
NEMMCO 2005/06 Tender for Reserve Assessment of Energy Response Bid

*A report prepared by Marsden Jacob Associates
for the Energy Users Association of Australia*

The comments and opinions expressed in this paper are those of Marsden Jacob Associates (MJA) and do not necessarily reflect those of the EUAA. No part of this submission is confidential to MJA. Funding was provided by the National Electricity Consumers' Advocacy Panel.

July 2007

Marsden Jacob
Associates

This report has been prepared in accordance with the scope of services described in the contract or agreement between Marsden Jacob Associates Pty Ltd ACN 072 233 204 (MJA) and the Client. Any findings, conclusions or recommendations only apply to the aforementioned circumstances and no greater reliance should be assumed or drawn by the Client. Furthermore, the report has been prepared solely for use by the Client and Marsden Jacob Associates accepts no responsibility for its use by other parties.

CONTACT : Dr Jeff Washusen (jeff.washusen@marsdenjacob.com.au)



Financial & Economic Consultants

Level 3, 683 Burke Road, Camberwell, Victoria 3124
Tel: (03) 9882 1600 Fax: (03) 9882 1300
Email : economists@marsdenjacob.com.au

TABLE OF CONTENTS

	Page
Executive Summary	i
1. Introduction	1
2. Background	4
2.1. Reliability Panel guidelines	5
2.2. NEMMCO's Role	11
2.3. NEMMCO Invitation to Tender document	12
2.4. NEMMCO's Draft Reserve Agreement	15
3. The ERPL Tender Response	19
3.1. Challenges faced by ERPL	20
3.1.1. Dealing with NEMMCO's Reserve Agreement	20
3.1.2. Communicating With (an Emerging) Market	22
4. Conclusions and Recommendations	25
4.1. Main Conclusions	25
4.2. Recommendations	27

Executive Summary

BACKGROUND

This report presents the outcomes of Marsden Jacob Associates (MJA) observation of Energy Response Pty Ltd's (ERPL) successful attempt to participate in the NEMMCO reserve capacity tender process that was undertaken prior to the 2006 summer. In a period of just over 2 months, ERPL managed to recruit up to 150MW of DSR capacity, aggregate that capacity to form 125MW of reliable and dispatchable reserve capacity, and prepare and submit a tender in a relatively 'opaque' process defined by NEMMCO's rather complex tender documents.

MJA believes it is self-evident that ERPL's effort was effective. There are two primary pieces of evidence that support this assertion. The first is that NEMMCO accepted ERPL's tender proposal, which shows conclusively that ERPL had been able to convince NEMMCO that its systems and processes could meet NEMMCO's specified requirements – including for reliability. The second is that, in a short period of time, ERPL was able to recruit – and sign contracts with - around 150MW of demand response capacity from a significant number of individual end users offering a diverse range of type and increment of capacity. Given the time constraints in the tender formation period (and the limited budget for MJA's input), MJA did not commit any significant resources to examination of either aspect of ERPL's tender.

However, despite ERPL's success, NEMMCO managed to procure only 375MW in reserve capacity compared to a forecast shortfall of at least 500MW.

ERPL willingly shared information with MJA during execution of this assignment but MJA agreed to respect intellectual property rights embedded in ERPL's systems, processes and marketing methods. Accordingly, the report contains little information on these aspects of ERPL's response to NEMMCO's tender. It is MJA's view that this does not compromise the value of this report.

It is MJA's view that greater value would come from addressing deficiencies in NEMMCO's processes, virtually all have their origins in the Rules and Reliability Panel Guidelines, than disclosing ERPL's intellectual property. Accordingly, the report focuses particularly on deficiencies in the NEMMCO tender process, attempts to identify the root causes of these difficulties and provides recommendations for addressing these deficiencies.

MAIN CONCLUSIONS

In essence, the primary deficiencies in the NEMMCO process reflect a lack of focus in the Rules, and in the Reliability Panel guidelines that govern NEMMCO's procurement of reserve capacity, on the potential for end users to provide effective and timely DSR that could be activated to provide reserve capacity. These deficiencies are possibly aggravated by the legalistic approach that NEMMCO has used to develop its tender documents and the 'risk averse' way that NEMMCO interprets its role. The deficiencies are manifested through:

- Complex cross-referenced obligations and requirements specified in the NEL, the Rules and guidelines prepared by the NEM Reliability Panel that make it virtually impossible for end users to develop a detailed understanding of these provisions.
- Lack of initiative by NEMMCO, and the jurisdictions, in informing end-users of the opportunities available through the reserve capacity tender process. Both the EUAA and ERPL made considerable effort to do this, but both are constrained by limited resources.
- NEMMCO's failure to address the fact that the NEM 'market' for reserve capacity is almost completely 'opaque'. This meant that prospective reserve capacity providers have no rational basis for deciding whether or not the effort involved in forming a tender offer is likely to be worthwhile. A notable feature of the NEMMCO tender documentation is that it contained no information to assist tenderers understand how NEMMCO established acceptable pricing levels. Nor is any information provided about assumptions or methodology used by NEMMCO to assess benefits derived from a reserve contract; or the views that participating jurisdictions provided on the value of contracting for reserve.
- This 'opacity' is a significant factor that inhibits end-user participation in the reserve capacity tender process. It caused considerable difficulty for ERPL and required substantial intellectual and organisational effort to be dedicated to derivation of tender prices without ERPL having any clear idea of whether or not the prices it proposed were likely to be 'competitive' or not.
- A critical part of this problem stems from the fact that NEMMCO is required to consult with relevant jurisdictions, including a requirement established by the Reliability Panel's guidelines to take into account the views those jurisdictions have on the value of contracting for reserve. However, there is no requirement for NEMMCO or the jurisdictions to disclose the matters that are subject to consultation, the details or timing of the consultation process or any outcomes arising from that consultation.
- In addition, the combined requirements specified in the Rules and the Reliability Panel Guidelines, while not unreasonable in themselves (for an energy only wholesale market design), effectively exclude Market Participants from the reserve capacity tender process and impose obligations on end-users and third party aggregators that act as a disincentive to participate in the tender process. However, NEMMCO's tender documents take no account of this. Given that end users are very likely to be the only source of reserve capacity, it would be highly desirable for NEMMCO to develop a set of tender documents that clearly focus on making it as easy as possible for individual end-users and third party aggregators to participate successfully in the tender process.
- There is no doubt that the complexity of the NEMMCO documents acts as an effective 'barrier to entry' to many end users who might otherwise be enticed to offer DSR capacity. ERPL's role as an independent DSR aggregator played a part in addressing some of this complexity and made it easier for individual end users to participate. However, ERPL had no choice but to commit substantial resources to reviewing and understanding the implications of these documents. In fact, ERPL put more time, resources and energy into 'interpreting' NEMMCO's draft Reserve Agreement and 'translating' it into a far simpler DSR provider agreement than any other aspect of the tender process. ERPL demonstrated that this was a necessary and beneficial part of the process – and it was readily accepted by end users.

RECOMMENDATIONS

By addressing the key deficiencies identified in this report, NEMMCO and the jurisdictions could assist in ‘enticing’ greater end user interest and involvement in provision of reserve capacity. Accordingly, MJA recommends that the following actions be implemented to improve the reserve capacity procurement process:

1. The EUAA should encourage NEMMCO and the jurisdictions to engage in effective consultation with end users with a view to developing tender and contract documents that meet NEMMCO’s legitimate legal requirements in a manner that is as ‘user-friendly’ as possible.
 - a. A start to this process should be the adoption by NEMMCO of recommendations made by Maddocks in their report to the EUAA on the draft Reserve Agreement. The goal should be to develop a simple, plain English agreement that adequately addresses NEMMCO’s obligations while encouraging end-user engagement in the reserve capacity tender process.
 - b. Otherwise, the EUAA should develop its own plain English agreement and seek funding from the Advocacy Panel or some other relevant source to assist with this.
2. The EUAA should lobby the Reliability Panel, NEMMCO and the AEMC to closely examine the provisions of the Western Australia electricity market rules (WAEM Rules) with a view to incorporating as many of the features as possible of WAEM Rules into the NEM reserve capacity procurement process. .
3. The Rules be amended to explicitly specify the matters that NEMMCO may include in consultation with the jurisdictions and the timing of those consultations; and preferably limits these matters to the timing, duration and magnitude of forecast reserve shortfalls.
4. The rules be amended to require NEMMCO to publicly disclose full details of consultations with the jurisdictions, including the any views the jurisdictions express related to the value of reserve capacity.
5. The Rules be amended to require NEMMCO to include in its tender documents comprehensive details of the assumptions, methodology, approach and sources of information that it will use to establish the ‘likely cost’ and likely value’ of reserve capacity.
6. The Rules be amended to require NEMMCO to advertise in leading daily newspapers in each jurisdiction where reserve capacity is required calling for tenders for reserve capacity.
7. NEMMCO be required to engage more closely with end users and bodies such as the EUAA about its reserve capacity processes and seek to make better use of communications with them to help secure reserve capacity when needed. NEM jurisdictions should support these efforts.

8. In any case, the EUAA should seek to develop its capacity to support its members and other users in providing DSR, including reserve capacity, and develop processes for doing so (eg communications, capacity building, 'how to' material) and seek funding from the Advocacy Panel or other relevant source to do so.
9. The EUAA should proactively seek to amend the Rules, as outlined above, if necessary.
10. More generally, the EUAA should continue its efforts to develop DSR as a 'natural' part of the NEM and as both the source of greater reserve capacity and to limit the need for use of the interventionist Reserve Trader process.

