NEMMCO
National Electricity Market
Management Company Ltd

ABN 94 072 010 327
Sydney Office

28 September 2007

Mr Ian Woodward
Chairman
AEMC Reliability Panel
PO Box H166
Australia Square NSW 1215

By email: submissions@aemc.gov.au

Dear Mr Woodward

Submission on Comprehensive Reliability Review – Interim Report

Thank you for the opportunity to lodge the attached submission regarding the Reliability Panel's Second Interim Report (Report) in relation to the Comprehensive Reliability Review.

NEMMCO has reviewed the Report, and has proposed a number of areas for further consideration in the attachment to this letter. Given the detailed nature of the exposure draft material which includes draft Rules and Guidelines, some of NEMMCO's comments are detailed in nature. The main matters raised in this submission are:

- **Energy Adequacy Assessment Projection (EAAP):** A number of clarifications are suggested to facilitate the development of a clear but flexible framework within which the EAAP can operate, should the Panel decide to progress it.
- **Reliability and Emergency Reserve Management (RERM):** A small number of design and procedural matters are raised to ensure the proposed mechanism resides within a clearly defined framework.
- **Demand Forecasting:** Some timing changes are proposed to facilitate more useful and practical reporting on long term demand forecast accuracy.

A number of other more detailed and drafting points are also made in the attached submission.

NEMMCO would be pleased if you would have these matters considered by the Panel as part of its further deliberations. For further details, please to not hesitate to contact in the first instance Murray Chapman on 02 9239 9106.

Yours Sincerely

Brian Spalding

Brian Spalding
Chief Operating Officer

Mansfield Office
PO Box 2516
Mansfield QLD 4122
Tel: (07) 3347 3100
Fax: (07) 3347 3200

Melbourne Office
Level 12
15 William Street
Melbourne VIC 3000
Tel: (03) 9648 8777
Fax: (03) 9648 8778

Norwest Office
PO Box 7326
Baulkham Hills BC NSW 2153
Tel: (02) 8884 5000
Fax: (02) 8884 5500

Sydney Office
Level 22, Norwich House
6-10 O'Connell Street
Sydney NSW 2000
Tel: (02) 9239 9199
Fax: (02) 9233 1965

NEMMCO

SUBMISSION

1. Energy Adequacy Assessment Projection (EAAP)

NEMMCO understands the EAAP mechanism to be broadly consistent with the Drought Impact Reports that were published by NEMMCO in April and August 2007, and the following comments are provided in that context.

The Reliability Panel's (Panel's) exposure draft sets out a potential National Electricity Rules (Rules) based framework to formalise the production of future energy adequacy reports, including obligations for the provision of input data to NEMMCO, and the specification of output scenarios by the Panel.

NEMMCO broadly supports the framework that is proposed, but offers the following suggestions for refinement with a view to ensuring the process is both practical and flexible:

- Generator Energy Model (GEM) – NEMMCO believes that it is intended for the GEM to be a framework that represents the energy limitations under which a group of generators is operating. Often, energy constraints would apply at the portfolio level, whereby a single GEM would be adequate to represent the energy limitations relating to a number of generating units. The exposure draft on the other hand may give the impression that a GEM would apply by default at the generating unit level. It is suggested that this matter be clarified, perhaps through the use of a principle in the Rules that requires a single GEM to apply to as many related generators as is practical while maintaining a level of accuracy consistent with the nature of the study. There may also be merit in emphasising that the GEM is to be specified by the Generator, who can determine the level of complexity required to adequately represent their energy constraints in the EAAP, subject to meeting NEMMCO's base needs.
    - Based on experience in preparation of recent drought impact reports, NEMMCO believes that inputs to the GEM need to include information such as maximum annual energy; minimum and maximum monthly energies; dependencies between months; pumping strategies for energy storage; and other inputs relevant to a generator's circumstances. Flexibility in the specification of these inputs will most likely be needed as the type of energy constraints varies through time. The need for this range of inputs is recognised in the Panel's draft report (see p43), but obligations for its provision do not appear to have been incorporated into the Rules. NEMMCO believes that a clear (and potentially flexible) mechanism needs to be provided through the Rules to ensure that these inputs are made available to the process.
    - Also in relation to the GEM, it may be helpful from the perspective of clarity if the principles in draft clause 3.7B(i) made reference to pumped storage plant, which should be included in the GEM process.
- The exposure draft states that the EAAP must be published at least quarterly, but could be published more often if NEMMCO decides there has been a material change in input data or assumptions (see p 69). However the draft also states that generators will only be required to provide information to NEMMCO on a quarterly basis (see p 72). If these principles were to flow through to the Rules or the associated EAAP Guidelines, there would be an expectation that NEMMCO could publish more often than quarterly, but there would be no mechanism by which NEMMCO would be able to acquire a full set of updated input information to revise the EAAP study. In recognising that it may be beneficial to update the EAAP more often than quarterly on occasion, the Panel may wish to provide NEMMCO with a means of acquiring updated input data where necessary to support the additional publication instances.

