

Mr John Pierce
Chairman
Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

Dear Mr Pierce

**Governance arrangements and operationalization of the Reliability
Standard and Reliability Settings**

I am writing to you regarding actions arising from the Ministerial Council on Energy's (MCE) response, published on 8 June 2012 by the Standing Council on Energy and Resources (SCER), to the Australian Energy Market Commission's (AEMC) Final Report for the *Review of the Effectiveness of NEM Security and Reliability Arrangements in light of Extreme Weather Events*.

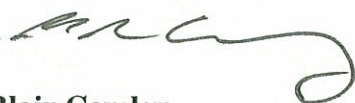
In the response, the MCE recognised that full implementation of the agreed changes to the governance arrangements for determining the Reliability Standard and Reliability Settings, including the operationalization of the reliability parameters, requires specific amendments to the National Electricity Rules. The purpose of this letter is therefore to formally request, on behalf of the SCER that the AEMC initiate a Rule change process to facilitate:

- i. the agreed changes to the governance arrangements around the process for reviewing and determining the Reliability Standard and Reliability Settings. This includes changes to how and where the reliability parameters are referenced in the Rules; and
- ii. a new provision to oblige the Australian Energy Market Operator to develop a Reliability Standard Implementation Guideline, and consequential Rule amendments to give full effect to this guideline, to allow for the effective implementation of the reliability parameters in accordance with various operational processes.

The attached documents provide additional information in support of this request.

Should you have any further enquiries, please contact Ms Kristen Palmer, Manager SCER Secretariat, on (02) 6213 6107.

Sincerely



Blair Comley
Chair

Standing Council on Energy and Resources Senior Committee of Officials
7 May 2013

**Governance arrangements and
operationalization of the Reliability Standard
and Reliability Settings**

**Amendments of the National Electricity
Rules – Chapters 3, 4, 8 and 10**

Rule change request and proposal

3 May 2013

1) Name and address of rule change request proponent

Mr Blair Comley
Chair
Standing Council on Energy and Resources, Senior Committee of Officials
Standing Council on Energy and Resources Secretariat
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2) Description of the proposed rules

The rule change proposal (see **Attachment A**) seeks to amend the existing rules setting out the governance arrangements for determining and setting the Reliability Standard and Reliability Settings, including how the Reliability Standard is managed and operationalized by the Australian Energy Market Operator (AEMO). The rule change proposal is consistent with the Ministerial Council on Energy's (MCE) policy positions set out in its response to the Australian Energy Market Commission's (AEMC) Final Report for the *Review of the Effectiveness of NEM Security and Reliability Arrangements in light of Extreme Weather Events* (the Review).¹

Specifically the rule change proposal seeks to amend a number of provisions located in:

- Chapter 3 of the Rules to implement the arrangements and processes for the AEMC to review and determine the Reliability Standard and the Reliability Settings;
- Chapters 3 and 4 of the Rules to oblige AEMO to develop, consult on and publish the "Reliability Standard Implementation Guidelines" (RSIG). The RSIG will guide how AEMO operationalizes the Reliability Standard determined by the AEMC. This provision also requires the RSIG to nominate "Reliability Adequacy Requirements" (RAR) which are parameters to be used in AEMO's various forecasting tools, allowing for a different form of parameter to be applied to different forecasting timeframes;
- Chapter 8 of the Rules to clarify that the Reliability Panel is no longer responsible for determining and publishing the Reliability Standard; and
- Chapter 10 of the Rules to introduce new definitions and amend existing definitions in the Rules.

The objective of the rule change proposal is to reduce uncertainty and improve transparency regarding the Reliability Standard and Reliability Setting process, including the operationalization of these parameters. Maintaining consistency and allowing for a single decision-maker will reduce complexity of the decision making processes and provide important signals for long-term investment in capacity to

¹ See <http://www.scer.gov.au/workstreams/energy-market-reform/extreme-weather-events/>

market participants. The Standing Council on Energy and Resources (SCER) considers that this is consistent with the Australian Energy Market Agreement (AEMA), and the National Electricity Objective (NEO).

A draft of the proposed rule is attached to this proposal for consideration.

Background to the proposed rules

On 28 April 2009, the MCE directed the AEMC to conduct the Review. The Terms of Reference for the Review required the AEMC, in the context of extreme weather events such as droughts, heatwaves, storms, floods and bushfires, to:

- examine the current arrangements in the National Electricity Market (NEM) for maintaining the security and reliability of supply to consumers of electricity and assess the capability of those arrangements to maintain adequate, secure and reliable supply;
- provide advice on the effectiveness of, and options for, cost-effective improvements to current security and reliability arrangements;
- if appropriate, identify any cost-effective changes to the market frameworks that may be available to mitigate the frequency and severity of threats to the security and reliability of the power system; and
- provide advice on any further cost-effective measures that could be taken in the short-term that would impact on system reliability for the summer of 2009-10.