1. Introduction

On 23 September 2005, the National Electricity Market Management Company (NEMMCO) issued an Invitation to Tender (ITT)¹ that sought to procure up to 500 MW of reserve capacity for the Victoria and South Australia regions of the National Electricity Market (NEM) over the period from 16 January 2006 to 10 March 2006.

This was the first time that NEMMCO had utilised the ‘reliability safety net’ provisions contained in clause 3.12 of the National Electricity Rules (Rules); but the third time since the NEM commenced on 13 December 1998 that similar provisions had been invoked or contemplated.²

Calls for reserve capacity tenders made by NEMMCO in the previous year (under identical provisions in the National Electricity Code³) drew an inadequate response, with NEMMCO being offered only 90MW of reserve capacity compared to a forecast shortfall of over 180MW. Even though all the offered capacity came from end users, Energy Users Association of Australia (EUAA)⁴ members reported to the EUAA that a major reason why many declined to offer demand side reserve capacity during the 2004-05 tender was the complexity of legal aspects associated with preparing the tender responses.

The 2005-06 reserve capacity tender provided an opportunity for a significantly different outcome through the entry in December 2004 of Energy Response Pty Ltd (ERPL)⁵ as Australia’s first demand side aggregator. ERPL is an Australian company providing an innovative set of products based around the formation of an effective demand side response (DSR) capability in the NEM. The major systems employed by ERPL were developed from the successful EUAA DSR Trial that was undertaken in late 2002.⁶ The ERPL systems provide an open access DSR aggregation facility, which is available to all electricity end users who can offer DSR. ERPL uses these systems to create products aligned to the various needs of energy users, NEM Market Participants and to NEMMCO as reserve capacity.

ERPL and the EUAA agreed to work together to prepare and submit a response to NEMMCO’s 2005-06 reserve capacity tender. The EUAA’s role was limited to informing its members and other interested users about the opportunity, assisting the ERPL response in legal matters and undertaking an assessment of the process. The Advocacy Panel provided

¹ *Invitation to Tender - National Electricity Market Reserves for 2006*, National Electricity Market Management Company Ltd, ISSUE DATE: 23 September 2005.

² A similar provision was exercised by the Victorian Power Exchange under the Victorian electricity market arrangements in late 1997 to assure provision of adequate reserve capacity in early 1998.

³ Now renamed and revised to form the National Electricity Rules.

⁴ The EUAA is an incorporated non-profit organisation formed in 2001 as a national body to represent the interests of its members (electricity and gas users) on a range of energy policy, regulatory, customer and industry issues. It has operated under other names since 1996. The EUAA also acts as a forum for discussion, education and information exchange among end users and other stakeholders. Advocacy on behalf of end users is a main role of the EUAA. EUAA members are mainly business users with activities across all states and many sectors of the economy. The EUAA has approximately 85 members.

⁵ ERPL lodged a bid to provide 10MW of reserve capacity during the 2004-05 tender process. However this bid was rejected by the NEMMCO Board because it was submitted after the published closing date for tenders.

⁶ *Trial of a Demand Side Response Facility for the National Electricity Market – Independent Consultant's Report*, Energy Users Association of Australia (prepared by Pareto Associates Pty Ltd), April 2004.

funds for some of this work. All output referred to above has been, or is being, made available to EUAA members and the Panel.

The NEMMCO 2005-06 reserve capacity tender process had some success. NEMMCO procured a total of 375MW of reserve capacity for a period of 7½ weeks for a total cost of \$4.35 million, with all contracted capacity coming from end users. This was well above the 90MW procured in the 2004-05 tender process, but still well below the 500MW specified initially. As luck would have it, the peak system demand forecast by NEMMCO did not eventuate because there was no run of hot days during the working week in both South Australia and Victoria at the same time. This meant that NEMMCO was not required to dispatch any reserve capacity.

This report provides an assessment of the NEMMCO tender process, identifies some of the ‘lessons learnt’ by ERPL and provides recommendations for improvement to the NEMMCO tender process. The information in this report will be used by the EUAA for advocacy to relevant stakeholders and interested parties, as well as to provide a basis for improved customer awareness and information in respect of both future reserve capacity procurement processes and DSR more broadly.

Marsden Jacob Associates (MJA) was commissioned by the EUAA to undertake a review of ERPL’s tender preparation and prepare this report. MJA participated in regular meetings with senior ERPL managers throughout the tender preparation process and attended a ‘tender briefing’ between ERPL and NEMMCO. MJA’s initial findings and views were presented to a public seminar organised by ERPL in March 2006.

ERPL provided access to all relevant documents and openly shared information with MJA during the tender process. However, much of the material provided by ERPL contained commercially confidential information or represented ERPL’s intellectual property. MJA accordingly agreed not to include material in this report that would compromise ERPL’s commercial interests or its intellectual property. A copy of the draft of this report was reviewed by both ERPL and EUAA, and the key findings and recommendations discussed with NEMMCO.

Wherever possible, MJA has relied on public domain information and documents and used these as sources to inform the views, opinions and recommendations contained in this report. This approach has three principal advantages in that it:

- avoids disclosure of confidential information and intellectual property developed by ERPL and shared with MJA during the tender process;
- relies on information that is available to end users⁷ who may consider participation in a NEMMCO reserve capacity tender process, which assists in highlighting inadequacies and deficiencies in the current arrangements; and
- more readily allows the ‘causes’ of gaps in the reserve tender process to be identified.

⁷ Some of this information sought by MJA to prepare this report proved relatively difficult, and sometimes impossible, to locate. Several relevant documents were located on the archived National Electricity Code Administrator (NECA) Website that is maintained by the Australian Energy Market Commission (AEMC). However, the NECA Website contains few, if any, documents that could assist in explaining the background and history relevant to development of several of the key arrangements that impact on NEMMCO’s tender process.

The NEMMCO reserve capacity tender process is intended to be transparent and public. Although MJA was given access to all information used by ERPL, the information that MJA refers to in this report is essentially the same information that end users could access if they chose to participate in the NEMMCO tender process.

2. Background

NEMMCO has a responsibility under clause 3.2.3(b) of the Rules to regularly assess the adequacy of reserve capacity in each NEM Region in accordance with clause 3.7 of the Rules and in line with criteria and guidelines established by the NEM Reliability Panel under clauses 3.12.1 and 8.8.1 of the Rules.

The Reliability Panel is a body established under s38 of the National Electricity Law (NEL)⁸ with members appointed by the Australian Energy Markets Commission (AEMC) under clause 8.8.2 of the Rules. A primary function for the Reliability Panel is the setting of a reliability standard under clause 3.12.1 of the Rules.

The Reliability Panel determined in June 1998 that the reliability standard be set at a maximum of 0.002% of unserved demand in any region and established initial reserve capacity contracting guidelines for NEMMCO.⁹ The initial reliability standard has been maintained. However, the Reliability Panel published new guidelines on 15 September 2005,¹⁰ in accordance with clause 8.8.1 of the Rules that subtly altered the process that NEMMCO is required to follow in the procurement of reserve capacity.

The regulatory and market arrangements that govern NEMMCO's execution of the reserve capacity tender process are defined through relatively complex cross-referenced obligations and requirements specified in:

- The NEL;
- The Rules; and
- Advice and guidance prepared by the NEM Reliability Panel in accordance with the Rules.

NEMMCO relied on relevant provisions from these sources to form the reserve capacity tender documents to which ERPL responded. The primary tender documents are:

- The ITT that specifies details of the tender process and the form, nature and details of information that tenderers were required to include in a conforming tender; and
- A draft Reserve Agreement that specifies the legal obligations of both NEMMCO and the reserve capacity provider and incorporates all the relevant technical and commercial information taken from successful tenderers' proposals.

As noted above, MJA has used each of these documents as primary sources of information for the material presented in this report.

⁸ The NEL is implemented under a co-operative legislative scheme, with 'lead' legislation being the *National Electricity (South Australia) (New National Electricity Law) Amendment Act 2005*, with the NEL being a schedule to that Act. The Rules were initially created by the SA Minister for Energy under s90 of the Act (through suitable editing of the National Electricity Code) and can be amended by the Australian Energy Market Commission under s34 of the Act. The NEL is 'picked up' and applied by *Application Acts* in each of the other participating jurisdictions, New South Wales, Victoria, Queensland, and the Australian Capital.

⁹ p. 9 *Determination on Reserve Trader and Direction Guidelines*, Reliability Panel, 2 June 1998. This document was still posted on the old NECA Website on 30 September 2006 at <http://www.neca.com.au/ReliabilityPanelb053.html?CategoryID=35&SubCategoryID=114>.

¹⁰ See: <http://www.aemc.gov.au/electricity.php?r=20060525.143043>.

2.1. Reliability Panel guidelines

The NEMMCO tender process is intended to be competitive, a provision clearly articulated in the original (1998) Reliability Panel determination, which said:

The Panel has addressed the vexed and difficult issue of determining the arrangements for payment for Reserve Capacity. The Panel believes that those arrangements must adhere to the following principles:

- *Recognise the interim, short-term nature of the reserve trader arrangements themselves;*
- *Utilise, as far as possible competitive free market processes, and where this is not possible ensure outcomes are not inconsistent with those expected from a competitive market;*
- *Safeguard against oligopolistic exploitation;*
- *Be equitable, in particular provide a reasonable incentive to the capacity provider, whilst taking due account of the cost impost on the customer.*

The Panel has decided that payment should be through a fully open, competitive tender - i.e. with no predetermined limits - but with provision for independent arbitration if sufficient capacity would otherwise not be available to NEMMCO through bilateral agreements under mutually acceptable terms and conditions.

