

30 June, 2006

The Reliability Panel
Australian Energy Market Commission
PO Box H166
AUSTRALIA SQUARE NSW 1215

By email to: panel@aemc.gov.au

Dear Panel Members

AEMC Reliability Panel Comprehensive Reliability Review Response

Thank you for the opportunity to respond to this important Review.

1. Who is Energy Response?

Energy Response operates the only DSR aggregation facility which provides open access to all market participants and all electricity consumers in Australia.

The company's owners and key staff are independent of any market participant or major electricity consumers. We are owned by a small group of private investors.

Energy Response commenced commercial operation on 1 December 2004 and since then has –

- Sourced more than 500MW of DSR nationally
- Established processes, built IT systems to register, test, aggregate, profile, dispatch, measure and settle DSR in the NEM and off market
- Formed contracts for sale of aggregated DSR with 5 electricity retailers
- Dispatched aggregated DSR on 12 occasions
- Formed agreements with 4 electricity networks
- Won a NEMMCO Reserve contract - 125MW firm DSR sourced from more than 60 retail consumers with over 100 sites in Victoria and South Australia
- Been selected for a NSW ESF grant - \$2.5million over 2 to 3 years
- Developing a growing reputation for competence in making DSR work commercially.

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We believe we are arguably the most knowledgeable entity in Australia on how to make Demand Side Response (DSR) work commercially in the Australian NEM environment. This claim is based on the commercial achievements by Energy Response over the last 2 years. The business model was established to commercialise the DSR aggregation facility demonstrated in the national DSR Trial (November 2002) and independently assessed in the report “Trial of a Demand Side Response Facility for the National Electricity Market: Independent Consultant's Report” by Dr Jeff Washusen, April 2004.

2. Key Issues on Reliability for the Demand Side

The potential for DSR to improve the economic efficiency of competitive power markets and reduce the risk of involuntary load shedding is well recognized and understood by market designers, market operators and Government policy-makers around the world. However, for various reasons the emergence of an active demand side participation has been very slow to emerge, and the Australian NEM has been no exception.

While there have been many contributing factors, the key reasons for this appear to be:

- Competitive retail offerings to consumers are generally very simplistic in their structure and they insulate consumers completely from the price signals inherent in the spot market and charge for other unbundled services in the industry.
- Power prices generally are relatively low and consumers have generally either lacked the necessary knowledge or otherwise been generally apathetic about how they could reduce their power costs even further by more sophisticated pricing structures combined with judicious management of their power demand.
- Even for consumers with the necessary knowledge of the cost cutting opportunities and the interest to pursue it, the regulatory and market barriers confronting them to implement a successful DSR strategy for their business (or household) are formidable.

Demand side aggregators can go a considerable way towards overcoming some of these barriers, as has been illustrated by ER's success to date. However, they could be considerably more successful if those aspects of the market that act as an impediment to DSR could be corrected. These include the following:

Level of VoLL: Capping VoLL at \$10,000 per MWh caps the market risk of participants at an artificially low level so that they have a reduced incentive to manage extreme market price risk. Given the price structure of DSR vis a vis other sources of capacity (i.e. very low capital cost per MW but potentially very high short run marginal costs), it is the development of economically efficient DSR which suffers most because of an artificially low value of VoLL.

Statutory Protections and Risk Allocations in the NEM: The National Electricity Law, the National Electricity Rules, the terms and conditions generally included in Network Connection Agreements, the very low revenue at risk for regulated network businesses for poor performance, and the like all unduly protect market participants, market operators and network service providers from liability in the event that consumers do not receive a reliable supply. Consumers are generally being required to carry risks in this respect that others are in a better position to manage. This is particularly the case for small consumers.

NEMMCO's Technical and Administrative Requirements for Participation in the FCAS Markets: NEMMCO's technical and administrative requirements have been developed around the traditional characteristics of the traditional large suppliers of frequency control ancillary services of the past, namely large generators and smelter potlines.

Under-developed and Opaque Market for Caps and other Financial Instruments for Managing Extreme Pool Price Risk: The lack of a well developed liquid and transparent market in this area, combined with the asymmetric risk profile of generators and retailers has resulted in the market resorting to what are potentially quite inefficient methods of managing extreme pool price risk. These include self-insurance (i.e. generators withholding capacity from the contract market, and retailers building their own peaking plants), vertical re-integration of the industry (i.e. generators purchasing retail businesses and vice versa). Yet again, it is the development of DSR that suffers most in this market environment as it is crowded out by these more expedient but less efficient solutions to the inadequacies of the current contract market.