- Clause 3.7B(p)(3) of the exposure draft lists "failure or outage of a major gas pipeline" as a possible EAAP scenario. This may not be an ideal example to include in the Rules, as although it would have a major short term impact on plant capacities, energy usage options may be very limited, so that the implications of the outage may already be largely covered by MT PASA. It may therefore be better to delete the gas pipeline example, to avoid confusion about the purpose of the EAAP.
- Implementation of the EAAP will need to be preceded by consultation on the EAAP Guidelines (by the Panel), and consultation on the GEM Guidelines (by NEMMCO). Some systems implications may then be subject to the outcomes of those consultations. Timing obligations in the Rule will need to make provision for this full set of implementation phases.
- The exposure draft Rule would require that the EAAP be published by the first business day of the month, every 3 months (see clause 3.7B(b), p89). It is suggested that the timing of this obligation be made more flexible, perhaps by specifying the periodicity of the obligation to be quarterly in the Rules, and requiring that the timing be determined through consultation and placed in the timetable which is managed under clause 3.4.3 of the Rules. Such an approach would allow the industry and NEMMCO to manage cyclic workloads, and appropriately co-ordinate the timing of EAAP publication with other market processes including other routine publications and the provision of EAAP inputs. A number of other processes are handled in this way, including the lodgement of bids, the publication of predispatch and PASA, and provision of inputs to the EAAP.
- Based on experience gained through preparation of recent drought impact studies, there may be potential for EAAP outputs to include estimated generating plant capacity factors. This information may be of particular interest to generators, including those that are not energy constrained. Aggregated capacity factor results could be published (as was the case in recent drought studies), and if provided for under the Rules individual capacity factors could be provided to Generators on a confidential basis (akin to the provision of predispatch information to generators under the current rules).
- The exposure draft contains a definition of 'unserved energy' (USE) - a term that is commonly used, particularly in relation to the Reliability Standard of 0.002%, but which has not been formally defined. While NEMMCO acknowledges that a clear definition of USE is a sound goal, the proposed definition may warrant further consideration by the Panel for the following reasons:
    - It refers to the "bulk transmission system". This is appropriately consistent with the current reliability standard, which refers to "bulk transmission capacity", but the lack of precision around the term 'bulk' leaves considerable uncertainty as to the meaning of USE. The extent to which network limitations should be taken into account in both application of the standard and the measurement of USE therefore remains open to interpretation.
    - The Chapter 10 Rules definition of unserved energy appears to be linked to the Reliability Standard set by the Panel. Since the Reliability Standard and the Chapter 10 Rule are managed by different decision makers however (The Panel in one case and the AEMC in the other) issues of co-ordination could arise in the future.

  To assist the Panel should it consider this matter further, the following explanation is provided as to how NEMMCO currently interprets "unserved energy" in its processes for determining Minimum Reserve Levels (MRLs):
    - NEMMCO determines the required regional MRLs by assessing the amount of generation required across the NEM to deliver an expected average annual USE consistent with the Reliability Standard. The USE is calculated taking into account the capability of the transmission system to transport power from generators to regional reference nodes (defined by system normal network constraint equations). It measures

the amount of demand (represented at the regional reference node) which is not supplied due to:

- Insufficient generation (excluding IR events and events outside the control of the generator);
- Insufficient system normal transmission capability; or
- Transmission failures impacting interconnectors (excluding non-credible events and natural disasters).

If a definition along these lines was to be used in the Rules however, it would arguably exclude demand not supplied to parts of the network that are more remote from the regional reference node, such as far north Queensland.

- 10 Year Forecasts – the exposure draft proposes that two additional obligations should be placed in the Rules to augment the 10 year forecast information published by NEMMCO as part of the SOO. The new obligations would require NEMMCO to publish information on the:
  - Energy constraints associated with generation; and
  - Projections of reliability of supply.

