17 May 2007

AEMC Reliability Panel
The Australian Energy Market Commission
PO Box 1215
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Re: AEMC Reliability Panel Comprehensive Reliability Review
Response to Interim Report March 2007

1. Introduction

Energy Response commends the AEMC and its Reliability Panel for identifying and seeking to address several key issues with the National Electricity Market that are barriers to maintaining and where appropriate improving reliability and the manner in which reliability can be efficiently achieved in the future.

Since its inception the market has worked effectively and generally served 19 million Australians well. However, future challenges such as periods of sustained drought, climate change, rapid growth in peak demand, investment uncertainties and consumers expectations could undermine the market's reliability reputation unless some systemic changes are made in the near future.

One critical aspect that the market still glaringly lacks is active participation or response by end users. As was recently stated at one of our public forums "the NEM operates like the sound of one hand clapping". This highlights the supply side domination and the negligible participation by end users even after nearly 9 years of market operation.

The Interim Report seems to acknowledge that Demand Side Response (DSR) can improve reliability and that the market model should encourage DSR participation. As confirmed in the recent ERIG Report, of the $200-$300million efficiency benefits identified, 15% were directly attributed to having more effective DSR. Following a national public trial, Energy Response was established to facilitate and empower end users to participate and gain further benefits from the NEM creating a well organised, reliable DSR facility.

Energy Response's Demand Side Response (DSR) aggregation facility has been in commercial operation since December 2004. The 850MW we have sourced across the NEM comes from upwards of 250 large and smaller Industrial and

Commercial entities across the NEM. In just over 2 years we have also been successful in providing:

- Reserve to NEMMCO through the Reserve Trader process (125MW of firm DSR)
- Peak lopping to Networks to defer upgrades, improving the efficiency of capital investment for the same or improved reliability; and
- Risk mitigation products to Retailers as a more efficient method of mitigating the impact of extreme prices (contracts with 10 Retailers).

The scale of the DSR available and its role is equivalent to a widely distributed virtual peaking plant of some 300MW firm (and growing). The response from the end consumers participating in our DSR facility to date has been "let's have a lot more of it". This demonstrates that well organised commercial DSR is available in the scale, speed of operation and sustainability required to make a major contribution to the ongoing reliability of the NEM over many years. It is also available now as the assets providing the DSR already exist.

However, there are several barriers still blocking DSR from making a significant contribution to reliability. In summary these are:

1. Reserve Trader – This is the only mechanism which allows end users to provide reserve and it is rarely used, (too uncertain, too expensive and too short term)
2. The cost of providing reserve capacity is bundled in the energy price which restrains its provision to major generators and hides the real cost of reserve.
3. We have seen several examples where Transmission companies have decided not to contract DSR when their capital works programs are delayed. The value of unserved energy to the end user is arguably in the order of $30,000/MWh or more the end user is not advised of the increased risk.
4. The failure of all the transmission lines from Snowy to Victoria on 16 January 2007 proved that one credible event can happen to cause major disruption. The rules around "credible events" need to be reconsidered.

We would be very happy to present and discuss what we have learnt in the last 4 years of planning and commercial operation with the Reliability Panel if that would assist the convey of our real commercial understanding of how DSR can be an effective process in improving the reliability of the NEM.

