

## **Appendix C: Exposure Draft: Managing Generation Energy Constraints and Replacement of the Reserve Trader**

This Exposure Draft is issued in conjunction with the second interim report of the Comprehensive Reliability Review and is designed to form the basis of a future Rule change proposal that will be submitted to the Australian Energy Market Commission (AEMC) by the Reliability Panel (the Panel).

This Exposure Draft is a product of the recommendations made in the second interim report. Whilst the National Electricity Rules (Rules) require the Panel to recommend whether the existing provisions in relation to the reliability safety net should be removed from the Rules prior to 1 July 2008, it does not expressly require the Panel to consider alternative arrangements to the reliability safety net as contemplated by this exposure draft.

However, clause 8.8.3(l) of the Rules allows the Panel to make recommendations in a review or determination on changes to the Rules that relate to the reliability of the power system. More generally, clause 8.8.1(a)(5) of the Rules which provides for the purpose of the Panel includes that the Panel may make recommendations on market changes to the Rules and any other matters which the Panel considers necessary.

It is on the basis of the above clauses that the Panel intends to put forward this Exposure Draft with modifications addressing issues raised in consultation to the AEMC as a Rule change proposal.

This Exposure Draft can be divided into three main components:

1. the introduction of the “energy adequacy assessment projection” to be known as the “EAAP” which is designed to provide information on energy constraints;
2. the introduction of the reliability and emergency reserve mechanism to be known as the “RERM” which will replace the reliability safety net but address the same matters with some enhancements and modifications including an expiry date; and
3. clarifying that NEMMCO powers in relation to reliability directions are not expiring with either the reliability safety net or the RERM.

This Exposure Draft is made up of three documents:

1. a summary of the matters that have guided the proposed changes to the Rules (Overview Description);
2. an Exposure Draft Rule which sets out the proposed changes to the Rules (Exposure Draft Rule); and
3. Exposure Draft guidelines for the exercise of the RERM (Exposure Draft Guidelines).

Comments are sought from interested parties on all aspects of the exposure draft including alternatives to any matters proposed in the exposure draft.

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## C.1 Overview Description

### C.1.1 Purpose

To assist stakeholders with providing feedback, the purpose of this section is to summarise the matters and recommendations raised in the Panel's Second Interim Report and demonstrated in the Exposure Draft Rule, and includes:

- the EAAP (a two year projection of energy adequacy),
- the Ten Year Projection of Energy Adequacy;
- the RERM; and
- Reliability Directions.

### C.1.2 Energy Adequacy Assessment Projection (EAAP)

#### Overview of the EAAP

The two year outlook of the impact of generation energy input constraints on reliability has been designated as the Energy Adequacy Assessment Projection, known as the EAAP.

The EAAP is a probabilistic assessment of the projected energy availability in the presence of generator energy constraints, as measured by the regional projected unserved energy (USE). The EAAP:

- covers the next 24 months from the commencement of the next quarter;
- is published at least quarterly (that is every quarter but more often if NEMMCO considers that a material change in the input data or assumptions has occurred); and
- provides the projected USE for each region using a resolution of monthly.

#### How the EAAP relates to MT-PASA

The EAAP is similar to the existing MT-PASA in that:

- it is a form of projection of the adequacy of the power system over the next two years;
- it takes offers from the generators and other anticipated power system conditions and provides aggregated information on the power system adequacy to participants (and other stakeholders);

- it carries out a security constrained assessment of the power system reliability; and
- it is intended to prompt a response from the market based on the published aggregated information.

However, in other respects EAAP is quite different to the other forms of PASA, including:

- the EAAP is a probabilistic assessment of adequacy while the PASA are deterministic in nature; and
- the EAAP requires a greater detail of generator modelling information potentially including Forced Outage Rates and a description of the energy constraints (see the GEM below).

The EAAP is primarily concerned with reliability of supply over the period of interest. In contrast, Clause 3.7.1(b) of the Rules states that PASA is "...disclosure of medium term and short term power system security prospects ...". In practice, however, there is no real distinction between "reliability" for the EAAP and "security" for PASA. The MT PASA and ST PASA considers the projected system conditions to determine whether there is sufficient reserve to meet the projected regional demand while keeping the power system secure. Where an insecure state is projected this is in effect signalling, in the absence of any other corrective actions, load shedding is required which effectively makes it a reliability issue.

On balance the EAAP has been separated from the other forms of PASA into clause 3.7B. Also, naming it the EAAP, rather than say energy PASA, also enforces this distinction and reduces the potential for confusion.

### **EAAP input requirements**

For NEMMCO to perform the studies specified for the EAAP it will require a range of data similar to that it currently uses for the Monte Carlo simulations in the Annual National Transmission Statement (ANTS)<sup>45</sup> and the Minimum Reserve Level calculations<sup>46</sup>. This data is significantly more detailed than the data required for MT-PASA.

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<sup>45</sup> NEMMCO prepares the ANTS in accordance with clause 5.6.5 of the Rules.

<sup>46</sup> NEMMCO performs the MRL calculations to operationalise the Reliability Standard that is specified by the Reliability Panel <http://www.nemmco.com.au/powersystemops/240-0020.htm>

The input data required for the EAAP would take into account:

- the input data for MT PASA as specified in clause 3.7.2(c), including expected future generator availability expressed as a daily capacity and network constraints;
- the input data needed for the ANTS and the calculation of the Minimum Reserve Levels, where relevant, including generator forced outage rates is assumed to also be available to the EAAP;<sup>47</sup>
- NEMMCO's forecast estimate of the load profiles for each region<sup>48</sup>; and
- Generator energy models (GEMs) specified by each Scheduled Generator to describe the energy constraints associated with its generating units, including quarterly updated parameter values.

### **Generator energy model (GEM)**

The GEM for each Scheduled Generator provides a description of the constraints on the ability of a generating unit, generating system or group of generating units to generate electricity. The nature of each GEM should be tailored by the participant to suit its technology and fuel source, and be suitable for the purposes of the EAAP. The GEM for a Scheduled Generator is likely to either be in the form of either:

- energy generation limitations over a defined period (such as MWh for a given month or quarter); or
- a model that represents the physical characteristics of the energy constraints such as fuel storage capacity and fuel inflow rate.

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<sup>47</sup> NEMMCO already collects the generator FOR values for the MRL and ANTS. Therefore, the Rules do not need to explicitly mention the FOR values.

<sup>48</sup> NEMMCO's estimate of the load profiles for each region I would generally be based on the SOO forecasts and historical load traces but NEMMCO may vary from this for some scenarios and it may adopt another approach to synthesise appropriate load traces.

The GEM will need to be in a form that appropriately represents the energy limitations of the plant. It needs to be consistent with the GEM guidelines and be agreed with NEMMCO.

Each GEM specification must include definitions of each of the parameters of the model, including such parameters as the energy generation limitations or the physical characteristics of the associated generating facilities.

In some cases a single GEM specification may apply to a collection of generating units that face common set of energy constraints due to their geographic location, access to a fuel source or other similar reason.

The GEM parameters will require regular updating with the changing circumstances surrounding the energy constraints of the associated generating units.

Each quarter the Scheduled Generators must also provide NEMMCO with the status of each of the energy constraints of its generating units. This would be achieved by providing NEMMCO with the most recent values for each of the GEM parameters. For example, the GEM for a hydro generating unit might include:

- the availability of the generating unit (as specified in MTPASA);
- the capacity of the storage reservoir;
- the storage level of the reservoir; and
- the projected in-flow by month (for each scenario being considered under the EAAP guidelines).

The Scheduled Generators' anticipated energy generation by month or quarter is required to determine whether the aggregate generator energy availability is sufficient to reliably meet the NEM loads.

Each quarter the Scheduled Generators must, in addition to the updated parameter values, provide NEMMCO with its anticipated (or preferred) energy generation by month or quarter over the 24 month assessment period.

### **GEM Guidelines**

NEMMCO is required to prepare GEM guidelines to assist Scheduled Generators prepare a GEM in a form that is suitable for inclusion in the EAAP modelling process.

NEMMCO should prepare guidelines (GEM guidelines) that identify:

- the components of a GEM that a scheduled generator must take into account when submitting a GEM to NEMMCO;
- the range of parameters that can be used in a GEM, taking into account NEMMCO's intended approach to modelling, potentially including hydro storage, thermal generation fuel constraints, cooling water availability and gas supply limitations;
- guidelines as to the presentation of the GEM, to facilitate its usage in the EAAP model;
- the extent to which a single GEM can be used to represent a group of generating units that face a common set of energy constraints; and
- the arrangements for managing the confidentiality of information submitted to NEMMCO.

The GEM guidelines should be prepared by NEMMCO in accordance with the Rules consultation process. NEMMCO should have the power to amend the GEM guidelines from time to time as the need arises. Once prepared a set of GEM guidelines should be available at all times after that date.

### **GEM confidentiality**

The GEM may contain information that is commercially sensitive, particularly the updated GEM parameters and the associated future generation profile. Therefore, the confidentiality of this sensitive information should be maintained to ensure that good quality GEM information is provided to NEMMCO.

NEMMCO must treat the information it receives from the scheduled generator as confidential and only disclose this information on the basis of the arrangements in the GEM Guidelines and to the extent that it does already under other parts of the Rules<sup>49</sup>. This requirement should apply to:

- the GEM provided to NEMMCO, including any amendments to that GEM;
- the variable parameters that are updated quarterly; and
- the anticipated generation.

The GEM and information relevant to the GEM are to be treated as "confidential information". This phrase is defined in Chapter 10 of the Rules. It includes any information that is derived from the confidential information as well. There are some exceptions to the "confidentiality" of this information which are found in rule 8.6. In particular, this rule deals with the management of confidential information by Registered Participants which includes NEMMCO. The relevant exceptions to the requirement to keep the information confidential for the purpose of the GEM are:

- if the information is at the time generally and publicly available other than as a result of a breach of confidence (clause 8.6.2(a));
- consent is obtained for the disclosure of the information (clause 8.6.2(c));
- the information is reasonably required for potential investment (clause 8.6.2(h)); and
- disclosure is in aggregate sum (clause 8.6.2(k)).

On the basis of the above exceptions, information that is already publicly available through other NEMMCO documents would be an exception to the requirement to keep the information confidential.

### **EAAP scenarios**

The EAAP is a forecast of the possible impact of generator energy constraints over the two year period of projection and, consequently, the results will depend significantly on the assumptions made about the energy limits. Therefore, to provide more value to stakeholders NEMMCO should study several scenarios. The Panel does note that studying a large number of scenarios would provide diminishing value to stakeholders and place a significant burden on NEMMCO and, therefore, the total number of scenarios to be studied is expected to be limited to about three.

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<sup>49</sup> NEMMCO currently publishes some information on the energy constraints for some generators in the document "2007 ANTS Consultation Issues Paper"



NEMMCO would consider a number of scenarios. Examples could include:

- normal rainfall and drought conditions;
- gas shortage conditions (e.g. an outage of a major pipeline); or
- other limits on a fuel source for a major portion of Generators.

The scenarios considered by NEMMCO should be specified in the EAAP Guidelines.

### **EAAP Guidelines**

While the power necessary for NEMMCO to operate the EAAP will be in the Rules, the Panel should prepare EAAP Guidelines to provide more detailed direction to NEMMCO. These guidelines will specify scenarios that NEMMCO should study and give direction as to how the output results should be presented. When preparing these guidelines the Panel should consult with NEMMCO and generally with other stakeholders.

The Panel should, in consultation with NEMMCO and using the consultation procedures in clause 8.8.3 of the Rules, develop EAAP guidelines to specify the scenarios that NEMMCO should study when preparing the EAAP results for publication.

The EAAP Guidelines will also include specific instructions to NEMMCO on the manner that the results should be presented. In particular, the results should include estimates of the regional USE by month over the two year assessment period that are based on both:

- the Generators' anticipated (or preferred) generation by month over the two year assessment period, that is, based on the energy generation profile that the generators are currently planning; and
- the Generators' generation capability as defined by the GEM and the most recent updated parameters, that is, based on a modified energy generation profile that the generators could make available within their physical limitations, but that minimises projected USE levels.

### **C.1.3 Ten Year Projection of Energy Adequacy**

In addition to the two year projection in the EAAP, the Panel is proposing that the NEMMCO Statement of Opportunities includes a projection, over ten years, of generation energy constraints and projected reliability of supply.

The requirements for the preparation of the NEMMCO SOO in clause 3.13.3(q) should be amended to include a requirement to report on generation input constraints and the projected reliability of supply.