ER's success to date in "recruiting" some 500MW of DSR capacity nationally is a clear demonstration that DSR is a cost effective alternative to the construction of at least an equivalent amount of peaking plant. If policy-makers, regulators and the market operator could be convinced to correct the market deficiencies identified above, we are confident that there would be considerably more cost-effective DSR that could be "recruited" to both improve the efficiency of the market and enhance the reliability of supply to consumers.

We look forward to an opportunity to discuss these matters further with you on 27 July 2006.

3. Specific Matters Raised in the Issues Paper

3.1. Increasing VOLL

The ultimate aim for policy-makers should be a fully mature NEM where the market voluntarily clears under all but the most exceptional of circumstances caused by force majeure events. This is only achievable if the true price elasticity of demand both in the short term and the long term is able to be expressed in the market clearing process.

The current VoLL price of \$10,000 per MWh is quite low compared with the consumers' value of lost load, the implied VoLL in the Reliability Panel's current reliability standard, the implied VoLL used by transmission network planners in their current network planning standards, and the level of VoLL inherent in the community's (and its politicians') expectations concerning how reliable the power system should be.

Raising VoLL in the spot market to \$30,000 per MWh would bring it more into line with the values implied in policies and practices elsewhere in and around the NEM as listed above.

3.2. Network issues of reliability of supply - improvements

There is no doubt that DSR has the potential to defer many millions of dollars of network capital investment across the NEM. However, for a number of reasons, the utilization of DSR by network owners as a cost-effective alternative to defer or even permanently displace new network investment remains very low.

The reasons for this include the following:

- Network businesses are generally more comfortable relying on traditional solutions to meeting increasing consumer demand; i.e. building bigger and better networks.
- The regulatory process for determining network revenues provides little practical incentive for network service providers to pursue non-traditional solutions such as highly targeted DSR.

Network planners generally use the argument that the impact of investing in traditional network infrastructure is certain whereas reliance on DSR or other non-traditional alternatives is significantly more risky, partly because the network service provider cannot guarantee performance by the suppliers of the non-traditional services.

ER has been able to demonstrate that DSR is both practical and reliable and can be considerably more economic than upgrading the network in specific circumstances. Network Service Providers also will not contemplate the use of DSR as an alternative to traditional network augmentation unless they receive regulatory approval in advance for cost recovery of the non-network solution.

Network Service Providers need to be incentivised and rewarded for pursuing non-network solutions, at least for the few (2, 3 or 4) years leading up to the point where a major capacity upgrade is required in an area of the network, the Regulator/s must insist and approve payment for a non-network solution, e.g. aggregated DSR in that area but also campaigns for energy efficiency, technical solutions such as high speed load transfers, etc. Otherwise the consumers are at risk of total loss of supply during these periods, no matter how short, and they are generally not made aware of this risk.

An effective DSR process can provide this service but then, as it grows in that area with local consumer awareness and participation, it will also be able to provide a deferral of the upgrade for some 2, 3 or 4 years without any further reliability risk.

The financial benefits to both the consumers and the networks are significant. We have commercial information we are prepared to discuss with the Panel to demonstrate these benefits.

Regulators must insist that this happens much more strongly than currently, including:

- support for a commercial demonstration in the near future; and
- approval of network Opex to buy this service as the NSPs will not do anything about it without the Regulators approval despite the excellent business case for them.

3.3. Network constraints - risk to reliability

Network constraints potentially reduce reliability but the inter-regional price separation caused does not seem to attract / result in actions.

It has very hard to find any information about the constraints and what they cost, and the impact on energy prices to the consumer. We understand that the AER is acting to produce reports on the cost of constraints but these are likely to be well after the problem emerges. This matter also calls into question how interconnectors are rated and the need for transparency by TNSPs to allow for independent assessment of their planning.

It is our understanding that the TNSPs rate their infrastructure and NEMMCO is obliged to accept the TNSPs evaluation. There should be a transparent process of evaluation and confirmation to ensure the most cost effective option for meeting the reliability standards is selected.

For example, one notable constraint is the limitations caused by the limited capacity and demand on the 132kV loop through Kempsey - Port Macquarie -Tomago which creates up to a 200MW limit on QNI under some circumstances.

We understand that Powerlink are in the process of implementing, and have received approval for, a \$10 million 'fix' but Energy Response believes that we can use existing local DSR to remove the constraint.

We would like the opportunity at least to demonstrate that this can be achieved at a lower cost and with the same if not better reliability if it is not already too late.

