the paper does not cover total cash flow timing issues for generators and retailers. These can be quite material for smaller retailers operating on small margins and not having the asset backing (supporting borrowings) that generators have. Somewhere in the paper there could be a section on the timing of cash flows, including reference to stable flows such as network payments and volatile flows, being AEMO (that is pool price) receipts and payments.

2.4 An example of how a typical retailer may use hedge products

Comment 2

The description of how hedging is constructed is reasonably accurate (not sure about being "sophisticated") but the comments at the end are somewhat exaggerated in regard to a weather hedge referred to as insurance. Weather derivatives are often spoken about but in my experience, including being responsible for the first weather derivative product (dealt through Lloyds of London in 1995) they are not particularly common, as the market is not liquid (that is it almost impossible to unwind) and there is substantial basis risk (that is there are many reasons why numbers of degree days do not coincide with high pool prices).

A hedging product *not* referred to is a load following hedges (LFH), examples of which have occurred in Queensland. This is the best example of a hedging product that is a totally effective hedge (possibly used for a portion of a retailers or generators load). Such hedges are comparatively expensive because they provide retailers with insulation from both price and volume risk. The not surprisingly co-incidental nature of high demand and high pool prices, providing generators with the greatest revenue contribution each year means that for generators to forgo this revenue source requires them to highly price this product. Attempts have been made at various times to introduce a state profile LFH, representing a compromise between a retailers load profile and a profile that is understood and therefore possibly tradeable, but without success.

3 Key concepts and objectives

3.1 The National Electricity Objective

Although it is important to have an over-riding objective, particularly in regard to the long term interests of consumers, care needs to be taken in interpreting the first bullet point as there is a trade off between meeting some of these criteria, in particular price and security of supply. This is important in the context of ensuring customers are supplied without interruption but at the same time not paying excessively for this. This is particularly relevant to current investigations into whether network companies are "gold plating" their activities. In the context of this paper, market forces should ensure there is an appropriate trade off, although the timing of investment decisions giving rise to the cyclical nature of investment may mean that the appropriate trade-off only occurs

in the long term. Hence it is difficult to envisage particular measures that should be introduced to enable the NOE to be better met.

4 Existing contagion-mitigating mechanisms and practices in the NEM

4.2 Internal risk management measures taken by participants

Although such measures are up to the individual participants there are two areas not referred to which are particularly important in ensuring internal risk management is at industry best practice (borne out by lessons from recent high profile corporate collapses). They are:

1. Segregation of duties

Front, Middle and Back Office responsibilities must be clearly independent (much written on this subject) and

- 2. Independent Audit of Risk Management governance
 - This should be undertaken by a non-aligned party involving staff with a practical understanding of trading issues and should focus on the key risks (80:20 rule)

4.3 External risk management requirements

ASIC's requirements of AFSL holders is not always well understood and if better appreciated would assist in minimising risk. The key issues, from my past experience as a Key Person and from discussions with other responsible managers (RMs), are:

- The distinction between an RM's role and his/her line management role (often blurred)
- The need for a company, particularly the Board, to understand an RM's role

It is very easy for an RM to not "rock the boat" when faced by a risk management issue of concern, thereby not upsetting peers and senior management. The most effective way to change this is to educate the Board and/or arrange for an external mock ASIC audit in full knowledge of senior management and the Board. This should be encouraged.

Potential future reforms currently being considered by Treasury

The proposed legislative framework will assist in providing transparency of derivative transactions. A key issue will be how much information is made public in terms of the aggregation of information as some counterparties may decide not to transact if their transaction (or part of it) becomes public which would instead hinder risk management. Clearing trades through a central counterparty does not, on balance have merit as this requires a level of administration to accommodate an issue that has not shown to be a real concern. In addition there will be cross subsidies (parties undertaking less riskier trades subsidising, through credit support, trades with greater transaction type and counterparty risk).

5 Potential financial contagion risks

5.1 The role of high spot prices

Box 5.1 The administered price cap mechanism

The concept of the administered price cap (APC) mechanism has merit but it somewhat arbitrary and has a major weakness in that it applies to prices averaged over a seven day (336 trading interval) period and in effect re-sets to zero after this. That is it is possible for there to be many APC periods in a year which generators have some ability in creating. Nevertheless it has some value as witnessed by the fact that it has been enacted.