The Panel notes that one of the short-term aims of the separate work initiated by NECA on Demand-Side Management is to ensure a meaningful level of demand-side participation in that tender process. Realistically, however, even with that participation, the Panel recognises that a tender may not always elicit sufficient responses to be considered genuinely competitive.¹¹

An essential element for a successful competitive market is access to pricing information. There is an abundance of information on pricing outcomes in the energy and ancillary service spot markets (for example) and reasonably accessible information about pricing in the contract markets (for those who care to pay for this service). By comparison, the NEM 'market' for reserve capacity is almost completely 'opaque'. A primary reason for this is, of course, that there is no regular requirement for NEMMCO to contract for reserve capacity, which limits the opportunity to 'create' market information.

Tenderers should be expected to bid at prices at least equal to their opportunity costs. However, end users who may contemplate offering DSR reserve capacity know relatively little about the intricacies of the NEM because it is not core to their business activities. Most would find it useful to be able to assess (at an early stage in the tender process) whether or not their opportunity costs were likely to be somewhere near a 'competitive' market value. If their opportunity costs were clearly too high, they could avoid wasting time and resources needed to form a tender. If they had reason to believe their opportunity cost was likely to be competitive, they might be encouraged to persist (or to consider participating) in the process. Without access to transparent pricing information, they have no rational basis for deciding whether or not the effort involved in forming a tender offer is likely to be worthwhile.

¹¹ p. 16, *Reliability Panel Determination on Reserve Trader and Direction Guidelines*, NECA, September 1998.

There is, of course, a practical challenge in achieving transparency in any ‘reserve capacity’ market. Irrespective of the procurement method, reserve capacity would only ever be rarely despatched, which means that ‘market data’ is always likely to be thin.

Later in this report we outline why the Rules should be amended to require NEMMCO to disclose details of the methodology and assumptions used to estimate relative values used in its tender evaluation process. We also comment favourably on the greater transparency achieved in the West Australian Energy Market (WAEM) ‘reserve capacity’ procurement process.

ERPL also faced the same challenge as individual end users who may have been contemplating participation in NEMMCO’s tender process. ERPL was required to develop its tender and commit substantial resources to ‘recruiting’ DSR providers without having a clear idea of what constituted a ‘competitive price’ or ‘reasonable value’ in the reserve capacity market.

The NEMMCO ITT documents contain no information that might assist in overcoming this problem; nor any information that might assist tenderers establish what NEMMCO might view as a ‘competitive’ value for reserve capacity. Indeed, a notable feature of the tender documentation is that it contains no detailed information to assist tenderers understand how NEMMCO’s view of pricing levels might be established.¹²

The NEMMCO ITT identifies both the 1998 Reliability Panel Determination that established the core reliability criteria of 0.002% unserved energy and ‘new’ guidelines issued by the Panel in September 2005. But none of the NEMMCO tender documents explain the significance of either document, the latter of which appears to make a particularly important contribution to ‘opacity’ of the reserve capacity market.

The ‘new’ Reliability Panel guidelines¹³ are shown in full in the box below.

Revised guidelines for intervention by NEMMCO for reliability

If *NEMMCO* forecasts that there will be a reserve level shortfall that is unlikely to be removed through market responses, and determines that it will be necessary or desirable to enter into contracts for reserve in accordance with clause 3.12.1 of the *Rules*, *NEMMCO* must:

- (a) if the forecast period of reserve shortfall commences more than 2 months from the date *NEMMCO* forecasts the shortfall to occur, publicly call for competitive tenders for the provision of reserve;
- (b) when consulting with each relevant *participating jurisdiction*, seek the views of the *participating jurisdiction* on the value of contracting for reserve for that *participating jurisdiction*;
- (c) not enter into a contract for reserve unless:
 - (i) the tenderer has demonstrated, to *NEMMCO*’s satisfaction, that the *reserve* to be

¹² It should be noted that NEMMCO declined a request from MJA to view documents setting out NEMMCO’s method of estimating the value of ‘lost load’ (and any advice provided to jurisdictions on this matter). NEMMCO responded to this request by stating that disclosure of the final tender outcomes (in total dollar terms and total capacity) was sufficient to inform the ‘market’. MJA does not accept that view, primarily because there is no information available that would enable end users to know whether NEMMCO might change its views on the value of reserve capacity from one tender process to another.

¹³ The final stages of the process of developing the ‘new’ guidelines are summarised in a report prepared for the AEMC by Frontier Economics. *Guidelines for NEMMCO intervention – Report prepared for the AEMC Reliability Panel*, September 2005). See: <http://www.aemc.gov.au/electricity.php?r=20060525.143043>).

contracted for is not the subject of another contract or *market* arrangement that would, in effect, make it available without the contract for *reserve* and would not otherwise be provided without the contract for *reserve*; and

(ii) satisfied that the benefits of entering into the contract for *reserve* are likely to exceed the costs, on the basis of reasonable assumptions about key parameters, including expected demand, and applying any views from the *participating jurisdictions* provided under paragraph (b) on the value of contracting for *reserve*;

(d) not enter into a contract for *reserve* more than 6 months before the date when NEMMCO forecasts the reserve shortfall to occur; and

(e) within 1 month after entering into a contract for *reserve*, *publish* the name of the counterparty to the contract and the volume and timing of *reserve* procured under the contract.

Italicised terms in these guidelines have the meaning given to them in the *Rules*.¹⁴

This is an important document to consider in evaluating the efficacy of NEMMCO's 'reserve capacity' tendering process because it stipulates that NEMMCO must not enter in a contract for provision of reserve capacity unless:

- tenderers demonstrate they will not benefit from 'double-dipping' through another contract or market arrangement and the reserve capacity being offered would not otherwise be made available; and
- NEMMCO is satisfied that the benefits of contracting for reserve are likely to exceed the costs – where the benefits rely on NEMMCO's 'reasonable assumptions' about key parameters derived, *inter alia*, by applying the participating jurisdictions' views of the value of that benefit.

A further practical problem with these Guidelines is that they prohibit NEMMCO from procuring end user 'reserve capacity' at short notice, which means that NEMMCO cannot access such capacity to address unforeseen events that, by definition, are not and cannot be taken into account in NEMMCO's planning processes.¹⁵

The first condition above is similar in effect to clause 3.12.1(f) of the Rules that prohibits 'double-dipping' in the reserve capacity tender process by registered Market Participants who have submitted bids in the energy and ancillary services markets (and, presumably, have entered into arrangements in the contract market). While not unreasonable,¹⁶ this condition has the effect of:

¹⁴ See: <http://www.aemc.gov.au/electricity.php?r=20060525.143043>.

¹⁵ As noted later in this report, this problem does not arise in the WA electricity market 'reserve capacity' procurement process. The WAEM Rules require the WAIMO to procure reserve capacity on a continuous basis. The WAEM 'market design' provides direct rewards for offering capacity to the market, whereas the NEM 'market design' provides only indirect incentives for offering capacity through the 'energy only market design' and requires intermittent 'reserve trader intervention' to address 'market failures' arising from forecast shortfalls in capacity.

¹⁶ NEMMCO's explanation of this provision focussed on the 'need' to prevent contracted Market Participants from 'double dipping'. MJA accepts that this is reasonable only in so far as the Rules limit NEMMCO's use of the Reserve Trader provisions to address capacity shortfalls in the energy market; and allow no role for NEMMCO to satisfy needs external to the wholesale market.

However, MJA notes that ERPL is able to offer 'demand response services' to different 'market segments' (e.g. energy retailers, network service providers and generators) each of which may realise different benefits from the same increment of demand response. MJA believes this is a pragmatic response to the differing needs of energy market participants. However, as noted above, the Rules do not allow NEMMCO to adopt this approach.

- excluding registered Market Participants from the reserve capacity tender process unless they have access to ‘spare’ capacity that does not participate in the energy or ancillary service spot markets or the contract market;
- requiring individual end users to disclose the terms and conditions of any ‘interruptible load’ agreement they may have with their selected energy retailers (or any other party) – which could possibly breach confidentially provisions of those agreements without explicit consent of the retailer (or other party); and
- requiring third party load aggregators (such as ERPL) to gain information from potential DSR providers about the terms and conditions of any ‘interruptible load’ agreement those providers may have with their selected energy retailers (or any other party) – again, which may require explicit consent of the retailer (or other party).

The second condition is even more interesting because neither NEMMCO’s ITT nor the draft Reserve Agreement provide any information about assumptions or methodology used by NEMMCO to assess benefits derived from a reserve capacity contract; nor any information on the views that participating jurisdictions provided on the value of contracting for reserve. In the absence of transparent ‘market price outcomes’, this has the effect of requiring tenderers to price their offers without having any idea about how their costs might compare to NEMMCO’s perceived ‘value’ or NEMMCO’s (and the jurisdictions’) views on what might be ‘competitive’.

In particular, it appears odd (to MJA¹⁷) that none of the tender documents refer explicitly to a role for the jurisdictions in the reserve capacity tender process; or explain what ‘views’, if any, the jurisdictions may have expressed to NEMMCO.¹⁸ Nor was MJA able to find any public domain information or any documents that clarified this matter.