  NEMMCO does not have concerns with these obligations being formalised in the Rules in this form, and is of the view that the current market simulations used for the ANTS process already broadly satisfy the requirements. The modelling approach covers in excess of 10 years, and the approach and assumptions are consulted on annually, making the process a transparent one. Long term average hydro inflows are used in the modelling due to the timeframe that is covered. The process yields regional unserved energy values, which are currently published in the appendices to the ANTS. It is important to note however, that causation of the unserved energy cannot be assigned to a particular input such as energy limitations, as the outputs are a result of all the inputs and assumptions that are used. If these new obligations were formalised, NEMMCO does not consider that major changes to the current process would be required, although the presentation of the unserved energy results may need to be revised to link them more explicitly to the obligations.

2. Reliability and Emergency Reserve Mechanism (RERM)

NEMMCO views the assessment of whether or not a reliability safety mechanism is necessary, and the general form that any proposed mechanism should take, as policy matters for the Panel to consider. NEMMCO's comments therefore relate primarily to the practicality of the proposed RERM mechanism, and the role NEMMCO would be required to fulfil if it proceeds.

- Page 77 of Appendix C refers to a "rolling tender" process for the contracting of reserves, however the draft Rule does not appear to refer to the tender process in those terms. It is noted that clause 3.20.4(e) allows NEMMCO to enter into additional contracts on a progressive basis, but no mention seems to be made of what constitutes the full "rolling tender" process. NEMMCO wishes to ensure that its powers and obligations in respect of the tender process are clearly defined and makes the following comments and suggestions to that end:
  - Clause 3.20.4(d) prevents NEMMCO from entering into, or renegotiating RERM contracts more than nine months prior to the need for the reserves. It is not clear from this clause however, whether NEMMCO would be permitted to carry out a RERM tender process prior to the nine month period. If the intention is to restrict contracting, but not to restrict the tendering process, a clear distinction in the Rule would be desirable;
  - If the rolling tender process referred to in page 77 of the policy material is intended to allow NEMMCO to run more than one tender, it may be beneficial to clarify this in the Rule. Irrespective of whether multiple tenders are carried out, NEMMCO believes it is

important for its process to seek tenders whose terms are flexible enough to be accepted by NEMMCO at a later date without the need to run another tender. Thus, if the need for reserve contracts increased after a tender had been carried out, subject to commercial and value for money considerations, should NEMMCO accept an offer that had been previously passed over? The Panel should consider the range of potential scenarios under which the RERM and the "rolling tender" concept might be used, and if the Panel considers any particular action by NEMMCO to be more appropriate the Rule (or the RERM Guidelines) should be drafted to make that clear.

- In the event that a reserve shortfall emerges at relatively short notice – say one month – there would not be sufficient time for NEMMCO to carry out a tender process for reserve contracts (note that the Guidelines currently in force would prevent NEMMCO from seeking tenders within two months of a projected supply shortfall). In such cases however, would it be appropriate for NEMMCO to negotiate directly with tenderers from an earlier tender process? The Rules (or RERM Guidelines) should be clear as to NEMMCO's powers in this situation. If NEMMCO is permitted to negotiate directly with earlier tenderers (subject to the commercial conditions of that tender process) an acceptable contract may be struck within the short time available. If such direct negotiations are not allowed (as is the case with the current Guidelines), circumstances may lead to involuntary load shedding when a non-scheduled reserve contract could have been entered into. This is because the alternative option of direction applies only to scheduled plant or market generating units under clause 4.8.9(a1)(1) of the Rules, whereas a non-scheduled reserve contract can be used to engage other demand side resources.

- The exposure draft indicates that the RERM will operate on a regional basis, but there is little explanation of how this expectation is to apply in practice. It may be useful in this regard to consider specifying how the "regional" requirement should apply to two particular aspects of the RERM mechanism as follows:
  - **Triggering the RERM**: It is quite possible that a capacity shortage could extend across a number or regions, and that reliability supplies contracted in one region could support other regions. Therefore, in specifying that the RERM mechanism is regional, it is suggested that sufficient explanation or clarification be included to ensure that the mechanism should not preclude the procurement of reserves across interconnectors where it is economic to do so; and
  - **Recovery of RERM Costs**: A related issue is that the RERM funding mechanism would need to ensure that the appropriate parties pay for reserves, no matter where they are sourced. The exposure draft allows for regional funding contributions to be determined through discussion with the relevant jurisdictions (clause 3.20.4(f)), but no guidelines or principles are provided in respect of the outcomes. Minimum Reserve Level (MRL) thresholds determined by NEMMCO to trigger the RERM mechanism may not be a suitable basis for allocation of costs between regions in all cases. One option that the Panel may wish to consider is to adapt the 'Regional Benefit' concept that is used to allocate the cost of directions between regions (clause 3.15 8 of the current Rules).