5.2 Potential contagion from a generator to a retailer

Generator outage

This is a good section and covers the issues well but it overlooks a key generator risk mitigant. Generators have the ability to cross insure, that is to agree to provide financial support to a generator who for FM reasons has plant offline. Generators tend to hedge their output to no more than a "n - 1" level, reflecting the possibility that one unit may go offline. If hedged above "n - 1" the generator may then be over-hedged and if pool prices increased (possibly as a result of the unit being offline) the outcome could be that the generator, for the over-hedged portion receives fixed price revenue less than the pool price revenue it is paying out (as it is not receiving such pool price revenue from AEMO). With such cross insurance in place generators could become more highly hedged helping to reduce wholesale market financial risk faced by retailers. Such cross insurance has been attempted in some states with Queensland almost achieving this several years ago.

This will become an even more important issue in the future, as mentioned in Thesis, due to the likely trend towards greater vertical integration.

5.3 Potential contagion from retailer to retailer

5.3.1 Background to the retailer of last resort scheme

It is pleasing to note that ROLR provisions are set to be harmonised. It is important that the process by which the AER appoints ROLRs and additional ROLRs is transparent as such appointments should not be onerous for the ROLR, particularly when the focus of this paper is to enhance financial market resilience (not have the opposite effect). A key issue, not mentioned, is whether the ROLR should be exposed to pool prices for the transferred customers or to the failed retailer's hedge contracts (or some combination) which hopefully will be clear prior to the appointment of firm and non-firm ROLRs. This was a very topical matter in Queensland three or four years ago.

5.3.2 Features of the ROLR provisions that may impact on the extent of financial contagion

The first bullet point, that "a retailer's consent is not required for it to be appointed as a designated ROLR" would be very unwise for the reasons mentioned above (although you footnote this is unlikely). A preferred outcome would be that an ROLR responsibility is tendered so that an undesirable appointment does not occur, instead letting the market resolve this issue. To assist in this being successful the failed retailer's hedges should not be part of the transaction (as otherwise the tender would occur without retailers having all the information they require).

A Examples of previous retailer of last resort events in the NEM

Box A.2. Jackgreen - 2009

Reference is made to statements made by Jackgreen as to the reasons why they went into voluntary administration. The reasons given are only part of the story as they had also entered into contracts which were very soon well out of the money. What this example highlights as much as anything is basis risk, that is hedging in one state with the expectation that pool price movements in other states will be reflected throughout the NEM. This issue is covered in more detail in the section below

Wider Generator - Retailer Risk Management Issues

It is suggested that the Issues Paper also notes the following three topics, having a bearing on financial market resilience.

1. Price Volume Relationship and Demand Side Management

It is important to recognise that high demand is normally associated with high pool prices and that when this occurs, generators (having increased output at high pool prices) are most likely to benefit (as this output is unlikely to be hedged) and because of the "zero sum game" of wholesale market activities (see Thesis) retailers will be the disadvantaged party. The challenge for retailers is then to determine how this possible outcome is best able to be hedged. Generators might provide such a product (LFH for example) but they are very much aware of the opportunity cost and price accordingly. This being the reason why retailers having been turning to their own generation or, with less effect demand side management to help manage this risk. (State profile LFHs represent a compromise product but it would appear that an intermediary, such as progressive broker or brokers, is required to achieve this).

Demand side management (DSM), in effectively reducing load at times of high pool prices, is an effective risk mitigator for retailers as it does not involve the need to reach price agreement with a generator. Given it can negatively impact on generators' revenue it is not surprising that DSM products are not promoted by generators (a subject given much focus in Thesis). Retailers can achieve DSM either through direct financial incentives with customers, through triggering electricity for hot water (selective franchise tariffs) or through a third party aggregating load reductions of a number of consumers and obtaining a portion of the pool price savings from the benefiting retailer(s). Savings also occur to network companies. There are substantial opportunities to achieve greater benefits from all three DSM types. It is this DSM area that has the greatest potential to provide retailers with increased market resilience.

2. Basis Risk

A key risk management issue, for both generators and retailers, is basis risk, being the risk of price variation by region (being more than just the effect of line losses). Price separation occurs because the capacity of inter-state interconnectors is not adequate to transfer electricity requirements between states on a line loss adjusted price basis. To correct this requires the principles associated with interconnector investment decisions to be amended, being a subject too large to be addressed here. Nevertheless in the extreme example of inter-connectors not binding at all market participants could look to hedge load with contracts from other states without basis risk and definitely improve market resilience. This is a rather extreme comment but some movement in this direction would assist in addressing the topic of this Issues Paper.

3. Vertical Integration of Retailers and Generators

Vertical integration assists both generators and retailers to help manage risk and provide financial market resilience but there are a number of adverse consequences, as mentioned in Thesis. These can be summarised to:

- Reduced contract market liquidity
- Less emphasis on demand side management
- Increased likelihood of a retailer going bankrupt

It is not a simple matter to determine how this should be addressed, if at all, but some suggestions are made in Thesis.