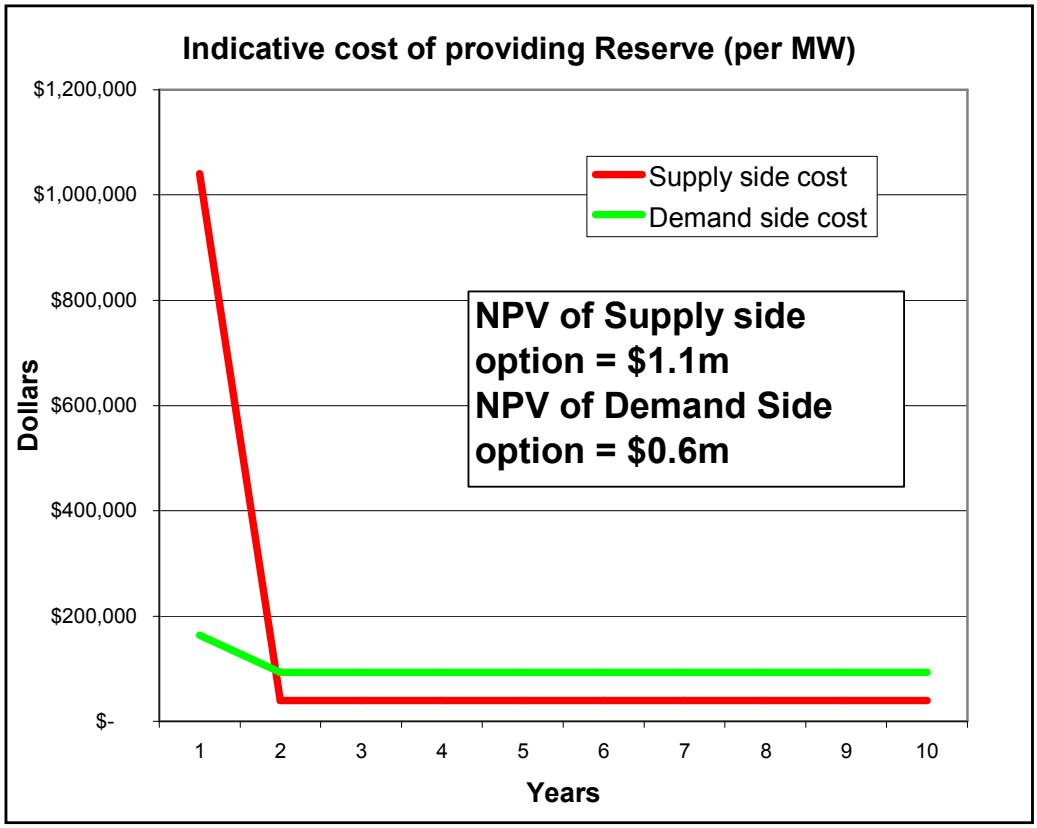
2. Basic Premises

Key to any investment decisions is consideration of **all** the options. Build options, whether they are generation or transmission, are long term projects sometimes

dogged by complex planning delays and uncertainty. They are very capital intensive and technical resource intensive. DSR as an option uses existing end user infrastructure (so is relatively low capital cost) but requires an operating cost higher than the average energy price to make it available and for dispatch. Both require well grounded engineering application, an appreciation of end user requirements as well as an appreciation of the cost of supply failure.

As a contribution to meeting reliability standards, the best possible action to take when there is a shortage of either supply or transmission capacity. This is exactly what a well organised source of DSR can do far more efficiently and effectively than more supply side capacity or additional transmission lines.

The graph below compares the NPV of building generation and transmission assets to provide reserve against utilising existing Demand Side infrastructure through a well organised DSR program to provide reserve (on a per MW basis). The stark contrast between these options is clearly obvious.



Therefore the basic premises are that DSR is a strong option for meeting reliability standards and will be able to make a major contribution if the Rules allow it to do so. DSR can be controlled to be fast, medium or slow acting and

due to the nature of its make up from a diverse range of small components, very reliable and sustainable (ie Aggregated DSR).

DSR provides major contributions to reliability and security in most other electricity markets and it is essential that this opportunity is established in the NEM. It is interesting to note that in California, before a "build" generation can be implemented the utility must prove that all DSR/DSM options and all solar and renewable options cannot meet the requirement (refer to California's Energy Action Plan and the adoption of that states "preferred loading order for resource selection"). No such requirements exist in the approval process for a generation option in Australia and the current requirements for TNSPs to seek non-network solutions are ineffective (proven by the negligible amount of DSR actively used by TNSPs).

Specific responses on the options in the Interim Report

3. VoLL

Energy Response is well aware of end user concerns of any increase in VoLL and Energy Response echoes that concern. Without active DSR in the market Energy Response would not support an increase in VoLL.

The New Zealand market does not have this barrier and nodal prices have reached $NZ30,000/MWh. However, the New Zealand market does provide for Demand to participate actively and the Electricity Commission, TNSP and DNSPs are encouraging end user participation.

The level of VoLL is also a vexed question. It is supposed to represent the cost of unserved energy. If that were true then it should by virtue of that definition increase at least at CPI and be more closely aligned to the realistic losses suffered by end users when a total power shut down occurs. That is not advocated by Energy Response at this time but is mentioned to show that VoLL is not reflective of what it is meant to be or do.

4. Paying for Reserve

Much of the Report considers how payments can be made for the provision of Reserve. Energy Response is of the view that before we can consider how to pay for Reserve we must first separate and measure it. Currently Reserve is bundled with energy and therefore its market price and value is unknown.

If the price of Reserve is unbundled then investment decisions could be made on the price for that Reserve. To unbundled Reserve, generators would need to bid

Reserve separately to energy. The energy bids could continue to be at 5 minute intervals as they currently are and Reserve can be bid and/or tendered at "Day-Ahead" and/or shorter timeframes. Only then will we appreciate the value of Reserve and open the market to competition from the Demand Side.

When considering payments to end users for Reserve:

- Rates must be commercially worthwhile to the end user and attractive enough to offset any negative impact (it must be said here that Energy Response seeks discretionary sources of DSR and does not seek or encourage end users to provide DSR that would diminish the ambience or threaten their business or safety)
- DSR for Reserve should be aggregated to provide reliability so that any single end user has a choice of whether to participate without negatively impacting the overall delivery of DSR
- DSR under long term commercial arrangements (3 to 5 years) to allow end users to make investment decisions with certainty so they will make a serious commitment of their DSR capability.