- The draft RERM Guidelines state that in determining whether to commence contract negotiations, NEMMCO should take into account the outcome of the EAAP as well as the outcomes of the Medium Term PASA. This would appear to give EAAP and MT PASA a form of equal standing in the trigger process, whereas NEMMCO has understood to date that intervention should be triggered only on the basis of a projected capacity shortage. NEMMCO does not believe that the RERM should have potential to be triggered by the EAAP alone. To avoid confusion and possible unintended outcomes, it is suggested that these trigger criteria be stated more precisely, and if multiple inputs are to be considered then the dominant input should preferably be identified.

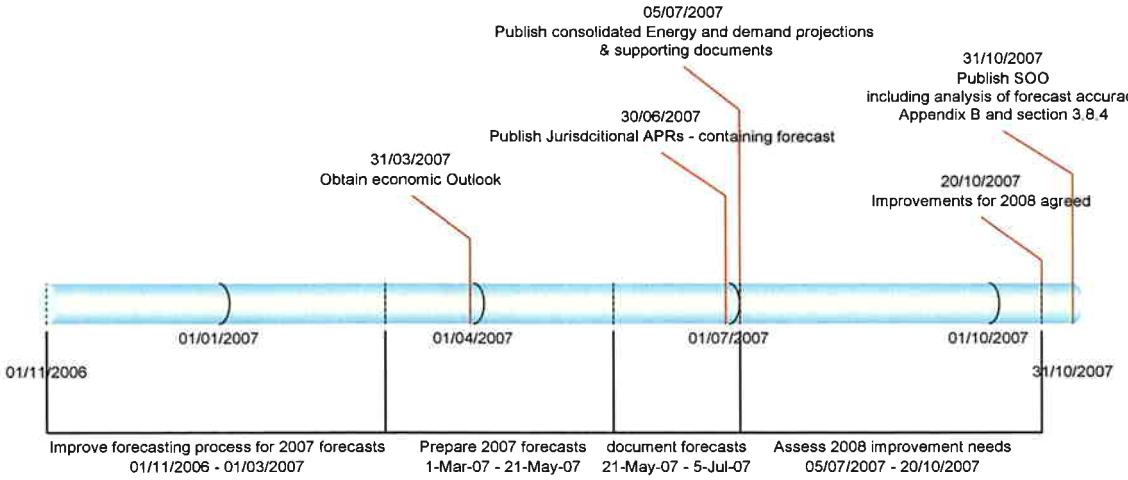
- The draft RERM Guidelines set out a series of factors that NEMMCO should take into account in assessing the cost effectiveness of exercising the RERM. The value of unserved energy (as distinct from VoLL) is not listed as a consideration, but should be included on the basis that it may not be economic to pay more than such price for reserve.
- In view of the potential for reserve providers to be paid a higher price than VoLL for their services, particularly in the case of demand side providers, care will be required in the design of the RERM to ensure that it does not become 'self sustaining'. The risk is that while the RERM is in place providers may tend to 'hold out' to be engaged by the RERM because it can pay more than market mechanisms allowing a history of need to be recorded. This could influence any future decisions on extension or retirement of the mechanism.
- An alternative funding arrangement for the recovery of RERM costs is set out on pages 79 and 101 of the exposure draft. There are a number of practical issues that should be recognised and may need to be resolved before this could be considered a fully developed option:
    - The Rules would need to be clear as to how NEMMCO is to manage situations where the funds available in respect of a particular region are insufficient to cover the RERM costs for that region. Options might include recovery from the market in a similar manner to current arrangements, 'borrowing' from the funds for other regions, or the use of a debt facility. It is not currently clear what options have been considered and what approach is proposed for use in the alternative funding arrangement;
    - The alternative funding arrangement proposes a fund of equal size in respect of each market region. The rationale for equal sized funds is not clear, and may warrant further consideration in light of the different levels of demand and historical risk in different regions.
    - The alternative funding arrangement would result in a considerable amount of money remaining dormant for a potentially significant period of time, giving rise to efficiency considerations. Furthermore, the parties that benefit from the fund may not be the ones that contribute to it, giving rise to distributional issues. These matters should be considered before progressing the alternative funding arrangement further.
    - If the regional RERM funds were to be 'primed' at a rate of $1M per year, then they would not reach their $5M capacity by the time the RERM is scheduled to expire in 2012;

3. Accuracy of Demand Forecasts

NEMMCO supports the need for continued improvement of demand forecasting techniques and has been active in co-ordinating efforts of the jurisdictional planning bodies to deliver continual improvements in demand forecasting. This work has lead to improvements in the forecasting techniques, the level of disclosure of information regarding how the forecasts are produced and the techniques used to assess the forecasts and identify further opportunities for improvement. The proposed obligation for NEMMCO to report to the Panel on the accuracy of previous forecasts and on planned improvement activities is consistent with the approach currently integrated into the production of the annual Statement of Opportunities (SOO).