#### **C.1.4 Standing Data – Accuracy of the Load Forecasts**

The accuracy of the load forecasts is very important to management of reliability in the NEM. If the forecasts are too high then NEMMCO will tend to intervene with reserve contracting, non-scheduled reserve contracting and reliability directions too often. However, if the load forecasts are too low then NEMMCO will tend to intervene less often than would be necessary to maintain reliability standard. Intervening too often would cause excessive costs to Market Customers while intervening too infrequently would cause an increased risk of not meeting the reliability standard.

Given this importance of the load forecasts, and the concerns by some participants the load forecasts use by NEMMCO are too conservative, the Panel proposes that NEMMCO report on the accuracy of the load forecasts in the SOO.

NEMMCO will be required to provide the Panel with a report, which it may choose to publish, on the accuracy of the demand forecasts in the most recent SOO and on any improvements made by NEMMCO or any other relevant parties to the process.

#### **C.1.5 The Reliability and Emergency Reserve Mechanism (RERM)**

The Panel is proposing to replace the current Reserve Trader with a Reliability and Emergency Reserve mechanism (RERM). The proposed RERM incorporates incremental improvements in the design of the existing Reserve Trader and has been designed to impose minimal distortion on the operation of the NEM while increasing NEMMCO's flexibility when contracting for reserves.

##### **RERM maximum contract period**

Under the current Reserve Trader arrangements, NEMMCO is only able to contract for capacity reserves up to six months in advance of a projected shortfall. The consequence of this short lead-time is that there are only a limited number of potential sources of reserve capacity that are available. The Panel anticipates that extending this timeframe will increase the range of entities willing to offer reserves contracts, increasing competition and hence reducing the procurement cost, although the Panel is mindful that allowing NEMMCO to procure reserves too far in advance of the projected shortfall may distort investment in new generating plant.

Therefore, on balance, the Panel is recommending that under the proposed RERM, NEMMCO would be able to contract for reserves for up to nine months in advance of a period where the reserves are projected to be insufficient to meet the reliability standards.

### **RERM rolling tendering process**

NEMMCO currently only has one opportunity to tender and enter into contracts under the Reserve Trader. This rigid tendering and contracting timetable may mean that NEMMCO is restricted from entering into the most efficient reserve contracts.

Under the proposed RERM, NEMMCO would be required to contract further in advance of a projected reserve shortfall and it would therefore be necessary to allow NEMMCO to undertake multiple rounds of tendering and contracting when selecting the optimal portfolio of reserve contracts to cover a projected shortfall. Such a rolling tendering process would also allow NEMMCO's reserve contracting to be informed by the updated quarterly EAAP projections of the impact of generation input constraints, and the associated market responses.

It is proposed that, in addition to any contracts its has already entered into, NEMMCO would be able to:

- enter into reserve contracts or non-scheduled reserve contracts; or
- renegotiate existing reserve contracts or existing non-scheduled reserve contracts.

### **Regional basis for the operation of the RERM**

The RERM needs to operate on a regional basis because the RERM is a mechanism to address reliability and the reliability standard is expressed on a regional basis. Similarly, the need to operate the RERM is driven by capacity shortages which are also calculated in PASA and pre-Dispatch on a regional basis.

The RERM will operate on a regional basis.

## RERM principles

NEMMCO will need principles when operating the RERM. These can potentially either be in the Rules, Panel guidelines or a combination of the two. To provide more certainty for stakeholders it would be desirable to include very high level principles in the Rules but allow the Panel to develop guidelines, through a consultation process, to refine the detailed approach.

The Rules should include the following proposed principles:

- actions taken by NEMMCO should be those that are expected to have the least distortionary effect on the operation of the market; and
- actions taken should aim to minimise the effectiveness of reserve and non-scheduled reserve contracts at the least cost to end use consumers of electricity.

The NEM is an energy only market where entry is driven by periods of anticipated high prices. However, intervening in the market by contracting for either reserves (scheduled or non-scheduled) may potentially affect some long-run investment decisions in peaking generation and demand side options by introducing the possibility of gaming through an alternative funding mechanism. Similarly, dispatching contracted reserves or enabling contracted non-scheduled reserves can affect the spot price due to inflexibilities in the associated contracting arrangements. In both cases NEMMCO should consider the possible distortion to the spot price and long-run operation of the NEM when considering alternative sources of scheduled and non-scheduled reserves.

Note that the Panel considers that where the operation of the RERM encourages new capacity to enter the market earlier than it otherwise would, this is not a significant distortion to the operation of the market as such capacity would become available in any case.

When maximising the cost effectiveness of operating the RERM NEMMCO will need to consider a number of issues including:

- the fixed and variable costs for each contract, and hence the likely total cost of contracting with a particular source of reserves;
- the terms for early termination of a contract;
- any inflexibilities associated with the reserve contract such as minimum, maximum or fixed periods of operation of the reserves; and
- whether, in consultation with the jurisdiction, NEMMCO considers that the incremental cost of additional reserves exceeds the likely benefit to the market.

## **Recovering the costs for operating the RERM**

### Proposed approach for recovering the RERM operating costs

Under the current arrangements, the Reserve Trader's operating costs are recovered from Market Customers (in affected regions) at the end of the reserve contract period. The Panel considers that this is the most equitable approach for the proposed RERM.

The costs of operating the RERM will be recovered from Market Participants on a regional basis and in proportion to the energy settled for each Market Customer in the affected regions.

### Alternative approach for recovering the RERM operating costs

In response to concerns from stakeholders, in particular Market Customers, the Panel is considering an alternative mechanism for recovering the costs of exercising the RERM. Under this alternative mechanism NEMMCO would administer a series of administered funds to spread the cost of operating the RERM across a number of years.

The alternative mechanism would be a compensation fund for the reliability and emergency reserve mechanism and would be based on the following principles:

- the fund would be established and maintained by NEMMCO
- the costs of the RERM and the source of funding for the fund would be recovered from Market Participants
- the contribution to the fund for each year and each region that includes material loads should be the lesser of:
  - \$1,000,000
  - \$5,000,000 less the amount NEMMCO estimates will be in the fund at the end of the current financial year
- each Market Customer would contribute to the costs for that region and that year in proportion to the energy it consumes during that financial year
- each year NEMMCO should publish a report that defines the RERM funding requirements for each region
- when determining the actual payment for each Market Customer NEMMCO must take into consideration the RERM guidelines which will provide guidance on the factors to take into account in calculating payments.
- each financial year each Market Customer would be required to make:

- one payment to the fund
- an additional payment to meet any shortfall in the fund’s ability to cover the costs of operating the RERM in the associated region (that is the fund should not carry over a negative amount from one year to the next)
- the fund would be the property of NEMMCO and any interest accrued on the fund becomes part of the fund. NEMMCO must pay any taxes or bank fees associated with the fund from the fund.

The Panel seeks feedback from interested parties as part of this Exposure Draft on whether this alternative mechanism for recovering the costs of the RERM is a viable option.

### **Panel review of the expiry date for the RERM**

The RERM can be considered to be a distortion to the operation of the market. The Panel has proposed that the RERM should operate for a specific period of time, that is have an expiry date, but that within three years the Panel should complete a review of need for the RERM and its performance. Following this review, the Panel can recommend that the RERM expires on the set date, is terminated early or is extended for a further period.

The RERM has been designed such that it:

- operates for four years of operation; and
- is reviewed within three years to determine if it is needed or how it could be improved.

Following this review the Panel can recommend that the RERM:

- terminates on prescribed the expiry date
- terminates at an earlier date; or
- is extended for a further period.

### **RERM Guidelines**

The power that enables NEMMCO to operate the current Reserve Trader is provided in the Rules, and in a set of guidelines prepared by the Panel in accordance with clause 8.8.1(a)(3) of the Rules. The Panel is proposing that it develop similar guidelines for the operation of the RERM.

The Panel will prepare and publish RERM Guidelines in accordance with the consultation procedures in clause 8.8.3(d) - (l). The guidelines should consider the following:

- the information NEMMCO must take into account when deciding whether to exercise the RERM;
- the relevance of the RERM principles to the exercise of the RERM;
- the actions that NEMMCO may take to be satisfied that the reserve or non-scheduled reserve that is to be the subject of a contract is not available to the market through any other arrangement;
- the process NEMMCO should undertake in contracting for reserves and non-scheduled reserves including the process for tendering for contracts for such reserves;
- any specific or additional assumptions about key parameters that NEMMCO must take into account in assessing the cost effectiveness of exercising the RERM;
- matters relevant to NEMMCO managing a portfolio of reserve contracts and non-scheduled reserve contracts; and
- additional forecasts that NEMMCO should take into account prior to exercising the RERM.

### **Jurisdictional consultation**

The decision to enter into reserve contracts and non-scheduled reserve contracts requires NEMMCO to make a number of economic tradeoffs. As these tradeoffs impact Market Customers (and indirectly end use customers), it is proposed that NEMMCO should enter into these contracts in consultation with the Participating Jurisdictions that are associated with the affected regions.

When it evaluates reserve contracts and non-scheduled reserve contracts NEMMCO should consult with the Jurisdictions that are associated with the affected regions.

In addition, when more than one region is affected by the RERM then the costs allocated to each region should be determined in consultation with the associated Jurisdictions.

## Minor amendments

The This section identifies cases where the drafting for the proposed RERM deviates from the equivalent drafting in current Rules and the Derogation in Chapter 8A - Part 7 **Provision of Non-Scheduled Reserves by NEMMCO**.

### **Central Dispatch: clause 3.8.1(b)(10)**

In the Rules this clause is worded as “arrangements designed to ensure pro-rata loading of tied *registered bid and offer data*” while the wording in the equivalent clause in the Derogation in Chapter 8A - Part 7 **Provision of Non-Scheduled Reserves by NEMMCO** is “*constraints* designed to ensure pro-rata loading of tied *registered bid and offer data*”.

The important part of this clause is “... designed to ensure pro-rata loading of tied registered bid and offer data”. How NEMMCO achieves this is less important.

The wording for clause 3.8.1(b)(10) should be left as it appears in the main body of the Rules.

### **Dispatch under conditions of supply scarcity: clause 3.8.14**

In the Rules this clause is worded as “NEMMCO must ensure that, during times of *supply scarcity*, the actions set out below occur in the following sequence ... “while the wording in the equivalent in the Derogation in Chapter 8A - Part 7 is “During times of projected *supply scarcity*, NEMMCO must use its reasonable endeavours to ensure that the actions set out below occur in the following sequence ...”.

There are two key differences between these wordings. Firstly, the clause imposes requirements on NEMMCO to take actions to meet the current conditions whereas the derogation requires NEMMCO to consider projected supply when considering the various actions. In practice NEMMCO will:

- use the results from MT-PASA, ST-PASA and pre-dispatch to anticipate projected shortfalls and plan to take the actions described in 3.8.14; and
- ensure that the real-time decisions made in the dispatch timeframe are those described in 3.8.14.

However, the key requirements are in the dispatch timeframe.

The second key difference between the Rule and the derogation is that the derogation introduces “reasonable endeavours”. The need for “reasonable endeavours”, as opposed to an absolute requirement, is necessary because the terms for dispatching of reserve contracts and the enabling of non-scheduled reserve contracts are subject to:



- inflexibilities in the terms in the contracts such as minimum, maximum and fixed length periods when dispatched or enabled<sup>50</sup>; and
- uncertainty associated with forecast information as many contracts require advanced notice of being dispatched or enabled<sup>51</sup>.

Therefore, the proposed wording for clause 3.8.14 should be “*NEMMCO* must use its reasonable endeavours to ensure that, during times of *supply* scarcity, the actions set out below occur in the following sequence: ...”.

#### **NEMMCO Notice under clause 3.20.4(g)**

Clause 3.20.4(g), at present clause 3.12.1(e) in the derogation of the current Rules, states that:

“If, at any time *NEMMCO* deems it necessary to commence contract negotiations for the provision of:

- (1) *reserves* under *reserve contracts* or *non-scheduled reserve contracts*; or
- (2) *market network services* to make *reserves* available where required,

*NEMMCO* must *publish* a notice of its intention to do so.”

The specific ability to contract with *market network services* is not required as clause 3.20.4(a)(2) allows *NEMMCO* to enter into a reserve contract with a *scheduled network services*. In addition, the definition of reserve (short term and medium term capacity reserve) includes reserve made available via prescribed and scheduled network services.

Therefore, the proposed wording for clause 3.8.14 should be “If, at any time *NEMMCO* deems it necessary to commence contract negotiations for the provision of *reserves* under *reserve contracts* or *non-scheduled reserve contracts* *NEMMCO* must *publish* a notice of its intention to do so.