As set out in the Terms of Reference for the Review, the AEMC released its First Interim Report on 29 May 2009. The First Interim Report set out recommendations around measures that could be taken to enhance system reliability for the summer of 2009-10.

Following its consideration of the First Interim Report, the MCE expanded the Terms of Reference for the Review and sought further advice on the Reliability Standard and the market mechanisms to achieve that standard.

On 31 May 2010, the AEMC provided its Final Report of the Review to the MCE. The Final Report concluded that there are a number of key areas where the existing framework and mechanisms could be improved to enable consumer expectations for quality of electricity supply to be maintained in a future in which the frequency and/or severity of extreme weather events could be greater. These recommendations were in several broad areas, including: technical performance and power system security; whole of power system reliability; the Reliability Standard; the suitability of the Market Price Cap (MPC) and other reliability setting mechanisms; governance arrangements for determining the Reliability Standard and Reliability Settings; and processes for determining the Reliability Standard and Reliability Settings.

3) Nature and scope of the issues the proposed rules will address

Summary of issues the proposed rules will address

Currently under clause 8.8.3(a)(1) of the National Electricity Rules (the Rules), the Reliability Panel is responsible for determining the Reliability Standard. The Reliability Panel is also responsible, in accordance with paragraph 3.9.3A of the Rules, for the review of the Reliability Standard and Reliability Settings (being the MPC, the Cumulative Price Threshold (CPT), the Market Floor Price (MFP), and the Administered Price Cap (APC)). Following completion of the review of the Reliability Settings the Reliability Panel may submit a rule change request to the AEMC to amend the Rules to change the Reliability Settings.

In its Final Report, the AEMC concluded that this governance arrangement, with separate decision making bodies for the Reliability Standard and Reliability Settings, may restrict the ability of the NEM to respond efficiently to a possible increase in the frequency and/or severity of extreme weather events. The AEMC found that a lack of high level guidance in the Rules for setting the Reliability Standard and Reliability Settings can lead to inefficiencies and restrictions on what information can be taken into account as part of the decision making process. Further, the AEMC also noted the presence of existing market participants on the Reliability Panel may give rise to perceived or actual conflicts of interest leading to outcomes which favour incumbent parties.

This rule change proposal seeks to address these issues by ensuring that the reliability parameters are determined under a consistent process and by a single decision making body. Maintaining consistency and allowing for a single decision-maker will reduce complexity of the existing processes and ensure that there is appropriate alignment between the Reliability Standard and the Reliability Settings. SCER considers that this approach is consistent with the AEMA and NEO.

In relation to the management and operationalization of the Reliability Standard, the rule change proposal clarifies that AEMO is the appropriate body to make reliability operational decisions, including to initiate the Reliability and Emergency Reserve Trader (RERT) arrangements and to review and amend processes to assess the adequacy of generation reserves to meet the Reliability Standard, when necessary, consistent with its current roles under the Rules. Although the concept of Minimum Reserve Levels (MRLs) is currently used as the primary means of applying the Reliability Standard in operational timeframes, the proposed change provides flexibility for the evolution of this process in allowing the development of more appropriate methods of assessing reliability in different forecast timeframes, including through the introduction of a new and transparent governance regime in the Rules to manage implementation of the Reliability Standard.

Nature and scope of issues

Form of the Reliability Standard and Reliability Settings

Currently the Reliability Standard is published in a schedule on the Reliability Panel's website; the APC is published in a schedule on the AEMC's website; and the MPC, MFP and CPT are published in the Rules. This rule change proposal therefore introduces a new provision to require that the Reliability Standard and Reliability

Settings be specified and given effect in a schedule referred to in the Rules (see clause 3.9.3A of the rule change proposal).

SCER considers that by specifying these parameters in a schedule, able to be amended by the AEMC following a specified review process, the overall method for amending these parameters will be streamlined, primarily as a result of the removal of the need for a rule change proposal to trigger an amendment to the MPC, CPT and MFP. Providing all of the parameters in one location will also improve accessibility for market participants.

Reviewing and amending Reliability Standard and Reliability Settings

Currently, the Reliability Standard is determined by the Reliability Panel, whilst the other Reliability Settings are determined by the AEMC, on the advice of the Reliability Panel. SCER considers that the NEM reliability parameters should be determined under a consistent process and by a single decision making body. This is particularly important given that these parameters are of an economic and market nature and there is a need to review and vary these as a package. Reviewing the reliability parameters as a package would provide consistency and certainty for existing and potential market participants as well as end-use customers.