Nor is there any information (readily) available to explain the origins of the explicit legal basis for the jurisdictional involvement in potentially influencing NEMMCO’s evaluation of tenders, admittedly indirectly, through expressing views on the value of contracting for reserves. There is no doubt that the Rules provide for consultation with the jurisdictions in the reserve tender process. For example:

- Clause 3.12.1(a) requires NEMMCO to enter into reserve contracts following guidelines and policies developed by the Reliability Panel – and it is the Panel’s September 2005 guidelines that create the requirement for NEMMCO to apply the views from participating jurisdictions on the value of contracting for reserve.¹⁹

¹⁷ MJA has tried to view the issues that arose in ERPL’s response to the NEMMCO tender process from the perspective of an ‘intelligent, committed end user’ who would not be expected to understand all the intricacies of the electricity market. It is in that context that ‘it appears odd’ that the NEMMCO tender documents say nothing at all about a role for the jurisdictions.

¹⁸ This matter was raised in discussions with NEMMCO after the draft report was completed. NEMMCO’s response was that the revised guidelines had not been published when the reserve capacity tender documents were released. That may be so, but the requirement for NEMMCO to consult with the jurisdictions was incorporated into the (then) Code in 2001; and NEMMCO was fully aware of the contents of the new guidelines when the tender documents were prepared. MJA also notes that NEMMCO declined a request to allow MJA to view documents that demonstrated how NEMMCO established the values used to assess tenders or documents that detailed consultation with the jurisdictions.

¹⁹ The Panel’s role in developing guidelines is triggered by Clause 8.8.1 of the Rules, but this merely states (in clause 8.8.1(a)(4)), that the Reliability Panel’s role is to determine policies and guidelines governing NEMMCO’s exercise of the power to procure reserve.

- Clause 3.12.1(c) requires NEMMCO to consult with jurisdictions prior to entering into reserve contracts – a provision that was added to the (then) National Electricity Code on 25 January 2001.
- Clause 3.12.1(d) requires NEMMCO to agree with the jurisdictions on cost sharing arrangements for reserve contracts.²⁰

MJA accepts that it is appropriate for NEMMCO to consult with the jurisdictions on some aspects of the reserve capacity contracting process, particularly the timing, duration and magnitude of the forecast shortfall. Consultation on such matters would assist the jurisdictions plan for the possible implementation of emergency supply regulations that allow NEMMCO to initiate forced off-loading should the reserve capacity procurement process fail to provide adequate capacity.²¹

However, there is nothing in the Rules that defines the consultation process, the matters for consultation or how the outcomes from that consultation should be treated. For example, clause 3.12.1(c) does not specify (or limit) the matters that NEMMCO is required to, or may, include in consultation with the jurisdictions.²² Clause 3.12.1(c) simply says:

(c) In consultation with persons nominated by the relevant jurisdictions NEMMCO may determine to enter into reserve contracts for the provision of reserve to ensure that the reliability of supply in a region meets the reliability standard established by the Reliability Panel.

Frontier Economics' report to the Reliability Panel²³ on the revised guidelines refers to a change to clause 3.12.1(c) implemented in 2001 and appears to suggest that the Reliability Panel believed inclusion of this clause was sufficient for jurisdictions to be consulted on the value of reserve capacity contracts. Frontier also assumes (or accepts the assumption apparently made by the Reliability Panel) that NEMMCO is required by this clause to consult the jurisdictions on the value of reserve capacity.

It is MJA's view that few large energy users - the ones most likely to offer DSR capacity - would accept Frontier's assertion that '*jurisdictions are best placed to provide information on the maximum price that should be paid for reserves*'²⁴ - particularly if that information is provided without being subject to transparent disclosure. The economic theory of markets, and accepted attributes of good governance, suggest it is beneficial for governments to stay

²⁰ NEMMCO does not disclose the details of these agreements other than to note on its Website in relation to the Reserve Agreements entered into for last summer that:

The costs for these reserves will be shared between the affected jurisdictions, being Victoria and South Australia, in accordance with their relative energy demands (expected to be approximately 25% to South Australia and 75% to Victoria). Market customers (retailers and other wholesale customers) are then allocated a share of the regional costs, based on their relative energy consumption during business hours, as set out in Rules clause 3.15.9. (See: <http://www.nemmco.com.au/powersystemops/190-0011.htm>)

²¹ MJA also notes that capacity shortfalls and forced off-loading can occur even when NEMMCO's forecasts indicate that adequate capacity is available. Forced off-loading caused by loss of the SNOWY-VIC Interconnector due to bush fires on 16 January 2007 is just one example of this.

²² It is possible that this matter is explained in documents prepared for, or submitted to, NECA during the lead up to completion of the Code Change package that included revision of clause 3.12.1. But MJA was unable to locate any such documents on the archived NECA Website.

²³ *Guidelines for NEMMCO intervention – Report prepared for the AEMC Reliability Panel*, Frontier Economics, September 2005.

²⁴ p. 10, *Ibid.*

out of markets unless there is clear evidence of abuse or failure and even then limit their role to implementing the institutional framework necessary to achieve efficient and fair outcomes.

However, it not clear (from available documents) exactly why the Reliability Panel allowed the jurisdictions to have (admittedly indirect) input to, or influence on, what is intended to be an open, competitive tender process.

Clause 8.8.2 of the Rules specifies how the AEMC appoints members to the Reliability Panel, but does not say specifically that any member should represent any jurisdiction. However, the wording of clause 8.8.2(c)(2) allows this possibility so long as there is a representative of Generators, Market Customers, TNSPs, DNSPs and a person representing the interests of end use customers amongst the 8 members that the AEMC may appoint.²⁵ The Reliability Panel is created by virtue of s38 of the NEL. But this specifies only that the composition must be in accordance with the Rules – and assigns no specific role for jurisdictions. The jurisdictions are given powers under s111 of the NEL to develop 'load shedding guidelines', which creates a logical link between matters that might be considered by the Reliability Panel – and is a logical matter to be included in consultations between NEMMCO and the jurisdictions – but no more than that.

This is a most unsatisfactory aspect of the NEMMCO tender process. There appears to be no public domain information anywhere that indicates what 'views', if any, the jurisdictions expressed on the values that NEMMCO should consider. NEMMCO declined to provide any details of its consultation with jurisdictions, but suggested to MJA that none of the jurisdictions made any material comment on any aspect of NEMMCO's approach or process.

Overall, there is no clarity at all about the role of the jurisdictions in the reserve capacity tender process – and this makes it difficult for anyone outside NEMMCO (or the jurisdictions) to form any views on the likely value of reserve capacity. It also adds to the opacity created by lack of information on the potential 'competitive market' price of reserve capacity, and the lack of information on the approaches and methodologies that NEMMCO might apply in assessing the 'likely cost' and 'likely value' of reserve capacity.

This 'opacity' is a significant factor that inhibits end-user participation in the reserve capacity tender process. This opacity caused considerable difficulty for ERPL and required substantial intellectual and organisational effort to be dedicated to derivation of tender prices without ERPL having any clear idea of whether or not the prices it proposed were likely to be 'competitive' or not. This adds to the major deficiencies that NEMMCO has constructed by using overly complex documentation to create considerable and effective 'barriers to entry' for end users.

NEMMCO declined to provide any information to MJA – even a verbal explanation – of the methodology and assumptions used to establish values applied in the tender evaluation process.

²⁵ The current members of the Reliability Panel were appointed by the AEMC on 1 January 2006. There are currently no persons on the Reliability Panel that explicitly represent jurisdictions. As far as MJA is aware, there has never been any persons who explicitly represent the interests of jurisdictions on the panel, although there have always been persons from NEMMCO (which is a government-owned entity) and persons representing government-owned Market Participants as members.

The box below suggests three possible approaches that might reasonably be used to get a ‘feel for the market’ in the absence of actual market information. But it is impossible to say whether any of these was used by NEMMCO to inform its views; or whether any of these approaches would have assisted ERPL prepare its tender.

Estimating the ‘market’ value of reserve capacity

1. Assume ‘new entrant’ generator cost: A rational way to form a view of the ‘competitive’ benefits to be derived from contracting for reserve capacity would be to estimate the cost of new entrant generation capacity that could meet the reserve requirement on an intermittent, irregular basis. For example, by estimating the cost for an open-cycle gas turbine unit.

2. Assess the risk-adjusted benefit of contracting for reserve capacity: An alternative approach would be to assess the likelihood of the capacity being required and the consequences that would arise if the capacity was, and was not, procured through the reserve capacity tender process.

- If the reserve capacity was available, NEMMCO would incur the costs of contracting for and dispatching the capacity.
- If the reserve capacity was not available (or the amount contracted was less than required), Market Participants and end-users may incur costs associated with extreme high spot prices and possible forced off-loading.
- Logically, the probability that dispatch of reserve capacity would be required and extreme high spot prices (and off-loading) occurring would be of a similar order; but the consequences would be assigned markedly different values.

In the scenario where reserve capacity was dispatched, NEMMCO could (reasonably reliably from the bids it received) estimate the costs of procuring the availability of this capacity and could rationally estimate the likelihood that the capacity would be dispatched (ideally using its MT PASA forecasts), and the consequent costs if it was dispatched.

Similarly, where no, or less than the forecast amount of, reserve capacity was contracted, NEMMCO could rationally estimate (or model) the likelihood of the spot price rising to extreme high levels and/or forced off-loading occurring. NEMMCO could estimate the costs incurred using modelled pool price outcomes and, if available and relevant, apply a jurisdictionally specific value for off-loading.