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<sup>50</sup> These inflexibilities would be common where the resource of the non-scheduled reserve was a manufacturing process where the interruption of the load corresponds to a shift. Maximum interruption periods would be associated with processes such as smelting where the process needs to be kept above a minimum temperature.

<sup>51</sup> Advanced notice may be required to manage the staffing at a manufacturing process.

## **NEMMCO procedures for exercising the RERM: clause 3.20.9(h)**

NEMMCO should develop and publish procedures for the exercise of the RERM.

NEMMCO must develop and publish procedures for the exercise of the RERM.

When developing these procedures NEMMCO must:

- follow the Rules consultation procedures;
- consider the RERM Principles; and
- consider the RERM Guidelines developed by the Panel.

NEMMCO may amend these procedures from time to time, in accordance with the Rules consultation procedures.

### **C.1.6 Reliability Directions**

At present NEMMCO has the power to issue directions under clause 4.8.9 of the Rules to maintain or re-establish the power system to a secure operating state, a satisfactory

operating state, or a reliable operating state. In the present version of the Rules it is unclear whether NEMMCO's power to issue a direction to maintain or re-establish the power system to a reliable operating state (reliability direction) expires on 1 July 2008<sup>52</sup>.

The Panel considers that NEMMCO's power to issue reliability directions should be retained because:

- issuing a reliability direction is not regarded by the Panel as a significant distortion to the operation of the NEM;
- in practice it is not always clear at the time of a system incident whether a direction is a reliability direction or a direction to re-establish the power system to a secure operating state; and
- it is desirable to remove the ambiguity associated with the expiry date.

The Panel intends that NEMMCO's power to issue reliability directions be reviewable but will address this issue separately following the publication of the final report of its Comprehensive Reliability Review.

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<sup>52</sup> The operation of the expiry date in clause 4.8.9(h) appears to be overridden by NEMMCO's power in clause 4.8.9(a) that is provided notwithstanding any other provisions of clause 4.8.

NEMMCO's power to issue reliability directions under clause 4.8.9 should be extended without a sunset.

## C.2 Reliability and Emergency Reserve Mechanism Rule

The Reliability Panel in its review of the reliability safety net and in the context of generation input constraints, has recommended changes to the Rules to ensure reliability of supply. These changes can be broadly identified as:

1. the introduction of an energy information publication designed to disclose energy constraints that are relevant to the reliability of the power system;
2. retaining the reliability safety net with some enhancements and modifications; and
3. clarifying that reliability directions under clause 4.8.9 of the Rules will not expire with the reliability safety net.

**Schedule 1** contains proposed amendments to the National Electricity Rules to incorporate the energy information publication which has been called the Energy Adequacy Assessment Projection (EAAP). The EAAP will cover a 24 month period, published quarterly and provide information on a monthly basis. It will be prepared by NEMMCO with the inputs being, in addition to the inputs to the PASA processes, specific information in relation to scheduled generating units.

Each Scheduled Generator will be required to submit a Generator Energy Model (GEM) to NEMMCO which will assist NEMMCO in forecasting energy constraints. A new definition of “energy constraints” has been included in Chapter 10 of the Rules to avoid confusion with the definitions of “energy” and “constraint”. Scheduled Generators will have to update the parameters to the model on a quarterly basis to update NEMMCO’s inputs for the purposes of the quarterly publication of the EAAP.

NEMMCO is to prepare guidelines to assist Scheduled Generators in the submission of the GEM and associated information to ensure that NEMMCO obtains all relevant information for the EAAP. These guidelines are referred to as the GEM guidelines.

The Reliability Panel is also required to prepare guidelines for the EAAP. These guidelines are referred to as the EAAP guidelines and are aimed at covering the necessary scenarios that NEMMCO should study in relation to energy input constraints. The purpose of the EAAP guidelines are to direct NEMMCO to take into account particular energy input constraints such as the drought or fuel shortages when preparing the EAAP. The Reliability Panel are to prepare the guidelines in accordance with the Reliability Panel consultation procedures in Chapter 8 of the Rules.

In conjunction with the EAAP, the Reliability Panel has proposed extending the scope of the Statement of Opportunities (SOO) to require NEMMCO to report on energy constraints. NEMMCO will also be required to provide the Reliability Panel with a report each year on any improvements made to the energy forecasts in the SOO.

**Schedule 2** contains the key clauses relating to the Reliability and Emergency Reserve Mechanism known as the RERM which will replace the reliability safety net provisions in the Rules and also the Part 7 derogation in Chapter 8A. The RERM has

been drafted to be a stand alone section of the Rules to the extent that this is possible. The reason behind this structure is to minimise amendments to the Rules when it expires. Currently, the reliability safety net provisions are scattered throughout Chapters 3 and 4 of the Rules and amended by the Part 7 derogation (which largely incorporates non-scheduled reserves). This scattering of provisions is both confusing, misleading and creates difficulties in identifying the relevant provisions to the reliability safety net. The current structure lacks transparency as to the implications to the market of reserve contracting. The new structure is designed to ensure that all relevant clauses of the RERM are in a central location. The drafting largely reflects the wording in the Part 7 derogation.

The RERM is substantially similar to the reliability safety net with some modifications and incremental improvements namely:

- it gives NEMMCO the power to enter into contracts for reserves and non-scheduled reserves up to nine months prior to the projected capacity shortfall arising;
- it places a requirement on NEMMCO to ensure the reserve contract or non-scheduled reserve contract includes a provision that ensures the contracting party has not and will not offer the reserve or non-scheduled reserve in the market except in accordance with the contract;
- it provides for NEMMCO to manage a portfolio of reserve and non-scheduled reserve contracts to provide for a rolling tender process;
- it provides for the matters that the Reliability Panel may make guidelines about; and
- it contains an expiry date with an option for the Reliability Panel to conduct a review to recommend to the AEMC for the RERM to expire earlier.

This section also includes a drafting note proposing an alternative mechanism to reserve settlements as a method of recovering the costs of exercising the RERM. The alternative is a compensation fund that is administered by NEMMCO and funded by Market Participants with yearly contributions. The fund must always have sufficient funds to cover the costs of exercising the RERM and any shortfalls would be covered by the Market Participant who caused the shortfall.

**Schedule 3** contains the other clauses in the Rules that affect the RERM. They are contained in a separate schedule in this Exposure Draft Rule for ease of understanding. These clauses primarily relate to various mechanisms contained in the Rules for the overall operation of the market that require modifications as a result of the RERM (or previously the operation of the reliability safety net).

The key amendment in this section is the introduction of the term “NEMMCO intervention event”. The purpose of the term is to capture the situation where clauses refer to both the issuing of directions but also the dispatch of reserve contracts or activation of non-scheduled reserve contracts. The term NEMMCO intervention event is an attempt to encapsulate the different market intervention mechanisms with the view that if the RERM expired, instead of references to the reserve contracts and non-scheduled reserve contracts in the Rules, the reference would be to

NEMMCO intervention event. The difference being that after the expiry of the RERM, a NEMMCO intervention event would only refer to directions.

The other noticeable difference in the Exposure Draft Rule is the renumbering of rule 3.12. As a result of removing the reliability safety net provisions (now the RERM provisions) into a separate clause, the relevant clauses in that section have been renumbered to clean up the structure of rule 3.12.

Lastly, the Rule fund referred to in rule 1.11 has been redrafted so that it does not specifically refer to the reserve trading fund. It now refers to a trading fund in the generic sense with a cross reference in the RERM clauses to deal with the requirement on NEMMCO to administer a fund in its books in relation to the RERM. It will also make it administratively easier to include other funds in NEMMCO's funds

## Schedule 1 Energy Adequacy Assessment Projection

### [1] New clause 3.7B Energy Adequacy Assessment Projection

After rule 3.7A, insert:

#### 3.7B Energy Adequacy Assessment Projection

##### Administration of EAAP

- (a) NEMMCO must administer an *energy adequacy assessment projection* in accordance with this rule 3.7B that covers a 24 month period commencing on the day NEMMCO publishes the projection and which is to be known as *EAAP*.
- (b) NEMMCO must *publish* the outcome of the *EAAP* by the first *business day* of the month every three months and the first *EAAP* must be published on [insert date].
- (c) NEMMCO may *publish* the *EAAP* at such other times not referred to in paragraph (b) if NEMMCO considers there has been a material change to the last published *EAAP*.
- (d) Every three months for the purposes of publishing the *EAAP*, NEMMCO must obtain from each *Scheduled Generator* in accordance with the *timetable*:
  - (1) updated *GEM parameters* from each *Scheduled Generator*; and
  - (2) an estimate of anticipated *generation* from each *Scheduled Generator* for each month of the *EAAP* as identified in accordance with the *GEM guidelines*;
  - (3) other information that supplements the data provided under subparagraphs (1) and (2) that is reasonably required by NEMMCO to study the scenarios specified in the *EAAP guidelines*.
- (e) Each *Scheduled Generator* must provide NEMMCO with the information referred to in paragraph (d) in accordance with the *timetable*.

## **Inputs to EAAP**

- (f) *NEMMCO* must take into account the following inputs in preparing the *EAAP*:
  - (1) the *medium term PASA* inputs referred to in clause 3.7.2(c);
  - (2) where relevant, the matters *NEMMCO* considers in, and for the purposes of, clause 5.6.5(c) in carrying out the *ANTS review*;
  - (3) *Generator Energy Models* provided by each *Scheduled Generator* in accordance with paragraph (g);
  - (4) updated *GEM parameters* where necessary for each *GEM* provided in accordance with the *timetable* and the *GEM guidelines*; and
  - (5) estimates of anticipated *generation* for each *Scheduled Generator* provided in accordance with the *timetable* and the *GEM guidelines*.

## **Generator Energy Model**

- (g) In accordance with the *GEM guidelines* developed under paragraph (i), a *Scheduled Generator* must submit to *NEMMCO* for the purposes of the *EAAP*, a model of the *energy constraints* that affect the ability of a *generating unit* to generate electricity ('*GEM*' or '*Generator Energy Model*') which must be in a form that adequately represents that *generating unit* sufficient for *NEMMCO* to include the *GEM* in the *EAAP*.
- (h) A *GEM* submitted under paragraphs (g) and (h) must be supplemented by *GEM parameters* for that *GEM* as identified in the *GEM guidelines* referred to in paragraph (i) and the parameters must be updated every three months in accordance with the *timetable*.
- (i) For the purposes of paragraph (g), *NEMMCO* must *publish* (and amend from time to time) in accordance



with the *Rules consultation procedures, GEM guidelines* that:

- (1) identify the components of a *GEM* that a *Scheduled Generator* must include in a *GEM* submitted under paragraph (g);
  - (2) provide detail on the forms of the *GEM* sufficient for a *Scheduled Generator* to meet the requirements of paragraph (g);
  - (2) identify variable parameters specific to a *GEM* (*'GEM parameters'*) that are likely to have a material impact on the *GEM* and therefore the *EAAP*, and which may include actual data in relation to:
    - (i) hydro storage;
    - (ii) thermal *generation fuel*;
    - (iii) cooling water availability; and
    - (iv) gas supply limitations;
  - (3) identify circumstances where a *GEM* submitted under paragraph (g) can apply to a collection of *generating units* that face common *energy constraints* due to their geographic location, access to fuel source or another similar reason;
  - (4) identify the form for information to be submitted by each *Scheduled Generator* in accordance with paragraph (e); and
  - (5) identify arrangements for managing the confidentiality of information submitted to *NEMMCO* under this rule 3.7B.
- (j) The first *GEM guidelines* must be published by [insert date] and there must be a set of *GEM guidelines* available at all times after that date.
- (k) Where a *Scheduled Generator* has submitted a *GEM* under paragraph (g) and there has been a material change in circumstances to the *energy constraints* associated with

that *GEM*, the *Generator* must revise and re-submit the *GEM* in accordance with that paragraph.

- (l) A *GEM* or information provided in relation to a *GEM* to *NEMMCO* must be treated by *NEMMCO* as *confidential information*.

### **EAAP Guidelines**

- (m) The *Reliability Panel* must develop, *publish* and may amend from time to time, in accordance with clauses 8.8.3(d) – (l), guidelines that *NEMMCO* must take into account in preparing the *EAAP* which identify:

- (1) scenarios that *NEMMCO* must study in preparing the *EAAP*;
- (2) modeling assumptions for the *EAAP*; and
- (3) the form of output of the *EAAP*,

to be known as “*EAAP guidelines*”.

- (n) The *Reliability Panel* must consult *NEMMCO* when developing or amending the *EAAP guidelines* to ensure *NEMMCO* can implement any matters provided in the guidelines in the *EAAP*.