The diagram below illustrates the annual process adopted to produce the demand and energy projections for the SOO, investigate potential areas of improvement and agree on those improvements for the following year.

NEMMCO



It appears that the proposed requirement in the exposure draft Rule 3.13.3(t)(2) is inconsistent with that given in the Executive Summary and on page 52 of the Panel's Second Interim Report. The Second Interim Report (page 52, section 6.1.1) requires NEMMCO to report on:

- "Any improvements that have been incorporated into the process used to prepare the SOO forecasts";

while the Executive Summary requires reporting of:

- "the improvements in the forecasting process that will be used to prepare the subsequent SOO", and

the proposed Rule 3.13.3(t)(2) requires reporting of:

- "any improvements made by NEMMCO or other relevant parties to the forecasting process by the reporting date that will be applied to the next SOO" (emphasis added in each case).

Assuming the recommendation in the Executive Summary best represents the Panel's intended outcome, NEMMCO has the following concerns:

- The reporting date of 1 September expressed in the draft Rule does not fit well with the demand forecasting process which is illustrated above. Improvements that will be implemented in the following year are not locked in at this time. Delaying this report to 1 November would remove this inconsistency and allow sufficient time for NEMMCO and JPBs to assess improvement needs before reporting to the Panel; and
- While there is an obligation on NEMMCO to report to the Panel no supporting obligation has been placed on the Jurisdictional Planning Bodies to provide the information NEMMCO requires to produce this report. This could be addressed by expanding Rule 5.6.2A to require JPBs to assist NEMMCO in preparing the report mentioned in Clause 3.13.3(u) and to include the necessary information to facilitate the assessment of the forecasts, in the APRs.

Therefore, assuming the recommendation in the Executive Summary best represents the Panel's intentions, NEMMCO suggests:

- The reporting date be changed to 1 November to co-ordinate with completion of the forecast improvement process; and
- A supporting obligation be placed in the Rules for JPBs to provide the information NEMMCO requires to produce the report.

The combination of information published in Section 3.8.4 and Appendix B of the 2007 SOO illustrates the information available regarding the accuracy of the SOO forecasts and improvements made by NEMMCO or other relevant parties to the forecasting process that have been applied to the 2007 SOO. NEMMCO expects that this level of information would be sufficient to report on the accuracy of the forecasts and any improvements made by NEMMCO or other relevant parties to the forecasting process that will apply to the next statement of opportunities which as envisaged by the proposed rule change. A copy of these sections of the 2007 SOO is provided as a confidential attachment to this submission to assist the Panel in understanding the extent of information available. NEMMCO requires that the Panel treat the extract from the 2007 SOO as confidential information until the SOO is published by NEMMCO on 31 October 2007.

4. Drafting Issues in Relation to Intervention Settlements

The approach taken by the Panel to drafting the exposure draft Rule is such that it affects a large number of clauses in the Rules. In some cases clauses are moved or renumbered without changing their content, while in other cases changes are made such as introduction of the new term "intervention event". As a result of the extent of changes proposed, NEMMCO has reviewed the affected clauses and has identified the following drafting issues for consideration by the Panel. Some of these issues are potentially introduced by the changes, but others are issues in the current version of the Rules:

- Clause 3.12.2(a)(2) in the exposure draft is confined to 'directions' while the majority of 3.12.2(a) now relates to the broader notion of an 'intervention event' having previously related to 'directions and plant under a reserve contract'. This appears to make the clause internally inconsistent. The issue exists under the current Rule drafting, but is perpetuated by the new drafting. To resolve this inconsistency, it is suggested that 'direction' be replaced by 'intervention event'.
- Clause 3.15.7B(c)(1) of the existing Rules appears to duplicate clause 3.12.2(l)(1) of the exposure draft (clause 3.12.11(f) of the existing Rules). On that basis, clause 3.15.7B(c)(1) may be redundant. This duplication is apparent in the current Rules.
- Clause 3.15.9 of the existing Rules provides a means for NEMMCO to recover moneys payable under reserve contracts, but does not provide any means to recover moneys payable to affected participants. This appears to have been an oversight in the existing Rules, which could become problematic if reserve contracts are dispatched. Therefore, subject to verification of this deficiency, NEMMCO will consider lodging a Rule change proposal with the AEMC to address this issue.