3. Use information from the Western Australian Reserve Capacity auctions: A further rational way to form a view of the ‘competitive’ benefits to be derived from contracting for reserve capacity would be to refer to published costs for the WAEM reserve capacity mechanism. This methodology is documented by the WA Independent Market Operator and is essentially identical to option 1 above. (see: http://www.imowa.com.au/max_rc_price.htm#)

It is likely (possibly certain) that the computational effort required to perform the analysis any of the approaches above would be beyond the capability of any individual prospective DSR provider. The second approach is, most likely, even beyond ERPL’s substantially greater capability. And given the differences in design of the NEM and the WAEM, it may not be appropriate to use WA reserve capacity prices.

Accordingly, it would be better – and more transparent – for NEMMCO to disclose the methodology it proposed to use, and any information related to the values that it applied, rather than to provide no information at all on this process.

2.2. NEMMCO’s Role

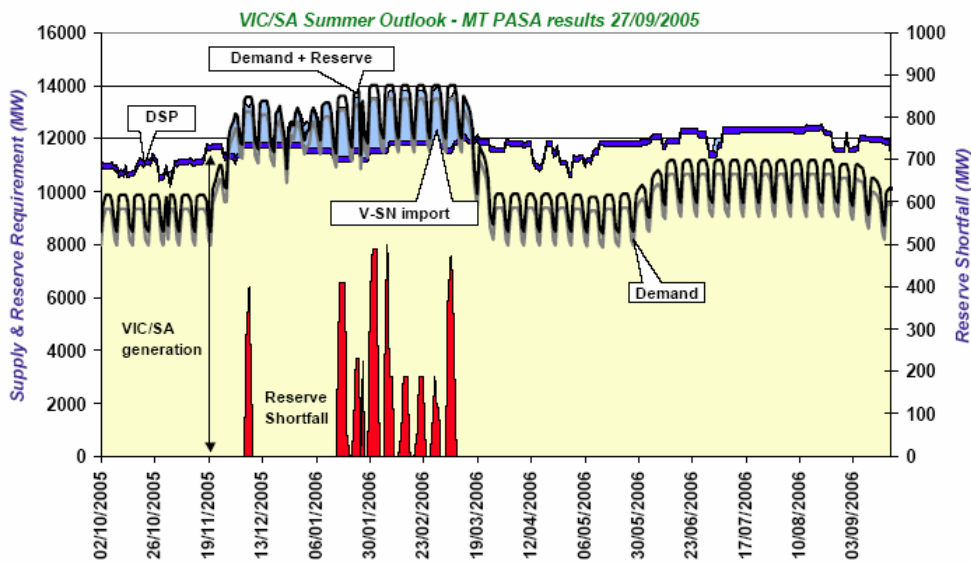
NEMMCO publishes on its Website²⁶ the results of its weekly assessment of the reserve required to meet the reliability standard set by the Reliability Panel. Usually, there is sufficient reserve available from scheduled generating units to meet the reserve requirement.

²⁶ See: http://www.nemmco.com.au/data/market_data.htm#PASA

Where insufficient reserve is forecast, clause 3.12.1(c) of the Rules provides NEMMCO may enter in reserve capacity contracts (subject to consultation with jurisdictions).

On Wednesday 6 July 2005, NEMMCO announced that a shortfall in reserve for the combined Victorian and South Australian regions of 138MW had been assessed for the forthcoming summer period. This margin increased to 530MW by the time NEMMCO formally called tenders for provision of reserve capacity in September 2005. A graph provided by NEMMCO illustrating the forecast reserve shortfall estimated at 27 September 2005 is shown below (Chart 1).

CHART 1: ESTIMATED RESERVE SHORTFALL AT 27 SEPTEMBER 2005



Source: NEMMCO

2.3. NEMMCO Invitation to Tender document

NEMMCO issued an ITT on 23 September 2005 that sought to procure up to 500 MW of reserve for the Victoria and South Australia regions over the period from 16 January 2006 to 10 March 2006. Procurement of the indicated reserve capacity was subject to:

- power system conditions forecast over the 2005/06 summer period at the time the contracts were to be finalised that may have required:
 - the term to be different to that indicated above;
 - the amount of reserve capacity procured to be higher or lower than indicated above (for example, if available generation in Victoria and South Australia were to reduce the amount may have been higher, or if the Basslink interconnection were to become available earlier the amount may be lower); and
- the cost of the reserve offered, with NEMMCO reserving the right to accept less reserve than that proposed by a tenderer, in its absolute discretion.

The ITT also noted that:

- the reserve was required to maintain minimum reserve levels in the NEM based on forecast levels of demand, scheduled generation and scheduled load availability; and
- precise dispatch or activation requirements could not be known ahead of time, and it was possible that reserve may not be dispatched or activated at all during the term.

That is, the ITT clearly indicated that the requirements specified in the tender documents might change at any time up to the tender closing date; and that even if contracted, a reserve capacity provider may not be dispatched.

The ITT specified a timeframe for execution of a tender process that began with issue of the ITT on 23 September 2006 and finished with completion of the contract arrangements, including execution of *Reserve Agreements* with the successful tenderers, no later than 13 January 2006. Tenderers were required to submit their tenders no later than 7 November 2005.

The timing allowed for the tender process is influenced by the requirements specified in clause (a) of the Reliability Panel guidelines and the uncertainty surrounding the forecast requirement. The 6 week tender preparation period required ERPL to marshal its resources immediately and maintain a concentrated effort for the entire period. The short duration of the actual tender process and the level of uncertainty about the requirement for reserve are both very likely to be factors that would discourage some end users from participating in the tender process.

Given the uncertainty surrounding NEMMCO's forecasts, it is possible that NEMMCO could assist in encouraging end user participation by maximising exposure of the opportunity in its regular 'market updates' and through broad advertising of the tender opportunity. In the absence of a broad 'advertising campaign' by NEMMCO (or even the jurisdictions) that could inform end-users, the efforts of the EUAA to inform its members of the opportunity and ERPL in recruiting DSR providers were undoubtedly crucial in increasing the reserve capacity offered to NEMMCO – even though the total amount offered fell below NEMMCO's specified requirement.

The ITT contained 43 pages of instruction and specifications including material relating to:

1. an introduction (3 pages);²⁷
2. specification of the tender process and content required for conforming tenders (7 pages);
3. explanations/instructions on pricing requirements to be included in conforming tenders (2 pages);

This section specified that pricing (fixed for the period specified in the tender) had to be submitted for three components, an availability charge, and enabling charge and a usage charge.²⁸

²⁷ The number of pages indicated for each part of the ITT documents is approximate only.

²⁸ These are all legally defined terms that appear either in NEMMCO's tender documents or the Rules. The definitions in these documents are 'legalistic' with numerous inclusions of other defined terms. This makes it quite difficult to understand the definitions. Colloquial meanings for these terms are:

- *availability charge* is a payment for offering to make reserve capacity available for despatch as and when requested by NEMMCO;

4. explanations/instructions on what constituted ‘reserve’ in a conforming tender (4 pages);
5. a definition of non-performance measures (1 page);
6. explanation of the principles to be used for evaluation of tenders (2 pages);

All of this explanation is of a general nature and some appears to rely on NEMMCO’s discretion and NEMMCO’s interpretation of what might be ‘fair & reasonable’. For example, NEMMCO is permitted to take into account:

- (ii) *the likely price in a competitive market environment of acquiring the reserve tendered; and*
- (iii) *the likely cost to the tenderer of providing the reserve tendered for.*

However, there is no information in the tender documents that explains what information NEMMCO might use or how NEMMCO might determine the ‘likely price’ or the ‘likely cost’.

Nor was there any information included in any of the tender documents to:

- indicate an expected range of pricing;
- define or suggest any particular methodology for determining the pricing level;
- explain the process, approach, methodology or assumptions that NEMMCO might use to assess any aspect of cost, benefit or value;
- explain the role of jurisdictions in establishing the value of reserve capacity (as provided for in the Reliability Panel guidelines).

7. standard *pro forma* to be used in compiling tenders (10 pages);

The majority of these *pro forma* require information to be provided that describes the physical arrangement of the reserve capacity being offered, and how the capacity would be maintained, despatched and measured.

None of the *pro forma* required tenderers to provide information on how their prices were determined for the availability charge, enabling charge or usage charge, even though this might have assisted NEMMCO ‘take into account the likely cost to the tenderer of providing reserve’.

8. a Glossary of technical and legal terms used to define the basis for the content required for conforming tenders (3 pages); and
9. a complex decision flow-chart that illustrates the communications and despatch arrangements required for conforming tenders (2 pages).

The ITT is a relatively complex and ‘user-unfriendly’ document that uses legal language extensively, but provides little information that might assist prospective reserve capacity providers clearly understand the potential opportunity being presented. For example, and as described in detail in earlier sections, the ITT says nothing about the role of the jurisdictions

-
- *enabling charge* is a payment to prepare the offered capacity for despatch as and when requested by NEMMCO; and
 - *usage charge* is a payment for actual despatch of the capacity as instructed by NEMMCO.

in the tender process and contains no meaningful information that would assist prospective tenders establish whether or not their opportunity costs would be ‘competitive’.