- (o) The first *EAAP guidelines* must be *published* by [insert date] and there must be a set of *EAAP guidelines* available at all times after that date.

- (p) The scenarios that the *Reliability Panel* may identify for the purposes of the *EAAP guidelines* referred to in paragraph (m) may include:

- (1) water conditions such as normal rainfall and drought;
- (2) material restrictions on the supply of a significant fuel source;
- (3) gas conditions such as the failure or outage of a major gas pipeline;

- (4) other limits on a fuel source for a major form of *generation*; and
- (5) any other scenario that the *Reliability Panel* reasonably considers will have a material impact on the *EAAP*.

**Publication of EAAP**

- (q) *NEMMCO* must *publish* the outcome of the *EAAP* in accordance with the *EAAP guidelines* and incorporate in aggregate form the results of each scenario that *NEMMCO* is required to study in accordance with the *EAAP guidelines*.

**[2] Clause 3.13.3 Standing data**

In clause 3.13.3(q)(4), after the words “*Annual Planning Reports*,” omit the word “and”.

**[3] Clause 3.13.3 Standing data**

In clause 3.13.3(q)(5), omit the matter “.” and insert:

- (5) ;
- (6) *energy constraints* associated with *generation*; and
- (7) projections of *reliability* of *supply*.

**[4] Clause 3.13.3 Standing data**

After clause 3.13.3(t), insert:

- (u) By 1 September each year, *NEMMCO* must provide a report to the *Reliability Panel* (who may *publish* the report at its discretion) on:
  - (1) the accuracy of the demand forecasts to date in the most recent *statement of opportunities*; and

- (2) any improvements made by *NEMMCO* or other relevant parties to the forecasting process that will apply to the next *statement of opportunities*.

**[5] Clause 3.13.4 Spot market**

After clause 3.13.4(x), insert:

- (y) Every three months in accordance with the *timetable*, *NEMMCO* must *publish* the details of the outcome of the *EAAP* in accordance with rule 3.7B.
- (z) The details of the outcome of the *EAAP* referred to in paragraph (y), must include the matters specified in rules 3.7B(o) and (p).

**[6] Chapter 10 New definitions**

In Chapter 10, insert the following definition in alphabetical order:

**EAAP guidelines**

The guidelines prepared by the *Reliability Panel* in accordance with rule 3.7B(m) that *NEMMCO* must take into account in preparing the *EAAP*.

**energy adequacy assessment projection (“EAAP”)**

A projection of *NEMMCO*’s assessment of energy availability that accounts for *Generator energy constraints* for each month over a 24 month period which is prepared and published in accordance with rule 3.7B and measured as *unserved energy* in each *region*.

**energy constraint**

A limitation on the capability of a *generating unit* or group of *generating units* to generate electrical *active power* due to the restrictions in the availability of fuel or other necessary expendable

resources such as, but not limited to, gas or coal, or water for operating turbines or for cooling.

### **Generator Energy Model, GEM**

A description of the *energy constraints* on the ability of a *generating unit* to *generate* electricity which is consistent with the *GEM guidelines*.

### **GEM guidelines**

Guidelines developed by *NEMMCO* in accordance with rule 3.7B(i).

### **GEM parameters**

Variable parameters to a specific *GEM* identified by *NEMMCO* in the *GEM guidelines* in accordance with rule 3.7B which supplement a *GEM* and are submitted by a *Scheduled Generator* and updated every three months in accordance with rule 3.7B for the purpose of the *EAAP*.

### **unserved energy**

The amount of energy, expressed in GWh, that is demanded but cannot be supplied because there is an insufficient combination of:

- (a) *generation*; and
- (b) *network capability* of the bulk *transmission network*.

## **Schedule 2 Reliability and Emergency Reserve Mechanism**

### **[1] New rule 3.20**

After rule 3.19, insert:

## 3.20 **Reliability and Emergency Reserve Mechanism**

### 3.20.1 Definitions

In this rule 3.20:

**activate, activated, activation** mean operation of a *generating unit* (other than a *scheduled generating unit*) at an increased *loading level* or reduction in demand (other than a *scheduled load*) undertaken in response to a request by *NEMMCO* in accordance with a non-scheduled reserve contract.

**non-scheduled reserve** means the amount of surplus or unused capacity:

- (a) of *generating units* (other than *scheduled generating units*); or
- (b) arising out of the ability to reduce demand (other than a *scheduled load*).

**non-scheduled reserve contract** means a contract entered into by *NEMMCO* for the provision of non-scheduled reserve.

**reliability and emergency reserve mechanism or RERM** means the actions taken by *NEMMCO* referred to in clause 3.20.3 in accordance with this rule 3.20 to ensure *reliability of supply*.

**reserve** means *short term capacity reserve* and *medium term capacity reserve* as contracted by *NEMMCO* under this rule 3.20.

**reserve contract** means a contract for reserve entered into by *NEMMCO* in accordance with this rule 3.20.

### 3.20.2 Expiry of reserve and emergency reliability mechanism

This Rule 3.20 expires on the earlier of:

- (a) 1 June 2012; or
- (b) a date determined by the *AEMC* on the advice of the *Reliability Panel* in accordance with clause 3.20.12.

### 3.20.3 Reliability and emergency reserve mechanism

- (a) *NEMMCO* must take all reasonable actions to ensure *reliability of supply* by negotiating and entering into contracts to secure the availability of reserves or non-scheduled reserves under reserve contracts or non-scheduled reserve contracts (**‘reliability and emergency reserve mechanism’** or **‘RERM’**) in accordance with:

- (1) this rule 3.20;
  - (2) where relevant:
    - (i) clauses 1.11, 3.8.1, 3.8.14, 3.9.3, 3.12A.5, 3.13.3, 3.15.6, 4.8.5A; and 4.8.5B;
    - (ii) rule 3.12; and
    - (iii) any other provision of the *Rules* necessary to exercise the RERM;
  - (3) the RERM principles in paragraph (b); and
  - (4) the RERM guidelines developed and published in accordance with clause 3.20.10.
- (b) *NEMMCO* must have regard to the following principles (**‘RERM principles’**) in exercising the RERM under paragraph (a):
- (1) actions taken should be those which *NEMMCO* reasonably expects, acting reasonably, to have the least distortionary effect on the operation of the *market*; and
  - (2) actions taken should aim to maximise the effectiveness of reserve and non scheduled reserve contracts at the least cost to end use consumers of electricity.
- (c) In having regard to the RERM principles referred to in paragraph (b), *NEMMCO* must have regard where relevant to the RERM guidelines developed by the *Reliability Panel* in accordance with clause 3.20.10.

#### **3.20.4 Reserve contracts and non-scheduled reserve contracts**

- (a) *NEMMCO* may enter into one or more contracts with any person in relation to the capacity of:
  - (1) *scheduled generating units, scheduled network services or scheduled loads* (being reserve contracts); and
  - (2) non scheduled reserves (being non-scheduled reserve contracts).
- (b) *NEMMCO* may determine to enter into reserve contracts or non-scheduled reserve contracts for the provision of reserve or non-scheduled reserve (as the case may be) to ensure that the *reliability of supply in a region* meets the *power system security and reliability standard* established by the *Reliability Panel* for that *region*.

- (c) *NEMMCO* must consult with persons nominated by the relevant *participating jurisdictions* in relation to any determination to enter into contracts under paragraph (b).
- (d) *NEMMCO* must not enter into, or renegotiate, reserve contracts or non-scheduled reserve contracts more than nine months prior to the date that *NEMMCO* reasonably expects that the reserves or non-scheduled reserves under those contracts may be required to ensure *reliability of supply*.
- (e) Subject to paragraph (d), *NEMMCO* may :
  - (1) enter into reserve contracts or non-scheduled reserve contracts; or
  - (2) renegotiate existing reserve contracts or existing non-scheduled reserve contracts,

in addition to the contracts already entered into by *NEMMCO* under this rule 3.20.
- (f) In entering into reserve contracts or non-scheduled reserve contracts under paragraph (b) *NEMMCO* must agree with the relevant nominated persons referred to in paragraph (c) cost-sharing arrangements between the *regions* for the purpose of clause 3.20.6.
- (g) If, at any time *NEMMCO* determines that it is necessary to commence contract negotiations for the provision of reserves or non-scheduled reserves, *NEMMCO* must *publish* a notice of its intention to do so.
- (h) When contracting for the provision of reserves under reserve contracts, *NEMMCO* must not enter contracts in relation to capacity of *generating units*, *scheduled network services* or *scheduled loads* for which *dispatch offers* or *dispatch bids* have been submitted or are considered by *NEMMCO* to be likely to be submitted or be otherwise available for *dispatch* in the *trading intervals* to which the contract relates.

### **Terms and conditions of a contract**

- (i) If *NEMMCO* requests a *Scheduled Generator* or *Market Participant* to enter into a reserve contract in relation to a *scheduled generating unit*, *scheduled network service*, or a *scheduled load*, then the *Scheduled Generator* or *Market Participant* must negotiate with *NEMMCO* in good faith as to the terms and conditions of that contract.
- (j) If *NEMMCO* requests any other person to enter into a reserve contract in relation to a *scheduled generating unit*, *scheduled network service*, a *scheduled load* or non-scheduled reserve, *NEMMCO* must only enter into such a contract if:



- (1) *NEMMCO* has used reasonable endeavours to be satisfied that the person is entering into the contract in good faith; and
- (2) the contract contains a provision that the person has not and will not otherwise offer the reserve or non-scheduled reserve the subject of the contract in the *market* for the *trading intervals* to which the contract with *NEMMCO* relates except in accordance with the contract.

### 3.20.5 Dispatch pricing methodology for non-scheduled reserve contracts

- (a) *NEMMCO* must develop in accordance with the *Rules consultation procedures* and *publish* details of the methodology it will use to request that *generating units* or *loads* under non-scheduled reserve contracts be activated.
- (b) In developing the methodology referred to in clause 3.9.3(e), *NEMMCO* must consult *Registered Participants* on measures to be adopted in order to reduce the possibility that *generating units* or *loads* likely to be activated under non-scheduled reserve contracts are otherwise engaged at the time the non-scheduled reserve contracts are entered into by *NEMMCO*.
- (c) *NEMMCO* may develop and *publish* the methodology developed in accordance with this clause 3.20.5 as part of the methodology *NEMMCO* is required to develop under clause 3.9.3(e) for prices during a *NEMMCO intervention event*.

### 3.20.6 Reserve settlements

- (a) *NEMMCO's* costs incurred in contracting for the provision of reserves and non-scheduled reserves are to be met by fees imposed on *Market Customers* in accordance with this clause 3.20.6.
- (b) Included in the statements to be provided under clauses 3.15.14 and 3.15.15, *NEMMCO* must give each *Market Participant* a statement setting out:
  - (1) the aggregate of the amounts payable by *NEMMCO* under reserve contracts and non-scheduled reserve contracts in respect of the relevant *billing period*;
  - (2) any amounts determined as payable by *NEMMCO*:
    - (i) by the independent expert under clause 3.12.3; or
    - (ii) as a result of a *scheduled network service* or *plant* under a reserve contract being *dispatched* or *generating units* or *loads* under a non-scheduled reserve contract being activated,

in respect of the relevant *billing period*; and

- (3) the aggregate of the amounts receivable by *NEMMCO* under the *Rules* in respect of reserve contracts and non-scheduled reserve contracts during the relevant *billing period*.
- (c) Separate statements must be provided under paragraph (b):
- (1) for reserve contracts and non-scheduled reserve contracts entered into by *NEMMCO* specifically in respect of the *Market Participant's region* in accordance with paragraph (d); and
  - (2) for reserve contracts and non-scheduled reserve contracts other than those entered into for and allocated to a specific *region* or *regions*.
- (d) Where either:
- (1) without the intervention in the *market* of *NEMMCO* a *region* would otherwise, in *NEMMCO's* reasonable opinion, fail to meet the minimum *power system security and reliability standards*; or
  - (2) a *region* requires a level of *power system reliability* or reserves which, in *NEMMCO's* reasonable opinion, exceeds the level required to meet the minimum *power system security and reliability standards*,

then *NEMMCO* must recover its net liabilities, or distribute its net profits, under the terms of reserve contracts or non-scheduled reserve contracts entered into to meet these requirements, from or to the *Market Customers* in that *region* in accordance with paragraph (e).