To avoid this type of situation occurring in the future, we believe that there should be open access to TNSPs' detailed planning data so that their planning studies can be replicated by independent experts and alternative solutions investigated thoroughly. And this must occur in the planning process early enough to allow ER or others to offer an equally reliable solution to these constraints at a lower cost.

3.4. Re section 4.2.3 Demand Side Response

All large consumers have had 'smart meters' in place for many years and many of the more recently contestable smaller consumers also have smart meters. The availability of these meters has not made these consumers change their behaviour in any significant price responsive manner. They are just not interested in doing that

for themselves although a small number have had a go at buying directly from the pool or at least tried a half way house with their retailer.

This is why the DSR aggregation facility was trialled with large consumers and independently assessed and publicly reported. Since its commercialisation it has had growing popularity. It is a service which facilitates an efficient and effective, no fuss (to the consumer), response back into the market or in an off market transaction.

Energy Response monitors prices and conditions for the registered DSR providers, arranges dispatch of their DSR and settlement of the transactions. This leaves the consumer free to proceed with their business operations while gaining significant value.

Question 33:

We are being informed by consumers that Energy Response's DSR aggregation facility meets the needs of consumers to easily respond to high price peaks even though they are paying a flat rate for electricity supplied. We have some new products coming which will enable the more sophisticated consumers to gain even more benefits from doing this.

However, we are concerned that a major part of the supply reliability problems are driven by the capacity (overload) constraints on the local networks especially where there are no real time price signals. While we know where these constraints are (published in NSP Planning Reports) and, as stated above, we know there is a very good business case for a demand side response from local providers which will benefit; there simply are not the signals or transparency in existing systems to respond effectively.

A solution to this, while it remains a price regulated environment, would appear to be for the Regulator/s to ensure that sufficient Opex funds are approved for cost-effective non-network solutions as the network approaches its next upgrade. Both improving the reliability of the network prior to an upgrade as well as deferral of the upgrade itself will reduce NSP costs and a substantial portion of those cost savings should be passed on to consumers.

Question 34:

We have generally covered this question with the comments and suggestions made above, however to summarise:

- A significant quantity of DSR can be harnessed at a cost that is far less expensive per MW of capacity than building new power plant
- DSR can improve reliability while lowering electricity costs
- Participants in DSR programs can directly benefit from their participation
- An active DSR program can reduce transmission and distribution losses and reduce greenhouse gas emissions.

Questions 38, 39 and 40:

These refer to the perceived level of intervention in the market by NEMMCO and the safety net mechanism:

Energy Response has found the Reserve Trader mechanism to be cumbersome and expensive to engage. The NEM should be providing investment signals to facilitate forward planning by those parties seeking to build new plant. The reality is that power stations of any kind can take years to get approved and built, over which time the NEM can experience reliability and security risks.

Experience around the world suggests that energy only markets without a significant demand side response in real time are likely to display the classical boom and bust cycles of most global commodity markets. Facilitating increased active DSR in the market would help to stabilize the market over time and reduce the risk of the market experiencing the worst extremes of these boom and bust cycles. Even if the existing intervention mechanisms were retained, the likelihood of them being called on would be reduced.

One possible approach to expanding the amount of DSR available to the market to avoid involuntary load shedding could be the introduction of a new type of reserve consisting principally of DSR that doesn't normally respond to daily price fluctuations, but would be willing to be curtailed prior to indiscriminate load shedding being required.

3.5. From the consumers' perspective

While the security and reliability of the overall NEM interconnected power system is good by world standards it can be further improved and achieved at a lower cost to the consumer than at present. Most electricity consumers also want a higher level of local reliability (and quality although this is a separate issue) from their network than at present. A single outage of supply can cost a large manufacturer many millions of dollars and while this is acknowledged in the paper as being (say) \$30,000 / MWh of lost supply, it can in fact be considerably higher. It is also estimated in both the TNSP and DNSP Planning Reports, but it is not seriously considered in any decisions and this may be a regulatory issue (or simply not a high priority between the regulator and the NSP). In any case the consumer is the loser. The evidence for this is that N-1 is regularly exceeded without the consumers' specific knowledge or agreement and it can be easily addressed with appropriately located aggregated DSR.

We look forward to participating with the Panel and would be pleased to furnish any additional information you may require in support of our comments and proposals.

Yours sincerely

A handwritten signature in black ink, appearing to read "Michael Zammit". The signature is fluid and cursive, with a large initial 'M' and a long horizontal stroke at the end.

Michael Zammit
Managing Director