2.4. NEMMCO’s Draft Reserve Agreement

The NEMMCO draft Reserve Agreement specifies the legal obligations of both NEMMCO and the reserve capacity provider. The draft Agreement contained 66 pages of relatively complex legal language covering the following areas:

- the date of execution of the agreement and identification of the parties to the agreement;
- a brief ‘recital’ stating that the parties agree to the terms and conditions of the agreement;
- 26 pages of ‘Operative Provisions’ covering:
 1. Interpretations and referral to 27 pages of Schedules appended to the body of the agreement that specify the detailed ‘technical’ provisions of the agreement (1 page);
 2. Term of the agreement, which may be the period indicated in the ITT, subject to numerous modifying clauses in the agreement (1 page);
 3. Provision of Reserve, which defines the legal arrangements applying to notification and provision of reserves as defined in the body of the agreement and the relevant schedules (2 pages);
 4. Testing required to demonstrate that the reserve capacity was available and could be despatched as required (4 pages);
 5. Measurement and verification of reserve capacity despatched (1 page);
 6. Keeping of records and provisions for the audit and inspection of records (3 pages);
 7. A prohibition on modification (without NEMMCO’s consent) of equipment providing reserve capacity (1 page);
 8. Payments (4 pages);
 9. General conditions of contract including liability, *force majeure*, default, assignment, dispute resolution, warranties, compliance with legislation and other matters of a general nature (14 pages);
 10. Definitions and interpretation (7 pages);
 11. Schedules covering reserve capacity in the form of generation and load reduction (27 Pages):
 - Definitions used in the Schedules;
 - Details of the reserve capacity being offered;

- Specification of the minimum levels of performance to be achieved during despatch (which covered 5 pages of the each set of Schedules);
- Specification of the testing requirements;
- Specification of maintenance requirements;
- Specification of measurement and verification requirements;
- Specification of the format of billing;
- Details of the term being offered; and

12. The contract execution page.

As EUAA members observed in the 2004-05 reserve capacity tender process, NEMMCO's tender documents were relatively complex and legalistic; and they remained largely unchanged for the 2006-06 tender process.

It is MJA's view that many individual end users would find the process of dealing with such complex legal documents sufficiently daunting to discourage their participation in the reserve capacity tender process. The documents are, without doubt:

- too complex to entice the potentially large number of end users who could provide DSR reserve capacity into a reserve capacity market; and
- so complex that ERPL was forced to put more resources into dealing with the complexity and developing its own, very much simpler, documents that end users would be prepared to sign, than any other aspect of its tender preparation process (at considerable cost and resources).

There is no doubt that the complexity of the NEMMCO documents acts as an effective 'barrier to entry' to many end users who might otherwise be enticed to offer DSR capacity. This would almost certainly have resulted in missed opportunities for NEMMCO.

As discussed later in this report, ERPL had no choice but to commit substantial resources to reviewing and understanding the implications of these documents. In fact, as mentioned above, ERPL put more time, money, resources and energy into 'interpreting' the NEMMCO draft Reserve Agreement and 'translating' it into a far simpler DSR provider agreement than any other aspect of the tender process. ERPL demonstrated that this was a necessary and beneficial part of the process. The ERPL agreement effectively covered all of the rights, obligations and responsibilities that were included in the 66 pages of NEMMCO's highly complex, legalistic Reserve Agreement – and was readily accepted by end users. This raises the issue that other potential DSR providers and individual users would not have been prepared to do this and missed opportunities would have resulted.

MJA also finds that the NEMMCO documentation and approach are very complex compared to both:

- similar arrangements for procuring reserve capacity in the Western Australian electricity market (WAEM); and
- the simple agreement developed and used by ERPL to contract with end user DSR providers that in both effect and law dealt with the same range of issues covered by nearly 100 rather legalistic pages of NEMMCO's documents.

ERPL invested substantial intellectual effort in developing its contract documents. This is intellectual property that gives ERPL a substantial advantage in selling its services. It is a matter for ERPL to decide what it does with this intellectual property but MJA understands that ERPL has not released this documentation to the broader public.

However, MJA recommends that the EUAA encourage NEMMCO to develop tender and contract documents that meet NEMMCO's legitimate legal requirements in a manner that is as 'user-friendly' as possible and more akin to the WA and ERPL approaches. It also recommends that NEMMCO engage in effective consultation with end users on what would be a more effective and successful approach to contracting for reserves. MJA understands that the EUAA is willing to do both and to work in collaboration with NEMMCO to achieve this outcome.

MJA also recommends that the EUAA lobby the Reliability Panel, NEMMCO and the AEMC to closely examine the provisions of the Western Australia electricity market rules (WAEM Rules) with a view to incorporating as many of the features as possible of WAEM Rules into the NEM reserve capacity procurement process. If needed, MJA recommends that the EUAA advocates for Rule changes to this effect – even though it is recognised such changes would require abandonment of an 'energy only market design' In particular, it is noted that:

- the WA Independent Market Operator (IMO) is required to run an annual 'reserve capacity auction',²⁹
- anyone can offer to provide reserve capacity under the WAEM Rules;
- if a bid is accepted, the 'facility' is 'certified' and assigned Capacity Credits that require the holder to dispatch when requested in accordance with the conditions of their bid, with the dispatch sequence determined by the next dispatch price that would result in the lowest overall cost of energy.
- information is published by the IMO on the value of Capacity Credits that apply in the current and next year (dispatch price information is not publicly disclosed, but is used by the System Operator to sequence dispatch, which possibly allows indicative dispatch price values to be interpreted from detailed examination of market data files);³⁰
- the IMO has issued around 140MW of Capacity Credits to end-users, which represents around 4% of maximum demand – even though the total number of Capacity Credits exceeds the Reserve Requirement by 200MW, which causes the Monthly Reserve Capacity Price to be below the maximum;
- Monthly Reserve Capacity Price payments would probably meet around 25% of the long-run average cost of owning and operating a base load generation unit; and
- the Monthly Reserve Capacity Price for 2008-09 is \$8,152.91/MW compared to the current price of \$10,625/MW and the (apparent) average of \$5,802.60/MW for the 'availability charge' component in NEMMCO's tender.³¹

²⁹ The WAIMO advised that the first capacity auction was run by Western Power and the second was unnecessary because the IMO has certified 4,600MW of capacity compared to a Reserve Capacity Requirement of 4,322MW (and max demand around 3,500MW).

³⁰ see: <http://www.imowa.com.au/Attachments/ReserveCapacityPriceFor2008-2009.pdf>

³¹ Information on the NEMMCO Website suggests an average 'availability charge' of \$5,802/MW/month (\$4.352M for 375MW over 2 months). (Interpreted from: <http://www.nemmco.com.au/powersystemops/190-0011.htm> and http://www.nemmco.com.au/data/reserve_recovery.htm).

The arrangements under the WAEM Rules are obviously a much more 'user-friendly' and transparent process than the process used by NEMMCO.³² The WAEM process also ensures that DSR provides a more 'natural' part of the WA power market, rather than being *ad hoc* and interventionist like the existing Reserve Trader arrangements in the NEM

³² It should also be noted that the WEM Rules are contained in only 512 pages compared to 817 pages for the NER.

3. The ERPL Tender Response

As noted in the Introduction, MJA participated in regular meetings with senior ERPL managers throughout the tender preparation process and attended a ‘tender briefing’ between ERPL and NEMMCO. ERPL provided access to all relevant documents and openly shared information with MJA during the tender process.

Essentially, ERPL’s response to the ITT involved execution of four major workstreams. These were:

- refinement and development of IT systems and processes for aggregation and dispatch of DSR capacity, including:
 - review of IT systems, and where necessary minor modification and refinement, to ensure the systems and processes fully complied with NEMMCO’s specified requirements for testing, measurement, monitoring, notification, maintenance and dispatch of capacity offered in the tender;
 - compilation of individual dispatch profiles that matched the timing, duration and dispatch capability offered by each DSR provider;
 - testing of IT systems to ensure the increments of capacity offered by individual providers could be aggregated and ‘mixed & matched’ to deliver reliable increments of dispatchable reserve capacity at any time during the period specified in NEMMCO’s ITT;
- recruitment of DSR providers willing to participate in the NEMMCO reserve capacity program, including advice on pricing and identification of suitable increments of capacity (both load and on-site generation);
- ‘interpretation’ and ‘translation’ of NEMMCO’s Reserve Agreement, including:
 - a detailed review of the agreement by ERPL’s solicitors which identified a number of errors and omissions in NEMMCO’s agreement and led to proposals for improvement to numerous parts of the agreement;
 - preparation of a simple DSR Provider Agreement that ‘captured’ the essential elements of NEMMCO’s Reserve Agreement, and was used as the basis for the legal agreement between ERPL and individual DSR providers;
- formation of the tender response, including:
 - examination and analysis of ‘confidential technical information’ provided by NEMMCO that was intended to provide an example of how NEMMCO would interpret the dispatch of DSR capacity;
 - development of the reserve capacity and pricing schedules that correlated with the capability of ERPL’s systems and processes to aggregate (and ‘mix & match’) increments of capacity into a single ‘reserve capacity profile’ covering the full period specified in the NEMMCO ITT;
 - developing a pricing schedule that matched the expectations of DSR providers and NEMMCO’s pricing format; and
 - convincing NEMMCO that ERPL’s systems and processes were able to effectively ensure that a diverse portfolio of demand response capacity could be

‘mixed & matched’ to provide a level of reliability that met NEMMCO’s specification.

ERPL undertook all of this with a relatively small team comprising 5 or 6 senior staff at the same time that the management team and Board were seeking to establish other markets for ERPL’s services and ensure the financial viability of a fledgling business.

MJA believes it is self-evident that ERPL’s effort was effective. There are two primary pieces of evidence that support this assertion. The first is that NEMMCO accepted ERPL’s tender proposal, which shows conclusively that ERPL had been able to convince NEMMCO that its systems and processes could meet NEMMCO’s specified requirements – including for reliability. The second is that, in a short period of time, ERPL was able to recruit – and sign contracts with – around 150MW of demand response capacity from a significant number of individual end users offering a diverse range of type and increment of capacity. Given the time constraints in the tender formation period (and the limited budget for MJA’s input), MJA did not commit any significant resources to examination of either aspect of ERPL’s tender.