- (e) In respect of reserve contracts or non-scheduled reserve contracts entered into by *NEMMCO*, *NEMMCO* must calculate in relation to each *Market Customer* for each *region* in respect of each *billing period* a sum determined by applying the following formula:

$$MCP = \frac{E \times RRC}{\Sigma E}$$

where:

MCP is the amount payable by a *Market Customer* for a *region* in respect of a *billing period*;

E is the sum of all that *Market Customer's adjusted gross energy amounts* in a *region* (the “**relevant region**”) in each *trading interval* which commences between 0800 hours and

1930 hours on a *business day* in the *billing period* excluding any loads in that *region* in respect of which the *Market Customer* submitted a *dispatch bid* for any such *trading interval*;

RRC is the total amount payable by *NEMMCO* under reserve contracts or non-scheduled reserve contracts which relate to the relevant *region* in the *billing period* as agreed under clause 3.12.1(d); and

$\Sigma E$  is the sum of all amounts determined as “E” in accordance with this paragraph (e) in respect of that *region*.

- (f) A *Market Customer* is liable to pay *NEMMCO* an amount equal to the sum calculated under paragraph (e) in respect of that *Market Customer*.
- (g) Operational and administrative costs incurred by *NEMMCO* in arranging for the provision of reserves, other than its liabilities under the terms of the reserve contracts or non-scheduled reserve contracts into which it has entered, are to be recovered by *NEMMCO* from all *Market Participants* as part of the fees imposed in accordance with rule 2.11.
- (h) For the purposes of this clause 3.20.6, a re-determination by a panel established under clause 3.12.2 is to be taken to be an agreement between *NEMMCO* and each of the *Market Participants* and *Scheduled Generators*.

*Drafting note: The Reliability Panel is considering an alternative mechanism for recovering the costs of exercising the RERM instead of the mechanism currently in the Rules and now provided for in clause 3.20.6 above. The alternative mechanism would be a compensation fund for the reliability and emergency reserve mechanism and would be based on the following principles:*

- *The fund would be established and maintained by NEMMCO*
- *The costs of the RERM and the source of funding for the fund would be recovered from Market Participants*
- *The aggregate of the contributions to the fund for each year in respect of each region that includes material loads should be the lesser of:*

... \$1,000,000

... \$5,000,000 less the amount NEMMCO estimates will be in the fund at the end of the current financial year in respect of that region.

- Each Market Customer would contribute to the costs for that region and that year in proportion to the energy it consumes during that financial year at connection points in that region.
- Each year NEMMCO should publish a report that defines the RERM funding requirements for each region
- When determining the actual payment for each Market Customer NEMMCO must take into consideration the RERM guidelines which will provide guidance on the factors to take into account in calculating payments.
- Each financial year each Market Customer would be required to make:

... one payment to the fund

... an additional payment to meet any shortfall in the fund's ability to cover the costs of operating the RERM in the associated region taking into account the yearly payment to the fund (that is the fund should not carry over a negative amount from one year to the next)

- The fund would be the property of NEMMCO and any interest accrued on the fund becomes part of the fund. NEMMCO must pay any taxes or bank fees associated with the fund from the fund.

The Reliability Panel seeks feedback from interested parties on whether this alternative mechanism for recovering the costs of the RERM is a viable option.

### **3.20.7 NEMMCO's risk management and accounts relating to the reliability safety net**

- (a) NEMMCO may enter into insurance arrangements with an insurance provider with a view to minimising potential financial losses in respect of NEMMCO's RERM activities described in this rule 3.20.
- (b) NEMMCO must ensure that it maintains in its books separate accounts relating to the RERM powers granted to NEMMCO under

this rule 3.20 which is to be known as a trading fund for the purposes of rule 1.11.

### 3.20.8 Reporting on RERM by NEMMCO

- (a) If a *scheduled network service* or *plant* under a reserve contract with *NEMMCO* is *dispatched* or *generating units* or *loads* are activated under a non-scheduled reserve contract, then *NEMMCO* must, as soon as practicable thereafter, *publish* a report outlining:
- (1) the circumstances giving rise to the need for the *dispatch* of reserves or activation of non-scheduled reserves;
  - (2) the basis on which it determined the latest time for that *dispatch* of reserves or activation of non-scheduled reserves and on what basis it determined that a market response would not have avoided the need for the *dispatch* of reserves or the activation of non-scheduled reserves;
  - (3) details of the changes in *dispatch* outcomes due to the *dispatch* of reserves or activation of non-scheduled reserves; and
  - (4) the processes implemented by *NEMMCO* to *dispatch* the reserves or activate the non-scheduled reserves,
- and if applicable:
- (5) reasons why *NEMMCO* did not follow any or all of the processes set out in rule 4.8 either in whole or in part prior to the *dispatch* of reserves or the activation of non-scheduled reserves; or
  - (6) the basis upon which *NEMMCO* considered it impractical to set *spot prices* and *ancillary service prices* in accordance with clause 3.9.3(b).
- (b) As soon as practicable after *NEMMCO* has, in accordance with clause 3.20.6, included the amounts arising under a reserve contract or non-scheduled reserve contract in a *final statement* provided under clause 3.15.15, *NEMMCO* must *publish* details of:
- (1) the payments under the reserve contract or non-scheduled reserve contract for the relevant *billing periods*; and
  - (2) a breakdown of the recovery of those costs by each category of *Market Customer*, as determined by *NEMMCO*, in each *region*.

- (c) Within 30 *days* of the end of each *financial year*, *NEMMCO* must *publish* a report detailing:
  - (1) each occasion on which it intervened to secure reserve availability;
  - (2) each occasion during the financial year when a *scheduled network service* or *plant* under a reserve contract was *dispatched* or *generating units* or *loads* under a non-scheduled reserve contract were activated; and
  - (3) its costs and finances in connection with its reserve trading activities according to appropriate accounting standards including profit and loss, balance sheet, sources and applications of funds.

### **3.20.9 NEMMCO's exercise of the RERM**

- (a) *NEMMCO* must make a determination in accordance with clause 4.8.5A as to the latest time for intervention by *dispatching* reserves or activating non-scheduled reserves under the relevant contracts.
- (b) *NEMMCO* must provide notifications of the last time for intervention based on the determination referred to paragraph (a) in accordance with clause 4.8.5B.
- (c) Notwithstanding clause 4.8.5A and paragraphs (a) and (b), if *NEMMCO* considers the latest time for exercising the RERM by:
  - (1) the *dispatch* of available reserves; or
  - (2) the activation of available non-scheduled reserves,has arrived, *NEMMCO* may *dispatch* such reserves or activate such non-scheduled reserves.
- (d) *NEMMCO* must follow the relevant procedures in this rule 3.20 prior to *dispatching plant* or a *scheduled network service* the subject of a reserve contract or activating *generating units* or *loads* the subject of a non-scheduled reserve contract unless it is not reasonably practicable to do so.
- (e) Subject to paragraph (d), *NEMMCO* must only *dispatch plant* or a *scheduled network service* the subject of a reserve contract or activate *generating units* or *loads* the subject of a non-scheduled reserve contract in accordance with the procedures developed in accordance with paragraph (g).

- (f) In order to effect the *dispatch* of *plant* or a *scheduled network service* the subject of a reserve contract or the activation of *generating units* or *loads* the subject of a non-scheduled reserve contract *NEMMCO* may:
  - (1) submit, update or vary *dispatch bids* or *dispatch offers* in relation to all or part of such a *scheduled generating unit*, *scheduled network service* or *scheduled load* which is the subject of a reserve contract; or
  - (2) change other inputs to the *dispatch process* to give effect to the *dispatch* of reserves or the activation of *generating units* or *loads* the subject of a non-scheduled reserve contract.
- (g) *NEMMCO* must develop, *publish*, and may amend from time to time, in accordance with the *Rules consultation procedures*, procedures for the exercise of the RERM under this rule 3.20 that takes into account the RERM principles and RERM guidelines developed by the *Reliability Panel* in accordance with clause 3.20.10.
- (h) When exercising the RERM under this rule 3.20, *NEMMCO* must take into account any guidelines relating to the exercise of the RERM published by the *Reliability Panel* in accordance with clause 3.12.10 (**'RERM guidelines'**).

### 3.20.10 RERM Guidelines

- (a) For the purposes of this rule 3.20, the *Reliability Panel* may develop and *publish* RERM guidelines for or with respect to:
  - (1) what information *NEMMCO* must take into account when deciding whether to exercise the RERM;
  - (2) the relevance of the RERM principles to the exercise of the RERM;
  - (3) the actions that *NEMMCO* may take to be satisfied that the reserve or non-scheduled reserve that is to be the subject of a reserve contract or non-scheduled reserve contract (as the case may be) is not available to the *market* through any other arrangement;
  - (4) the process *NEMMCO* should undertake in contracting for reserves and non-scheduled reserves including the process for tendering for contracts for such reserves;

- (5) any specific or additional assumptions about key parameters that *NEMMCO* must take into account in assessing the cost effectiveness of exercising the RERM;
  - (6) matters relevant to *NEMMCO* managing a portfolio of reserve contracts and non-scheduled reserve contracts; and
  - (7) additional forecasts that *NEMMCO* should take into account prior to exercising the RERM.
- (b) The *Reliability Panel* must develop, *publish* and amend from time to time, the RERM guidelines in accordance with clauses 8.8.3(d) – (l).
  - (c) The *Reliability Panel* must *publish* the first RERM guidelines by [insert date] and there must be such guidelines in place at all times after that date.

### 3.20.11 Review of reserve and emergency reliability mechanism

- (a) The *Reliability Panel* must no later than one year prior to the date the RERM is due to expire under clause 3.20.2, complete a review of the RERM (**'RERM review'**) to determine:
  - (1) whether the RERM should expire on the date specified in clause 3.20.2(a); or
  - (2) whether the RERM should expire prior to the date referred to in subparagraph (1) and if so, specify that date;
- (b) The *Reliability Panel* must conduct the RERM review in accordance with clauses 8.8.3(d) – (l).
- (c) The *Reliability Panel* may conduct the review referred to in paragraph (a) as part of the review conducted by the *Reliability Panel* under clause 8.8.3(b).
- (d) On receipt of the written report from the RERM review in accordance with clause 8.8.3(j), the *AEMC* may, taking into account the report, make a determination that the RERM is to expire and specify the date of expiry.
- (e) The *AEMC* must *publish* the determination referred to in paragraph (d).



**[2] Chapter 8A, Part 7**

Omit Part 7 of Chapter 8A.

## **Schedule 3 Amendments necessary to implement the reliability and emergency reserve Mechanism**

### **[1] Rule 1.11 NEMMCO Rule funds**

Omit rule 1.11 and substitute:

#### **1.11 NEMMCO Rule Funds**

- (a) *NEMMCO* must continue to maintain, in the books of the corporation:
  - (1) the registration and administration fund; and
  - (2) the security deposit fund,
  - (3) any fund which the *Rules* provide will be maintained in *NEMMCO's* books,(each a “*Rule fund*”).
- (b) *NEMMCO* must ensure that there is paid into each *Rule fund*:
  - (1) in the case of a fund referred to in paragraph (a)(3):
    - (i) all amounts which are received by *NEMMCO* in connection with carrying out its functions or powers in relation to that trading fund;
    - (ii) all amounts of *Participant fees* which are received or recovered by *NEMMCO* which relate to *NEMMCO's* actual or budgeted costs and expenses for carrying out its functions or powers in relation to that fund;
  - (2) in the case of the registration and administration fund, all amounts of *Participant fees* and *auction expense fees* and any other amounts payable under the *auction rules* or *SRD agreements* as *NEMMCO* considers necessary from time to time other than those which are to be paid into another *Rule fund*;
  - (3) in the case of the security deposit fund, amounts which are received by *NEMMCO* under clauses 3.3.8A, 3.3.13(a)(2) and 3.3.13(a)(3); and
  - (4) in the case of each *Rule fund*, income from investment of money in the *Rule fund*.
- (c) In respect of the security deposit fund, *NEMMCO* must keep records, in respect of each individual *Market Participant*, of:

- (1) security deposits made by that *Market Participant* and actual interest or other income earned on that *Market Participant's* payments to that fund which will be recorded as credits for that *Market Participant*;
  - (2) any application, or return to that *Market Participant*, of monies in the security deposit fund in accordance with clause 3.3.13A;
  - (3) deductions for liabilities and expenses of the security deposit fund referable, or allocated, to that *Market Participant* which will be recorded as debits to that *Market Participant*; and
  - (4) the credit or debit balance for that *Market Participant*.
- (d) NEMMCO must ensure that money from each *Rule fund* is only applied in payment of:
- (1) in the case of a fund referred to in paragraph (a)(3), costs and expenses of *NEMMCO* carrying out its functions or powers in relation to that fund;
  - (2) in the case of the registration and administration fund, costs and expenses of *NEMMCO* carrying out its functions or powers:
    - (i) in relation to a fund referred to paragraph (a)(3) to the extent that such costs and expenses cannot be met from the money contained in that fund; or
    - (ii) other than those functions and powers referred to in subparagraph (i);
  - (3) in the case of the security deposit fund, monies owing to *NEMMCO* by a *Market Participant* or the return of monies to a *Market Participant* in accordance with clause 3.3.13A;
  - (4) in the case of each *Rule fund*:
    - (i) other than the security deposit fund, reimbursement to a *Registered Participant* or another *Rule fund* to make any necessary adjustment for any excess amounts which are paid as *Participant fees* as a result of any of *NEMMCO's* actual costs and expenses being less than the budgeted costs and expenses or as a result of the payment of any interim *Participant fees*; and
    - (ii) liabilities or expenses of the *Rule fund*.