Indeed if a major injection of DSR was provided as on-going Reserve the market is most likely to find it is a far more efficient and effective means to provide Reserve than building generation (of any type).

So the key questions for the longer term are:

- **What does Reserve cost in the NEM?**
- **What "open to all" mechanism can be implemented to provide this Reserve?**

In the short term, Panel's recommendation that Reserve Trader should be extended for five years is sensible. During this time improved efficiency measure for the market should be identified and implemented. Reserve Trader contract/s for aggregated DSR that spans the entire five year period will allow the proposed market changes time to be worked through.

5. Investment in Generation

Much of the focus of the Report is on trying to improve investment signals for electricity infrastructure projects to ensure reliability targets are not breached.

The NEM is a complex market and relies heavily on price signals to encourage investment. However while such signals exist, there is also considerable uncertainty in the market that cautions investors from proceeding. These uncertainties include:

- The prospect of a carbon control/minimisation mechanism

- Moving the generation mix to a cleaner/greener mix which are inherently more expensive and technically more intricate to incorporate into the NEM
- Government targets for alternative fuels which may limit options for large scale generation
- Climate Change and/or droughts that constrain the availability of water for condensing and as a resource for hydro generation.

There is significant potential for Reserve and for enhanced reliability from the Demand Side and it is essential to find effective commercial mechanisms that allow the DSR to be accessed.

6. Transmission

Build options take too long and the requirement for TNSPs to seek non-network solutions is poorly understood and generally fails to secure DSR. Energy Response has sourced and confirmed DSR from organisations totalling hundreds of MW for specific Transmission projects.

The greatest barrier to having TNSPs adopt DSR as a viable non network solution is a cultural one. Engineering organisations are more comfortable building assets and perceive that current regulatory policies incentivise them to build rather than find Demand Side alternatives.

In support of this observation we note :

- recent price reviews allow TNSPs to pass through all DSR support costs,
- a strong business case exists for a 2 or 3 year deferral of the build; and
- the TNSP can apply for the build project at any time in the future.

However, even under these favourable conditions TNSPs have been reluctant to commit to DSR programs.

Penalties for poor supply reliability are ineffective when build options that are at least 18 months or more away are not supplemented by readily available DSR. Particularly when payments for the DSR can be passed through and recovered via the regulatory process (ie at no cost to the TNSP). The TNSP must eventually build the infrastructure but that can be done when DSR opportunities are exhausted and/or at such time when the incursions outside of the “N-1” limit are substantial and not just a few hours a year.

Three major issues in this regulated area are:

- **The current requirements about how much “unserved energy” is allowed by the TNSP must be specifically stated by the Regulator,**
- **DSR contracts accepted by the TNSP must be allowed to span the regulatory periods; and**

- **Appropriate financial comparison of DSR benefits against capex projects and this will require the Regulator to recognise DSR opex payments.**

The Report does discuss that the expansive scope of the existing Reliability targets which often hides poor reliability in specific areas. Energy Response believes that poor performance at any level should not be tolerated and an effective means be adopted to ensure all sections of the transmission network performs to best practice. Where that performance can be enhanced by DSR, then DSR should be encouraged.

A major issue is the lack of transparency of information about transmission related decisions.

7. Firmness and Liabilities

Far too often utilities, and policy makers, refer to these two related issues of "Firmness" and "Liabilities" as reasons why the market should not encourage Demand Side options, so it is highly relevant to address them here. In response to a market condition DSR must be firm otherwise the adverse properties of the condition will prevail.

Since commencing commercial operations Energy Response has found that in all situations end users who participate in providing DSR and that are paid fairly for the DSR will provide very reliable responses.

Liabilities that utilities often like to apply in case the end user fails to dispatch their DSR are an inequity. Utilities cannot be sued when there is a power failure so why should end users be sued if they are providing DSR and fail to dispatch? In all probability the end user/s providing the DSR would be blackout in the event that they didn't obey a dispatch order and that is the ultimate penalty.

8. Summary

Energy Response remains committed to promoting DSR aggregation. To that end we have identified 850MW from Industrial and Commercial end users in the NEM alone, of which about 75% is load curtailment.

Our view while is that the market generally works well, we believe that it can be improved significantly with an effective DSR participation.

Each market alternative under consideration has positive and negative aspects that need careful consideration however none fully achieve ideal outcomes for

DSR. This is because many of the barriers that Energy Response has identified are endemic and those issues must be addressed.

Yours faithfully

Michael Zammit
Managing Director