3.1. Challenges faced by ERPL

This was very clearly seen as a major opportunity for ERPL, and was treated accordingly. However, ERPL did face formidable challenges in responding to the NEMMCO ITT. These are dealt with below. Generally, ERPL rose to these challenges and allocated their limited resources efficiently when preparing their reserve capacity tender.

3.1.1. Dealing with NEMMCO’s Reserve Agreement

As noted in section 2 above, the biggest resource commitment required by ERPL was to ‘interpret’ and ‘translate’ NEMMCO’s Reserve Agreement into something that end users were prepared to sign. This activity required allocation of resources that might otherwise have been usefully allocated to ‘marketing’ and recruitment of end users, which would have assisted in addressing another deficiency in NEMMCO tendering process – the relatively ‘low key’ promotion by NEMMCO of the tendering opportunity.

ERPL commenced discussions with NEMMCO on the nature, content and form of this agreement as soon as the tender opportunity was announced. With assistance provided by the EUAA (supported in part by the National Electricity Consumers Advocacy Panel), EUAA engaged Melbourne law firm Maddocks to review the NEMMCO agreement, advise on the efficacy of signing it and, where appropriate, suggest amendments that would improve the clarity and readability of the document. Working largely through the ERPL response to NEMMCO but instructed by the EUAA, Maddocks identified a number of errors or omissions in the document and suggested improvements in a number of areas that were incorporated into a ‘model’ DSR Provider Agreement. This activity is the subject of a short report that is posted on the National Electricity Consumers Advocacy Panel Website, along with a copy of the ‘model’ agreement.³³ In respect of NEMMCO’s Reserve Agreement, Maddocks summary report concluded:

³³ See Reports for Application 134, <http://www.advocacypanel.com.au/NewFundedReports.htm>.

- 2.14 *It is also felt that the process (of reviewing NEMMCO’s Reserve Agreement) highlighted the detail and complexity of the legal documentation, that this was an impediment to securing DSR under the Reserve Trader and that individual customers, in particular, would find it even more of an impediment.*
- 2.15 *The process also achieved certain variations and refinements that improved the Reserve Agreement and should make its future use easier.*
- 2.16 *However, the Reserve Agreement in our view remains overly complex, detailed and will prove operationally troublesome to potential providers in future. It would be helpful if NEMMCO could review this. It is also recommended that the EUAA take this matter up with NEMMCO and that the EUAA take other steps that would help improve the Reserve Trader process and the Reserve Agreement.*

Despite concerted effort by ERPL, and the work undertaken for the EUAA by Maddocks, NEMMCO accepted that it should change the Reserve Agreement document only in areas where errors and omissions had been identified; but declined to make any other changes in areas that could have improved the ‘user friendly’ nature of the document or take other steps to do so. However, NEMMCO did assist ERPL (and other potential providers) throughout the process and co-operated as far as possible within the confines of its documentation and process.

ERPL has correctly identified that the vast majority of end users who might be prepared to provide DSR capacity would not be induced to sign a document that explicitly matched the terms and conditions in the NEMMCO Reserve Agreement. Accordingly, ERPL went beyond the ‘model’ agreement developed by Maddocks and put considerable effort into ‘interpreting’ and ‘translating’ the NEMMCO document into a simpler document that effectively dealt with all of the matters covered by the NEMMCO agreement (and the Maddocks ‘model’ agreement) including:

- details identifying the DSR provider, including all the contact details required to match NEMMCO’s communications requirement specifications (1 page);³⁴
- a DSR Schedule that identified the physical characteristics of each item of DSR capacity being offered, its price rates and dispatch conditions (1 page for each item of capacity);
- terms and conditions of contract (5 pages), with 1½ pages covering ‘technical issues’ related to:
 - Appointment as a DSR service provider to ERPL;
 - Conditions governing provision of DSR;
 - Trial and inspection;
 - Payment terms;

Reserve Agreement with NEMMCO - Summary Report on Process and Outcomes Relating to Legal and Contractual Matters; and Demand Side Response (DSR) Provider Agreement (Copyright EUAA, NEMMCO and the Advocacy Panel)

³⁴ The number of pages indicated for each part of the document is approximate only and rounded to the nearest half-page.

- Method of calculating DSR (using the DSR providers NMI meter identifying identified in the DSR Schedule);
 - Provision of DSR, including responsibilities related to operation, maintenance and dispatch of DSR capacity;
 - Responsibilities of ERPL;
 - Responsibilities of the DSR Provider;
- and the remaining 3½ pages covering all the other general terms and conditions ‘normally’ included in contract.

This part of ERPL’s tender preparation was demonstrably successful because all but one of end user DSR providers who had agreed verbally to participate in the tender had signed the agreement prior to the NEMMCO tender close date. The outstanding provider signed the agreement not long after the closing date and was included in ERPL’s offering for the second month of the tender duration.

3.1.2. Communicating With (an Emerging) Market

NEMMCO has a number of ‘established channels’ for communicating ‘with the market’, all of which arise from, or have been developed by NEMMCO to comply with, obligations specified in the Rules. These obligations, and NEMMCO’s response, are primarily focussed on communication with registered Market Participants, nearly all of whom are entities in the electricity supply industry.

NEMMCO’s ‘promotion and advertising’ for the reserve capacity tender opportunity was limited, as far as MJA is aware, to:

- communication with Market Participants through it’s weekly Projected Assessment of System Adequacy reports;
- presentation and discussion in bi-monthly NEM Forum teleconferences (that are generally attended by no more than 20-30 persons in any one jurisdiction, almost all of whom represent Market Participants);
- consultation with the relevant jurisdictions;
- posting a call for tenders on the NEMMCO Website as one line item at <http://www.nemmco.com.au/powersystemops/powersystemops.htm#ReserveManagement>; and
- what amounts to informal advice to organisations like the EUAA that are in regular contact with their members and maintain channels of communication with NEMMCO.

The Rules contain no requirement for NEMMCO to communicate directly with energy users, or to advertise more widely, for example through major daily newspapers in each (relevant capital city) or to take a more proactive role. Nor do the Rules prevent such actions. NEMMCO takes no proactive initiative in this regard, presumably because it takes the view that such initiatives could be interpreted as ‘preferential treatment’ or ‘interference in the market’, which could raise the ire of some Market Participants.

Established media outlets reported that NEMMCO was forecasting a shortfall in reserve capacity, but these reports (quite reasonably) focussed little or no attention on opportunities

for end-users to provide reserve capacity. A similar, largely passive, response occurred in the jurisdictions. Affected jurisdictions knew that a reserve capacity shortfall was being forecast, but they took no proactive action to engage the interest of end-users, who are the only practicable source of reserve capacity.

The EUAA did take an active role in promoting the opportunity to its members (and some others), but its resources are limited, it has no influence on how its members' representatives communicate within their own organisations and it has no specific charter to promote opportunities to organisations that are not members. While it is clear that some (possibly many) EUAA members actively considered the opportunity to participate, others reported surprise that their energy bills later included an unexpected addition to cover 'their share' of reserve capacity contracting cost. This indicates that some EUAA members do not fully understand the mechanisms for cost recovery of the reserve trader provisions, or were not fully aware these provisions had been invoked by NEMMCO.

This left ERPL with the task of adding provision of reserve capacity to its stable of products and services; and 'selling' the opportunity to its existing and prospective customers – again within its relatively limited capability as a new business entity. The difficulty for ERPL was that a considerable amount of effort was required to recruit each DSR provider, and considerable resources needed to be committed to assist each potential provider to:

- understand the nature of the opportunity being presented;
- identify increments of reserve capacity that could be offered;
- develop costings for providing the service;
- convince the provider's organisation that provision of reserve capacity was both feasible and potentially rewarding; and
- get to the point where they were prepared to commit to the tender process.

This was a considerable challenge for a new business entity; a challenge that may have been made much easier if NEMMCO and the jurisdictions had been actively involved in promoting the opportunity to end users, or if an industry body such as the EUAA were better supported in its efforts to communicate with members and other users, and educate them about the provision of reserve capacity and DSR more generally.³⁵

MJA is aware that individual jurisdictions and the MCE itself have known about the lack of DSR in the NEM and the need to facilitate DSR for a number of years. But the jurisdictions and the MCE have taken very few steps to assist in developing this capacity.³⁶ If more had been done, it could have greatly assisted the NEMMCO tender for reserve capacity or even limited the need to tender for 500 MW. Such facilitation would have ensured that end users were more aware of DSR and more experienced with its use, making it a more natural part of the market. Failure to promote this opportunity more widely almost certainly increased the need for NEMMCO to contract for reserves and increased the costs of the contracts.

³⁵ The EUAA has committed substantial resources to promoting development of DSR capacity in the NEM. Prominent examples are the execution of a multi-jurisdictional DSR Trial and publication of specific Case studies. The documents presenting the results of these activities include comprehensive recommendations to improve the opportunities for DSR. Comprehensive reports on both activities were provided to all jurisdictions and key outcomes actively advocated by the EUAA. While indicating clear endorsement for the EUAA's actions and general endorsement of the recommendations, no jurisdiction has acted upon them. The EUAA has also recently completed an *End User Action Plan for Demand Management* the release of which is expected soon.

³⁶ See Footnote 35.

Unfortunately, there has been no further action by the individual jurisdictions or the MCE since the NEMMCO contracts ended. As far as MJA is aware, nor has there been an official assessment of the NEMMCO process other than the assessment contained in this report.