## [2] Clause 3.2.5 Reserves

Omit clause 3.2.5 and substitute:

**[Deleted]**

### **[3] Clause 3.8.1 Central dispatch**

Omit clause 3.8.1(b)(11) and substitute:

(11) ensuring that as far as reasonably practical, in relation to a *NEMMCO intervention event*:

(A) the number of *Affected Participants*; and

(B) the effect on *interconnector flows*,

is minimised.

### **[4] Clause 3.8.14 Dispatch under conditions of supply scarcity**

C.2.1 Omit clause 3.8.14 and substitute:

#### **3.8.14 Dispatch under conditions of supply scarcity**

During times of *supply scarcity*, *NEMMCO* must use its reasonable endeavours to ensure that the actions set out below occur in the following sequence:

(a) subject to:

(1) any adjustments which may be necessary to implement action under paragraph (c); and

(2) any *inflexibilities* associated with a *relevant NEMMCO intervention event*,

all valid *dispatch bids* and *dispatch offers* submitted by *Scheduled Generators* or *Market Participants* are *dispatched*, including those priced at *VoLL*;

(b) subject to:

(1) any adjustments which may be necessary to implement action under paragraph (c); and

- (2) any *inflexibilities* associated with a *relevant NEMMCO intervention event*,

after all valid *dispatch bids* and *dispatch offers* referred to in paragraph (a) have been exhausted, undertake any *relevant NEMMCO intervention events*;

- (c) any further corrective actions required are implemented in accordance with clauses 4.8.5B and 4.8.9.

## [5] Clause 3.9.3 Pricing in the event of intervention by NEMMCO

Omit clause 3.9.3 and substitute:

### 3.9.3 Pricing in the event of intervention by NEMMCO

- (a) In respect of a *dispatch interval* where a *NEMMCO intervention event* occurs *NEMMCO* must declare that *dispatch interval* to be an *intervention price dispatch interval*.
- (b) Subject to paragraphs (c) and (d), *NEMMCO* must in accordance with the methodology or assumptions *published* pursuant to paragraph (e) set the *dispatch price* and *ancillary service prices* for an *intervention price dispatch interval* at the value which *NEMMCO*, in its reasonable opinion, considers would have applied as the *dispatch price* and *ancillary service price* for that *dispatch interval* in the relevant *region* had the *NEMMCO intervention event* not occurred.
- (c) *NEMMCO* may continue to set *dispatch prices* pursuant to clause 3.9.2 and *ancillary service prices* pursuant to clause 3.9.2A until the later of:
  - (1) the second *dispatch interval* after the first *dispatch interval* in which a *NEMMCO intervention event* has occurred; or
  - (2) if applicable, the second *dispatch interval* after the restoration of the *power system* to a *secure operating state* after the *direction* was issued,

provided that *NEMMCO* must use its reasonable endeavours to set *dispatch prices* and *ancillary service prices* pursuant to this clause 3.9.3 as soon as practicable following the *NEMMCO intervention event*.

- (d) *NEMMCO* must continue to set *dispatch prices* pursuant to clause 3.9.2 and *ancillary service prices* pursuant to clause 3.9.2A if a *direction* given to a *Registered Participant* in respect of *plant* at the

*regional reference node* would not in *NEMMCO's* reasonable opinion have avoided the need for the *direction* to be issued.

- (e) *NEMMCO* must develop in accordance with the *Rules consultation procedures* and *publish* details of the methodology it will use, and any assumptions it may be required to make, to determine *dispatch prices* and *ancillary service prices* for the purposes of paragraph (b).
- (f) The methodology developed by *NEMMCO* under paragraph (e) must wherever reasonably practicable:
  - (1) be consistent with the principles for *spot price* determination set out in clause 3.9.1;
  - (2) enable *NEMMCO* to determine and *publish* such prices in accordance with clause 3.13.4; and
  - (3) be consistent with the principles for *ancillary service price* determination set out in clauses 3.9.2 and 3.9.2A.

#### **[6] Rule 3.12 Market intervention by NEMMCO**

Omit clauses 3.12.1 – 3.12.9 and renumber clauses 3.12.10, 3.12.11 and 3.12.11A as clauses 3.12.1, 3.12.2 and 3.12.3 respectively.

#### **[7] References to clauses 3.12.10, 3.12.11 and 3.12.11A**

In the Rules, wherever the clause reference in column A occurs, substitute the clause reference in column B.

A (old clause number)	B (renumbered clause)
3.12.10	3.12.1
3.12.11	3.12.2
3.12.11A	3.12.3

#### **[8] Clause 3.12.1 Intervention settlement timetable**

Omit clause 3.12.1(a) (as renumbered by amendment [4]) and substitute:

- (a) *NEMMCO* must use reasonable endeavours to complete and fulfil its obligations set out in clauses 3.12.2, 3.12.3, 3.15.7, 3.15.7A,

3.15.7B, 3.15.8 and 3.15.10C as soon as practicable and no later than:

- (1) 100 *business days* after the end of the *NEMMCO intervention event* or the end of a series of related *NEMMCO intervention events* if *NEMMCO* is not required to appoint an independent expert pursuant to clause 3.15.7A; and
- (2) 150 *business days* after the end of the *NEMMCO intervention event* or the end of a series of related *NEMMCO intervention events* if *NEMMCO* is required to appoint an independent expert pursuant to clause 3.15.7A.

### **[9] Clause 3.12.1 Intervention settlement timetable**

In clause 3.12.1(b), omit the words “3.12.11, 3.12.11A” and substitute the words “3.12.2, 3.12.3”.

### **[10] Clause 3.12.2 Affected Participants and Market Customers entitlements to compensation in relation to directions and reserve contracts**

Omit clause 3.12.2 and substitute:

#### **3.12.2 Affected Participants and Market Customers entitlements to compensation in relation to NEMMCO intervention**

- (a) In respect of each *intervention price trading interval*:
  - (1) an *Affected Participant* is entitled to receive from *NEMMCO*, or must pay to *NEMMCO*, an amount as determined in accordance with this clause 3.12.2 that will put the *Affected Participant* in the position that the *Affected Participant* would have been in regarding the *scheduled generating unit* or *scheduled network service*, (as the case may be), had the *NEMMCO intervention event* not occurred, taking into account solely the items listed in paragraph (j);
  - (2) a *Market Customer*, other than a *Market Customer* which was the subject of that *direction*, in respect of one or more of its *scheduled loads*, is entitled to receive an amount calculated by applying the following formula:

$$DC = ((RRP \times LF) - BidP) \times QD$$

where:

DC (in dollars) is the amount the *Market Customer* is entitled to receive in respect of that *scheduled load* for the relevant *intervention price trading interval*;

RRP (in dollars per MWh) is the *regional reference price* in the relevant *intervention price trading interval* determined in accordance with clause 3.9.3;

LF where the *scheduled load's connection point* is a *transmission connection point*, is the *intra-regional loss factor* at that *connection point* or where the *scheduled load's connection point* is a *distribution network connection point*, is the product of the *distribution loss factor* at that *connection point* multiplied by the *intra-regional loss factor* at the *transmission connection point* to which it is assigned;

BidP (in dollars per MWh) is the price of the highest priced *price band* specified in a *dispatch offer* for the *scheduled load* in the relevant *intervention price trading interval*;

QD (in MWh) is the difference between the amount of electricity consumed by the *scheduled load* during the relevant *intervention price trading interval* determined from the *metering data* and the amount of electricity which *NEMMCO* reasonably determines would have been consumed by the *scheduled load* if the *NEMMCO intervention event* had not occurred,

provided that if DC is negative for the relevant *intervention price trading interval*, then the adjustment that the *Market Customer* is entitled to claim in respect of that *scheduled load* for that *intervention price trading interval* is zero.

- (b) In respect of a single *intervention price trading interval*, an *Affected Participant* or *Market Customer* is not entitled to receive from, or obliged to pay to, *NEMMCO* an amount pursuant to this clause 3.12.2 if such an amount is less than \$5,000.
- (c) In respect of each *intervention price trading interval*, *NEMMCO* must, in accordance with the *intervention settlement timetable*, notify, in writing:
  - (1) each *Affected Participant* (except *eligible persons*) of:
    - (i) the estimated level of *dispatch* in MW that its *scheduled network service* or *scheduled generating unit* would have been *dispatched* at had the *NEMMCO intervention event* not occurred; and
    - (ii) an amount equal to:



- (A) the estimated *trading amount* that it would have received had the *NEMMCO intervention event* not occurred based on the level of *dispatch* in subparagraph (i), less:
  - (B) the *trading amount* for that *Affected Participant* (excluding from that *trading amount* the amount referred to in clause 3.15.10C(a)) as set out in its final statement provided pursuant to clause 3.15.14 for the *billing period* in which the *intervention price trading interval* occurs;
- (2) each *eligible person* of:
- (i) the estimated level of flow in MW of all relevant *directional interconnectors* that would have occurred had the *NEMMCO intervention event* not occurred; and
  - (ii) an amount equal to:
    - (A) the estimated amount that person would have been entitled to receive pursuant to clause 3.18.1(b) had the *NEMMCO intervention event* not occurred based upon the flows referred to in subparagraph (i); less
    - (B) the actual entitlement of that person under clause 3.18.1(b); and
- (3) each *Market Customer*, the amount calculated by *NEMMCO* in accordance with paragraph (a)(2) for that *Market Customer*.
- (d) *NEMMCO* must include in an *Affected Participant's* or *Market Customer's* final statement provided pursuant to clause 3.15.1 for a *billing period* in which one or more *intervention price trading intervals* occurred:
- (1) the amount notified by *NEMMCO* pursuant to paragraph (c) if the absolute value of such amount is greater than \$5,000; and
  - (2) in all other cases no amount in relation to compensation pursuant to this clause 3.12.2.
- (e) If the figure calculated in accordance with paragraph (c) is:
- (1) negative, the absolute value of that amount is the amount payable to *NEMMCO* by the relevant person; and
  - (2) positive, the absolute value of that amount is the amount receivable from *NEMMCO* by the relevant person.

- (f) Subject to paragraphs (h) and (i), within 7 *business days* of receipt of the notice referred to in paragraph (c) an *Affected Participant* or *Market Customer* may make a written submission to *NEMMCO* in accordance with paragraph (g) claiming that the amount set out in the notice is greater than, less than, or equal to its entitlement pursuant to paragraph (a)(1) as an *Affected Participant* or paragraph (a)(2) as a *Market Customer*, as the case may be.
- (g) A written submission made by an *Affected Participant* or *Market Customer* pursuant to paragraph (f) must:
  - (1) itemise each component of the claim;
  - (2) contain sufficient data and information to substantiate each component of the claim;
  - (3) if the *Affected Participant* claims that the amount calculated by *NEMMCO* pursuant to paragraphs (c)(1) or (c)(2) is less than the amount the *Affected Participant* is entitled to receive pursuant to paragraph (a)(1), specify the difference between such amounts (such difference being the “*affected participant’s adjustment claim*”);
  - (4) if the *Market Customer* claims that the amount calculated by *NEMMCO* pursuant to paragraph (c)(3) is less than the amount the *Market Customer* is entitled to receive pursuant to paragraph (a)(2), specify the difference between such amounts (such difference being the “*market customer’s additional claim*”); and
  - (5) be signed by an authorised officer of the *Affected Participant* or *Market Customer* certifying that the written submission is true and correct.
- (h) If an *Affected Participant* or *Market Customer* does not deliver to *NEMMCO* a written submission in accordance with paragraph (f) it shall cease to have an entitlement to compensation under this clause 3.12.2.
- (i) In respect of a single *intervention price trading interval* an *Affected Participant* or *Market Customer* may only make a claim pursuant to paragraph (f) in respect of that *intervention price trading interval* if it claims that its entitlement or liability pursuant to this clause 3.12.2 is greater than \$5,000.
- (j) In determining the amount for the purposes of paragraph (a)(1), the following must, as appropriate, be taken into account:
  - (1) the direct costs incurred or avoided by the *Affected Participant* in respect of that *scheduled generating unit* or *scheduled*

*network service*, as the case may be, as a result of the *NEMMCO intervention event* including:

- (i) fuel costs in connection with the *scheduled generating unit* or *scheduled network service*;
  - (ii) incremental maintenance costs in connection with the *scheduled generating unit* or *scheduled network service*; and
  - (iii) incremental manning costs in connection with the *scheduled generating unit* or *scheduled network service*;
- (2) any amounts which the *Affected Participant* is entitled to receive under clauses 3.15.6 and 3.15.6A; and
  - (3) the *regional reference price published* pursuant to clause 3.13.4(m).
- (k) *NEMMCO* must in accordance with the *intervention settlement timetable* calculate the “*additional intervention claim*” being the total of:
- (1) the sum of the *affected participant’s adjustment claims* and *market customer’s additional claims* in respect of a *NEMMCO intervention event*, or in respect of, *NEMMCO’s* reasonable opinion, a series of related *NEMMCO intervention events*; plus
  - (2) the total claims by *Directed Participants* pursuant to clauses 3.15.7B(a), 3.15.7B(a1) and 3.15.7B(a2) in respect of that *NEMMCO intervention event*, or in respect of that series of related *NEMMCO intervention events*.
- (l) *NEMMCO* must in accordance with the *intervention settlement timetable*:
- (1) refer an *affected participant’s adjustment claim* or *market customer’s additional claim* to an independent expert to determine such claim in accordance with clause 3.12.3 if the claim is equal to or greater than \$20,000 and the *additional intervention claim* that includes that claim is equal to or greater than \$100,000; and
  - (2) determine in its sole discretion whether all other *affected participants’ adjustment claims* and *market customers’ additional claims* are reasonable and if so pay the amounts claimed in accordance with clause 3.15.10C.
- (m) If *NEMMCO* determines pursuant to paragraph (l) that an *affected participant’s adjustment claim* or *market customer’s additional*

*claim* in respect of a *NEMMCO intervention event* is unreasonable, it must in accordance with the *intervention settlement timetable*:

- (1) advise the *Affected Participant* or *Market Customer*, as the case may be, in writing of its determination including its reasons for the determination; and
  - (2) refer the matter to an independent expert to determine the claim for compensation in accordance with clause 3.12.3.
- (n) For the purposes of clauses 3.15.8 and 3.15.10C(b) any payment pursuant to paragraph (a) must include interest on the sum of that amount less the payment made in accordance with 3.15.10C(1), computed at the average *bank bill rate* for the period from the date on which payment was required to be made under clauses 3.15.16 and 3.15.17 in respect of the *final statement* for the *billing period* in which the *NEMMCO intervention event* occurred to the date on which payment is required to be made pursuant to clause 3.15.10C.

**[11] Clause 3.12.3      Role of Independent Expert in calculating payments in relation to intervention by NEMMCO**

In clause 3.12.3(a) (as renumbered by amendment [4]), omit the words “3.12.2(f), 3.12.2(g)” and substitute the words “3.12.2(l), 3.12.2(m)”.

**[12] Clause 3.12.3      Role of Independent Expert in calculating payments in relation to intervention by NEMMCO**

In clause 3.12.3(b) (as renumbered by amendment [4]), omit the words “3.12.2(c)” and substitute the words “3.12.2(f)”.

**[13] Clause 3.12.3      Role of Independent Expert in calculating payments in relation to intervention by NEMMCO**

Omit clause 3.12.3(b1) (as renumbered by amendment [4]) and substitute:

- (b1) To the extent reasonably practicable, all claims arising out of a single *NEMMCO intervention event* or arising out of, in *NEMMCO’s* reasonable opinion, a series of related *NEMMCO intervention events*, should be determined by the same independent expert as part of the same process.

**[14] Clause 3.12.3      Role of Independent Expert in calculating payments in relation to intervention by NEMMCO**

In clause 3.12.3(c)(1)(i) (as renumbered by amendment [4]), omit the words “3.12.2(f) and 3.12.2(g)” and substitute the words “3.12.2(l) and 3.12.2(m)”.

**[15] Clause 3.12.3      Role of Independent Expert in calculating payments in relation to intervention by NEMMCO**

In clause 3.12.3(c)(1)(i) (as renumbered by amendment [4]), omit the words “3.12.2(c)” and substitute the words “3.12.2(f)”.

**[16] Clause 3.12A.5      Dispatch of restriction offers**

Omit clause 3.12A.5(a) and substitute:

- (a) In a *dispatch interval* NEMMCO may only *dispatch* the capacity of a *scheduled generating unit* or *scheduled network service* in accordance with the procedures for the *rebidding* and *dispatch* of capacity the subject of an *accepted restriction offer* developed by NEMMCO in consultation with *Registered Participants*. Such procedures must as far as reasonably practical incorporate the following principles:
  - (i) *dispatch* of *accepted restriction offers* only after all the capacity of *scheduled loads*, *scheduled generating units* and *scheduled network services* contained in valid *dispatch offers* and *dispatch bids* have been *dispatched*;
  - (ii) recognise any requirement for advance notice or action for generators to operate at minimum generation, provide advance notice to *loads* or obtain capacity of *market network services* that may become the subject of a *NEMMCO intervention event*;
  - (iii) be consistent with the price of *accepted restriction offers* in accordance with clause 3.12A.6; and
  - (iv) minimise the *restriction shortfall amount*.

**[17] Clause 3.13.6 Reserve trading by NEMMCO**

Omit clause 3.13.6 and substitute:

**[Deleted]**

**[18] Clause 3.15.6 Spot market transactions**

Omit clauses 3.15.6(b) and (c) and substitute:

- (b) *NEMMCO* is entitled to the *trading amount* resulting from a *NEMMCO intervention event* and for the purposes of determining *settlement amounts*, any such *trading amount* is not a *trading amount* for the relevant *Market Participant*.
- (c) A *Directed Participant* is entitled to the *trading amount* resulting from any service, other than the service the subject of the *NEMMCO intervention event* rendered as a consequence of that event.

**[19] Clause 3.15.9 Reserve settlements**

Omit clause 3.15.9 and substitute:

**[Deleted]**

**[20] Clause 3.15.10C Intervention settlements**

In clause 3.15.10C, omit the words “clause 3.12.2(b)” wherever occurring and substitute the words “clause 3.12.2(c)”.

**[21] Clause 4.3.1 Responsibility of NEMMCO for power system security**

In clause 4.3.1(l), omit the words “initiate action in relation to the trading in *reserves* in accordance with Chapter 3” and substitute the words “initiate action in relation to a *relevant NEMMCO intervention event*”.

## [22] Clauses 4.8.5A – 4.8.6

Omit clauses 4.8.5A – 4.8.6 and substitute:

### 4.8.5A Determination of the latest time for NEMMCO intervention

- (a) *NEMMCO* must immediately *publish* a notice of any foreseeable circumstances that may require *NEMMCO* to implement a *NEMMCO intervention event*.
- (b) A notice referred to in paragraph (a) must include the forecast circumstances creating the need for the *NEMMCO intervention event*.
- (c) *NEMMCO* must, as soon as reasonably practicable after the *publication* of a notice in accordance with paragraph (a), estimate and *publish* the latest time at which it would need to intervene through a *NEMMCO intervention event*, should the response from the *market* not be such as to obviate the need for the *NEMMCO intervention event*.
- (d) In order to estimate the time referred to in paragraph (c), *NEMMCO* may request information from a *Scheduled Network Service Provider*, *Scheduled Generator* or *Market Customer* and may specify the time within which that information is to be provided.
- (e) The information that *NEMMCO* may request in accordance with paragraph (d) may include:
  - (1) *plant* status;
  - (2) any expected or planned *plant outages* and the MW capacity affected by the *outage*, proposed start date and time and expected end date and time associated with the *outage* and an indication of the possibility of deferring the *outage*;
  - (3) estimates of the relevant costs to be incurred by the *Scheduled Network Service Provider*, *Scheduled Generator* or *Market Customer* should it be the subject of a *direction*, but only if *NEMMCO* considers it reasonably likely that such *Scheduled Network Service Provider*, *Scheduled Generator* or *Market Customer* will be subject to a *direction*.
- (f) A *Scheduled Network Service Provider*, *Scheduled Generator* or *Market Customer* must use reasonable endeavours:
  - (1) to comply with a request for information under paragraph (d);  
and

- (2) to provide *NEMMCO* with the information required in the time specified by *NEMMCO*.
- (g) *NEMMCO* must regularly review its estimate of the latest time at which it would need to intervene through a *NEMMCO intervention event*, and *publish* any revisions to the estimate.
- (f) *NEMMCO* must treat any information provided in response to a request under paragraph (d) as *confidential information* and use it for the sole purpose of assessing to which *Scheduled Network Service Provider*, *Market Customer* or *Scheduled Generator* it should issue *directions*.

#### **4.8.5B Notifications of last time of NEMMCO intervention**

If the latest practicable time for a *NEMMCO intervention event*, as estimated by *NEMMCO* under clause 4.8.5A, is reached and, taking into account *relevant NEMMCO intervention events*, the circumstances described under clause 4.8.5A(a) has not been alleviated, *NEMMCO* must to the extent reasonably practicable immediately:

- (1) *publish* a notice that *NEMMCO*:
  - (i) considers the time for making arrangements for *relevant NEMMCO intervention events*, has elapsed; and
  - (ii) intends to conduct a *NEMMCO intervention event*; and
- (2) amend the *pre-dispatch schedule* to ensure that it is a physically realisable schedule for all periods in which *NEMMCO* intends to conduct a *NEMMCO intervention event*.

#### **[23] Clause 4.8.9 Power to issue directions and clause 4.8.9 instructions**

Omit clauses 4.8.9(g) – (m) and substitute:

- (g) Any *Registered Participant* who is aware of a failure to comply with a *direction* or *clause 4.8.9 instruction* or who believes any such failure has taken place must notify *NEMMCO* and the *AER* in writing and as soon as practicable of that fact.
- (h) If *NEMMCO* issues a *direction* or *clause 4.8.9 instruction*, *NEMMCO* may, to give effect to the *direction* or *clause 4.8.9 instruction*:



- (1) submit, update or vary *dispatch bids, dispatch offers* or *rebids* in relation to the *plant* of *Directed Participants* and *Affected Participants*;
  - (2) change other inputs to the *dispatch process*; or
  - (3) select a *Market Participant* or *Market Participants* to become *Affected Participants* to implement clause 3.8.1(b)(11).
- (i) When issuing *clause 4.8.9 instructions* to implement *load shedding* across *interconnected regions*, *NEMMCO* must use reasonable endeavours to implement *load shedding* in an equitable manner as specified in the *power system security and reliability standards*, taking into account the *power transfer capability* of the relevant *networks*.
  - (j) When issuing *clause 4.8.9 instructions* to implement *load shedding*, *NEMMCO* must comply with its obligations under clauses 4.3.2(e) to (l) and Part 8 of the *National Electricity Law*.

## [24] Chapter 10 Substituted definitions

Omit the following definitions and substitute:

### **Affected Participant**

- (a) In respect of a particular *direction* in an *intervention price trading interval*:
  - (1) a *Scheduled Generator* or *Scheduled Network Service Provider*:
    - (i) which was not the subject of the *direction* that had its *dispatched* quantity affected by that *direction*; or
    - (ii) which was the subject of the *direction* or whose *plant* or *scheduled network service* was *dispatched* under the reserve contract, that had its *dispatched* quantity for other *generating units* or other services which were not the subject of that *direction* or which were not *dispatched* under that reserve contract affected by that *direction* or *dispatch* of *plant* or *scheduled network service* under that reserve contract, however, the *Scheduled Generating Unit* or *Scheduled Network Service Provider* is only an *Affected Participant* in respect of those *generating units* and services which were not the subject of that *direction* or were not *dispatched* under that reserve contract; or

- (2) an *eligible person* entitled to receive an amount from *NEMMCO* pursuant to clause 3.18.1(b)(1) where there has been a change in flow of a *directional interconnector*, for which the *eligible person* holds units for the *intervention price trading interval* and as a result of the *direction*; and
- (b) in relation to the exercise of the RERM under rule 3.20:
- (1) a *Scheduled Generator* or *Scheduled Network Service Provider*:
    - (i) whose *plant* or *scheduled network service* was not *dispatched* under the reserve contract that had its *dispatched* quantity affected by the *dispatch* of *plant* or *scheduled network service* under that reserve contract; and
    - (ii) which was not the subject of activation under the non-scheduled reserve contract, that had its *dispatched* quantity affected by activation of *generating units* or *loads* under that non-scheduled reserve contract;
  - (2) a *Scheduled Generator* or *Scheduled Network Service Provider* whose *plant* was *dispatched* under the reserve contract, that had its *dispatched* quantity for other *generating units* or other services which were not *dispatched* under the reserve contract affected by that *dispatch* of *plant* under that reserve contract but only in respect of those *generating units* and services which were not *dispatched* under that reserve contract.
  - (3) an *eligible person* entitled to receive an amount from *NEMMCO* pursuant to clause 3.18.1(b)(1) where there has been a change in flow of a *directional interconnector*, for which the *eligible person* holds units, as a result of the *dispatch* of *plant* under the reserve contract or the activation of *generating units* or *loads* under a non-scheduled reserve contract.