4. Conclusions and Recommendations

This report presents the outcomes of MJA's observation of ERPL's successful attempt to participate in the NEMMCO reserve capacity tender process that was undertaken prior to the 2006 summer. In a period of just over 2 months, ERPL managed to recruit up to 150MW of DSR capacity, aggregate that capacity to form 125MW of reliable and dispatchable reserve capacity and prepare, and submit a tender in a relatively 'opaque' process defined by NEMMCO's relatively complex tender documents.

MJA believes it is self-evident that ERPL's effort was effective. There are two primary pieces of evidence that support this assertion. The first is that NEMMCO accepted ERPL's tender proposal, which shows conclusively that ERPL had been able to convince NEMMCO that its systems and processes could meet NEMMCO's specified requirements – including for reliability. The second is that, in a short period of time, ERPL was able to recruit – and sign contracts with – around 150MW of demand response capacity from a significant number of individual end users offering a diverse range of type and increment of capacity. Given the time constraints in the tender formation period (and the limited budget for MJA's input), MJA did not commit any significant resources to examination of either aspect of ERPL's tender.

However, despite ERPL's success, NEMMCO managed to procure only 375MW in reserve capacity compared to a forecast shortfall of at least 500MW. This shows both the benefits of access to a DSR aggregation facility and the problems associated with Reserve Trader, NEMMCO's complex handling of the matter and the inefficiencies in communicating with potential DSR providers.

ERPL willingly shared information with MJA during execution of this assignment but MJA agreed to respect intellectual property rights embedded in ERPL's systems, processes and marketing methods. Accordingly, the report contains little information on these aspects of ERPL's response to NEMMCO's tender. It is MJA's view that this does not compromise the value of this report.

It is MJA's view that greater value would come from addressing deficiencies in NEMMCO's processes, virtually all have their origins in the Rules and Reliability Panel Guidelines, than disclosing ERPL's intellectual property. Accordingly, the report focuses particularly on deficiencies or difficulties in the NEMMCO tender process, attempts to identify the root causes of these difficulties and provides recommendations for addressing these.

4.1. Main Conclusions

In essence, the primary deficiencies in the NEMMCO process reflect a lack of focus in the Rules, and in the Reliability Panel guidelines that govern NEMMCO's procurement of reserve capacity, on the potential for end users to provide effective and timely DSR that could be activated to provide reserve capacity. These deficiencies are possibly aggravated by the legalistic approach that NEMMCO has used to develop its tender documents, inefficiencies in its communications with the DSR 'market' and the 'risk averse' way that NEMMCO interprets its role. The deficiencies are manifested through:

- Provisions governing NEMMCO's role in forecasting and procurement of the reserve capacity requirement that derive from relatively complex cross-referenced obligations and requirements specified in the NEL, the Rules and the guidelines prepared by the NEM Reliability Panel. This makes it virtually impossible for end users to develop a sound understanding of these provisions.
- NEMMCO relied on relevant provisions from these sources to form the relatively complex and legalistic reserve capacity tender documents to which ERPL responded.
- Despite criticisms of the 2004-05 tender process by the EUAA and others, NEMMCO made little effort to address these criticisms or improve the 'user-friendliness' of the tender documentation.
- Neither NEMMCO, nor the jurisdictions, showed much initiative in informing end-users of the opportunities available through the reserve capacity tender process. Both the EUAA and ERPL made considerable effort to do this, but both are constrained by limited resources.
- The NEM 'market' for reserve capacity is almost completely 'opaque', primarily because there is no regular requirement for NEMMCO to contract for reserve capacity. NEMMCO made no attempt to address this deficiency in its tender documents. This meant that prospective reserve capacity providers had no rational basis for deciding whether or not the effort involved in forming a tender offer was likely to be worthwhile. Indeed, a notable feature of the tender documentation is that it contains no detailed information to assist tenderers understand how NEMMCO's view of pricing levels might be established. Neither NEMMCO's ITT nor the draft Reserve Agreement provide any information about assumptions or methodology used by NEMMCO to assess benefits derived from a reserve contract; nor any information on the views that participating jurisdictions provided on the value of contracting for reserve.
- The 'opacity' this creates is a significant factor that inhibits end-user participation in the reserve capacity tender process. It caused considerable difficulty for ERPL and required substantial intellectual and organisational effort to be dedicated to derivation of tender prices without ERPL having any clear idea of whether or not the prices it proposed were likely to be 'competitive' or not.
- A critical part of this problem stems from the fact that NEMMCO is required to consult with relevant jurisdictions, including a requirement established by the Reliability Panel's September 2005 guidelines to take into account the views those jurisdictions have on the value of contracting for reserve. However, there is no requirement for NEMMCO or the jurisdictions to disclose the matters that are subject to consultation, the details or timing of the consultation process or any outcomes arising from that consultation.
- In addition, the combined requirements specified in the Rules and the Reliability Panel Guidelines, while not unreasonable in themselves (for an energy only wholesale market design), effectively exclude Market Participants from the reserve capacity tender process and impose obligations on end-users and third party aggregators that act as a disincentive to participate in the tender process. However, NEMMCO's tender documents take no account of this. Given that end users are very likely to be the major, possibly only, source of reserve capacity, it would be highly desirable for NEMMCO to develop a set of tender documents that clearly focus on making it as easy as possible for individual end-users and third party aggregators to participate successfully in the tender process.

- There is no doubt that the complexity of the NEMMCO documents acts as an effective 'barrier to entry' to many end users who might otherwise be enticed to offer DSR capacity. ERPL's role as an independent DSR aggregator play a part in addressing some of this complexity and made it easier for individual end users to participate. However, ERPL had no choice but to commit substantial resources to reviewing and understanding the implications of these documents. In fact, ERPL put more time, resources and energy into 'interpreting' NEMMCO's draft Reserve Agreement and 'translating' it into a far simpler DSR provider agreement than any other aspect of the tender process. ERPL demonstrated that this was a necessary and beneficial part of the process – and it lead to far more ready acceptance by end users.
- MJA accepts that it is appropriate for NEMMCO to consult with the jurisdictions on some aspects of the reserve capacity contracting process, particularly the timing, duration and magnitude of the forecast shortfall. However, there is nothing in the Rules that defines the consultation process, the matters for consultation or how the outcomes from that consultation should be treated and communicated to the market and broader range of interests.
- It is MJA's view that few large energy users – the ones most likely to offer DSR reserve capacity – would accept the assertion in Frontier Economics' September 2005 report to the Reliability Panel that *'jurisdictions are best placed to provide information on the maximum price that should be paid for reserves'* – particularly if that information is provided without being subject to transparent disclosure.
- Overall, there is no clarity at all about the role of the jurisdictions in the reserve capacity tender process – and this makes it difficult for anyone outside NEMMCO (or the jurisdictions) to form any views on the likely value of reserve capacity. It also adds to the opacity created by lack of information on the potential 'competitive market' price of reserve capacity, and the lack of information on the approaches and methodologies that NEMMCO might apply in assessing the 'likely cost' and 'likely value' of reserve capacity.

4.2. Recommendations

By addressing the key deficiencies identified in this report, NEMMCO and the jurisdictions could assist in 'enticing' greater end user interest and involvement in provision of reserve capacity. Accordingly, MJA recommends that the following actions be implemented to improve the reserve capacity procurement process:

1. The EUAA should encourage NEMMCO and the jurisdictions to engage in effective consultation with end users with a view to developing tender and contract documents that meet NEMMCO's legitimate legal requirements in a manner that is as 'user-friendly' as possible.
 - a. A start to this process should be the adoption by NEMMCO of recommendations made by Maddocks in their report on the draft Reserve Agreement to the EUAA. The goal should be to develop a simple, plain English agreement that adequately addresses NEMMCO's obligations without discouraging end-user engagement in the reserve capacity tender process.

- b. Otherwise, the EUAA should develop its own plain English agreement and seek funding from the Advocacy Panel or some other relevant source to assist with this.
2. The EUAA should lobby the Reliability Panel, NEMMCO and the AEMC to closely examine the provisions of the Western Australia electricity market rules (WAEM Rules) with a view to incorporating as many of the features as possible of WAEM Rules into the NEM reserve capacity procurement process.
3. The Rules be amended to explicitly specify the matters that NEMMCO may include in consultation with the jurisdictions and the timing of those consultations; and preferably limits these matters to the timing, duration and magnitude of forecast reserve shortfalls.
4. The rules be amended to require NEMMCO to publicly disclose full details of consultations with the jurisdictions, including any views the jurisdictions express related to the value of reserve capacity.
5. The Rules be amended to require NEMMCO to include in its tender documents comprehensive details of the assumptions, methodology, approach and sources of information that it will use to establish its views on 'likely cost' and likely value' of reserve capacity.
6. The Rules be amended to require NEMMCO to advertise in leading daily newspapers in each jurisdiction where reserve capacity is required calling for tenders for reserve capacity.
7. NEMMCO be required to engage more closely with end users and bodies such as the EUAA about its reserve capacity processes and seek to make better use of communications with them to help secure reserve capacity when needed. NEM jurisdictions should support these efforts as necessary.
8. In any case, the EUAA should seek to develop its capacity to support its members and other users in providing DSR, including reserve capacity, and develop processes for doing so (eg communications, capacity building, 'how to' material) and seek funding from the Advocacy Panel or other relevant source to do so.
9. The EUAA should proactively seek to amend the Rules, as outlined above, if necessary.
10. More generally, the EUAA should continue its efforts to develop DSR as a 'natural' part of the NEM and as both the source of greater reserve capacity and to limit the need for use of the interventionist Reserve Trader process.