## **dispatch**

The act of initiating or enabling all or part of the response specified in a *dispatch bid*, *dispatch offer* or *market ancillary service offer* in respect of a *scheduled generating unit*, a *scheduled load*, a *scheduled network service*, an *ancillary service generating unit* or an *ancillary service load* in accordance with clause 3.8, or a *direction* or operation of capacity the subject of a reserve contract in accordance with rule 3.20 as appropriate.

## [25] Chapter 10 New definitions

In Chapter 10, insert the following definition in alphabetical order:

### **NEMMCO intervention event**

An event where *NEMMCO* intervenes (as the case may be), in the *market* under the *Rules* by:

- (a) issuing a *direction* in accordance with clause 4.8.9;
- (b) exercising the reliability and emergency reserve mechanism in accordance with rule 3.20 by:
  - (1) *dispatching a scheduled network service or plant* in accordance with a reserve contract; or
  - (2) activating *loads or generating units* under a non-scheduled reserve contract.

### **relevant NEMMCO intervention event**

A *NEMMCO intervention event* that involves the exercise of the reliability and emergency reserve mechanism in accordance with rule 3.20 and as referred to in paragraph (b) of the definition of *NEMMCO intervention event*.

## [26] Chapter 10 Deleted definitions

In Chapter 10, omit the following definitions:

### **reliability safety net end date**

A date which is the earlier of:

- (a) a date determined by the *AEMC* and published in the South Australian Government Gazette, having regard to any recommendation of the *Reliability Panel* under clause 3.12.1(b); or
- (b) 1 July 2008.

**reserve contract**

A contract between a *Registered Participant* and *NEMMCO* to provide any *reserve* and includes a contract between a *Market Network Service Provider* and *NEMMCO* to facilitate *reserves* in one *region* being made available in another *region*.

### **C.3 Reliability and Emergency Reserve Mechanism Guidelines (under clause 3.20.10 of the National Electricity Rules)**

#### **C.3.1 Interpretation**

Any phrase or word that is italicised in the *RERM guidelines* has the meaning given to that phrase or word in Chapter 10 of the *Rules* or in rule 3.20 of the *Rules* (as the case may be).

For the avoidance of doubt, should any inconsistency arise between the *Rules* and the *RERM guidelines*, the *Rules* are to prevail.

#### **C.3.2 Scope of the RERM guidelines**

Under clause 3.20.10 of the *Rules*, the *Reliability Panel* must develop and *publish* guidelines in accordance with clauses 8.8.3(d) to (l) of the *Rules* that NEMMCO must take into account in exercising the *Reliability and Emergency Reserve Mechanism* in accordance with rule 3.20 of the *Rules*.

The *RERM* gives NEMMCO powers to enter into *reserve contracts* and *non-scheduled reserve contracts* to ensure the *reliability of supply* in accordance with the *RERM guidelines*. The scope of these powers are provided for in the *Rules* primarily in rule 3.20. Clause 3.20.10 identifies the matters which the *Reliability Panel* may make guidelines about. These matters are:

1. what information NEMMCO must take into account when deciding whether to exercise the *RERM*;
2. the relevance of the *RERM* principles to the exercise of the *RERM*;
3. the actions that NEMMCO may take to be satisfied that the reserve or non-scheduled reserve that is to be the subject of a reserve contract or non-scheduled reserve contract (as the case may be) is not available to the *market* through any other arrangement;
4. the process NEMMCO should undertake in contracting for *reserves* and *non-scheduled reserves* including the process for tendering for contracts for such *reserves*;
5. any specific or additional assumptions about key parameters that NEMMCO must take into account in assessing the cost effectiveness of exercising the *RERM*;
6. matters relevant to NEMMCO managing a portfolio of *reserve contracts* and *non-scheduled reserve contracts*; and
7. additional forecasts that NEMMCO should take into account prior to exercising the *RERM*.

Sections 3 to 7 of this document set out the RERM guidelines developed by the Reliability Panel.

### **C.3.3 Information that NEMMCO must take into account**

*NEMMCO* must inform itself of the circumstances relating to *reliability of supply* in order to determine whether to exercise the *RERM*. *NEMMCO* must consider the relevant information at two key stages in addition to generally monitoring the information:

1. when *NEMMCO* is deciding whether to commence contract negotiations for *reserves* and *non-scheduled reserves* under clause 3.20.4(Stage 1);
2. when *NEMMCO* is making a determination on whether to *dispatch reserves* under *reserve contracts* or *activate non-scheduled reserves* under *non-scheduled reserve contracts* under clause 3.20.9 (Stage 2).

In relation to Stage 1 of the *RERM* process, *NEMMCO* may take into account:

- the details of the outcome of the *medium term PASA* as published in accordance with clauses 3.13.4 and 3.7.2; and
- the details of the outcome of the *energy adequacy assessment projection (EAAP)*.

In relation to Stage 2 of the *RERM* process, *NEMMCO* may review the information it took into account in Stage 1 and also consider for the period where reserves or non-scheduled reserves may be required to ensure reliability of supply:

- the details of the outcome of the *short term PASA* process; and
- the details of the outcome of the *pre-dispatch* process in terms of the anticipated available *reserves*;
- any other information that *NEMMCO* reasonably identifies to be necessary.

### **C.3.4 Relevance of the RERM principles**

Clause 3.20.3(b) of the *Rules* identifies three principles referred to as the *RERM* principles which *NEMMCO* must have regard to in exercising the *RERM*. These principles are:

- (1) actions taken should be those which *NEMMCO* reasonably expects, acting reasonably, to have the least distortionary effect on the operation of the market; and
- (2) actions taken should aim to maximise the effectiveness of reserve contracts and non-scheduled reserve contracts at the least cost to end use consumers of electricity.

#### **Least distortionary effect on the operation of the market**

The National Electricity Market is an energy only market where new capacity (generation and demand side) is funded by entities that anticipate periods of

sufficiently high prices. When exercising the RERM, NEMMCO must have regard to the action that is expected to create the least distortion to the operation of the market. In making a determination as to the action to take, NEMMCO should consider:

- whether intervening in the market by contracting for either *reserves* (scheduled or non-scheduled) may potentially affect some long-run investment decisions in peaking generation and demand side options by introducing an alternative funding mechanism that may discourage some participants from bringing their capacity to the market; and
- whether dispatching contracted *reserves* or enabling contracted *non-scheduled reserves* can affect the spot price due to *inflexibilities* in the associated contracting arrangements.

The outcomes of the two issues above will have an impact on whether NEMMCO should exercise the RERM or consider alternatives to the RERM in addressing the capacity shortfall.

Where the operation of the RERM encourages new capacity to enter the market earlier than it otherwise would, this should not be considered as a significant distortion to the operation of the market as such capacity would become available in any case.

#### **Maximising the effectiveness of reserves at least cost**

The matters that NEMMCO should consider in addressing this principle are addressed in section 7 of the RERM guidelines.

#### **C.3.5 NEMMCO actions to be satisfied reserves not offered in other circumstances**

NEMMCO must take appropriate steps under clause 3.20.4 of the Rules to inform itself that a party with which NEMMCO intends to contract for reserves or non-scheduled reserves has not entered into other arrangements for the same energy capacity. This requirement is designed to prevent “double dipping” where a contracting party enters into a contract with NEMMCO but also makes the capacity available to the market through another arrangement.

The Rules provide that a contract contain a provision that the contracting party has not and will not offer the reserve or non-scheduled reserve the subject of the contract in the market except in accordance with the terms of its contract with NEMMCO. Other steps NEMMCO may take to inform itself prior to entering into a contract for reserves or non-scheduled reserves include:

- requiring a tenderer (a prospective party to a contract) to provide an undertaking that the *reserve* or *non-scheduled reserve* is not offered in any other capacity (which promotes the efficiency of the contracting process where this undertaking would flow into the terms and conditions of the contract);
- making reasonable enquiries in the *market*; and

- assessing any information NEMMCO has available to it relevant to whether the *reserve* or *non-scheduled reserve* has been offered in another capacity.

### C.3.6 Process for contracting

Nothing in the RERM guidelines is designed to limit NEMMCO's ability to develop procedures for making the necessary arrangements to exercise the RERM as clause 3.20.9(g) of the Rules provides. Relevant actions that NEMMCO may include:

- continually monitoring the *medium term PASA* for periods of low reserves;
- continually monitoring the *EAAP* to inform itself in taking any action in relation to the *RERM*;
- make a determination to enter into *reserve contracts* and *non-scheduled reserve contract*;
- consult with the person nominated by a *participating jurisdiction* in relation to the *region* or *regions* which NEMMCO intends to *contract* for *reserves* or *non-scheduled reserves* in;
- issue a notice in accordance with clause 3.20.4 that NEMMCO is tendering for *reserves* and *non-scheduled reserves*;
- call for tenders in relation to providing for *reserves* in the respective *regions* or in some circumstances, combined *regions*.
- evaluate the tenders, dispensing of any tenders that do not provide an undertaking that the *reserve* and *non-scheduled reserve* has not and will not be offered in the *market* except on terms agreed with NEMMCO, taking into account:
  - whether the commercial requirements are met;
  - whether the tender is credible (is it likely that the tenderer can deliver the offered reserves); and
  - the optimal combination of contracts to deliver the *reserves* and *non-scheduled reserves* necessary to meet the shortfall.
- select the tenders that NEMMCO considers to be the optimal portfolio of *reserve contracts* and *non-scheduled reserve contracts*;
- monitor the *medium term PASA* to determine if there have been any changes since the tenders were prepared and evaluated;
- monitor the *EAAP* to inform itself on any changes since tenders were prepared;
- must not enter into *reserve contracts* and *non-scheduled reserve contracts* more than nine months prior to the date by which NEMMCO expects, acting reasonably, that the reserves and non-scheduled reserves under those contracts may be required to ensure *reliability of supply*;



- giving consideration to including an early termination clause in the event that the capacity is not needed; and
- within one month after entering into a contract for *reserves* or for *non-scheduled reserves*, publish the name of the counterparty to the contract and the volume and timing of reserve procured under the contract.

### **C.3.7 Factors to consider in assessing the cost effectiveness of exercising the RERM**

Any consideration of the cost effectiveness of exercising the *RERM* should be done by *NEMMCO* in consultation with the relevant *participating jurisdictions*. The factors that would be relevant to this consideration and consultation are:

- the cost (fixed and variable) of the reserve contracts and non-scheduled reserve contracts for the amount of reserves or non-scheduled reserves delivered;
- what extra payment is required to be made if the contracted reserves or non-scheduled reserves are actually used;
- the penalty that *NEMMCO* may need to undertake to provide if terminates the contract early;
- the nature of the reserves being offered including:
  - how firm the capacity is;
  - the minimum and maximum time the *reserves* could be *dispatched* under *reserve contracts* or *non-scheduled reserves activated* under *non-scheduled reserve contracts*; and
  - how much notice is required to *dispatch* a particular *reserve* under a *reserve contract* or *activate* a *non-scheduled reserve* under a *non-scheduled reserve contract* (for example, some *loads* require 24 hours notice so they can adjust shifts for their processes, others may only require a few hours) with the objective being less notice requirements means more flexibility and therefore, more cost effectiveness;
- the duration of the projected capacity shortfall;
- the size of the projected capacity shortfall, in MW (as for a few MW it may be decided just to accept the risk); and
- the likelihood of the proposed capacity shortfall being resolved.

### **C.3.8 Miscellaneous**

Clauses 3.15.10(a)(6) and (7) provide for additional matters which the Reliability Panel may make RERM guidelines about. Such matters have not been included in this version of the RERM guidelines.