Under the National Electricity Law (NEL), the AEMC is responsible for rule-making and energy market development at a national level. In its energy market development role, the AEMC can make decisions of an economic nature that affect the national energy markets. The decisions concerning the reliability parameters are decisions of an economic and market framework nature and for this reason relate to issues of market design. Therefore, given the nature of the decisions to be made, SCER considers the AEMC is the appropriate body within the existing energy market governance framework to make the decisions concerning the Reliability Standard and Reliability Settings. SCER considers the expertise of the Reliability Panel would better serve the process of determining the reliability parameters in an advisory role, noting that the Reliability Panel will continue to report against the Reliability Standard as part of its Annual Market Performance Review.

The proposed approach would ensure that there is a single decision-maker responsible for decisions relating to the reliability parameters, which would streamline and enhance the efficiency of the process relating to the determination of the reliability parameters. The proposed approach would also ensure that decisions to determine the reliability parameters are made in an integrated process. The rule change proposal therefore seeks to amend Chapter 3 of the Rules to implement the arrangements and processes for the AEMC to review and determine the Reliability Standard and the Reliability Settings.

The proposed rule provisions (see 3.9.3B and 3.9.3C) provide the flexibility for the AEMC to elect whether to conduct a reliability standard review and reliability settings review concurrently, or a reliability settings review only, if the AEMC determines that no change to the reliability standard is necessary. However, it is also feasible that if a reliability standard review is undertaken and no change to the reliability standard is

determined, then no immediate review of the reliability settings would need to occur. Under the current Rules, these reviews are combined.

The intention of the proposed provisions is for the AEMC to undertake a transparent consultation process, including the publication of a final report, in accordance with the relevant provisions of the Rules Consultation Procedures (consistent with the existing rule provisions)² which will detail the reasons for the determination.

SCER also proposes the introduction of a new provision to ensure that the processes that the AEMC must follow in reviewing and setting the Reliability Standard and Reliability Settings should be set out in a guideline. This guideline is to be developed by the AEMC in accordance with the Rules Consultation Procedures, and will set out the principles and assumptions to be applied in setting the Reliability Standard and Reliability Settings. SCER considers that this is necessary as the AEMC's determination of reliability parameters will not be carried out in accordance with its ordinary statutory rule-making powers but instead through an independent decision to amend a schedule (referred to in the Rules). The requirements around this guideline are specified in clause 3.9.3(D) of the rule change proposal.

To enact the proposed provision, a number of consequential changes are also required in Chapter 8 and to the relevant definitions in the Glossary in Chapter 10 of the Rules.

Arrangements for reliability operational decisions

SCER considers that AEMO remains the appropriate body to make operational decisions relating to the reliability of supply in the NEM, including to instigate the RERT, and to develop, review and amend means of applying the Reliability Standard to operational processes used in the NEM, when necessary. AEMO currently determines and amends MRLs for each NEM region as a means of applying the Reliability Standard to forecasting timeframes over a number of years. However, SCER understands that AEMO currently uses tools and processes other than MRLs to apply the Reliability Standard operationally, including more probabilistic techniques that have been developed to better reflect the uncertainties that occur with increasing forecast timeframes.

So as not to constrain AEMO in the development of more sophisticated techniques for managing to the Reliability Standard, SCER proposes the introduction of a new Rule provision that requires AEMO to produce a high level guideline for the implementation of the Reliability Standard (see proposed clause 3.9.3E). The proposed provision will oblige AEMO to develop, consult on and publish Reliability Standard Implementation Guidelines (RSIG). These will guide how AEMO operationalizes the Reliability Standard, improving transparency around the process, and keeping it relevant to the needs of the NEM and the various stakeholders that depend on it. The proposed provision also requires the RSIG to nominate Reliability Adequacy Requirements (RAR) which are parameters to be used in AEMO's various

² See 3.9.3A of the Rules

forecasting processes.³ The methodology to be used by AEMO in determining the RARs will therefore be a primary output of the RSIG.

Once the methodology to be used by AEMO for determining the RARs has been set in the RSIG, AEMO will be required to apply the methodology to calculate the RARs and to update them on a routine and transparent basis. By way of transition, current arrangements for implementation of the Reliability Standard will be able to transfer smoothly to the new framework, with current MRLs becoming RARs, and the methodology for determining them being set out in the RSIG.

In summary, the practical workings of the new arrangements for reliability operational decisions will be as follows:

- The RSIG, determined by AEMO, will be a document describing the techniques AEMO will follow in operationalizing the reliability standard. It would be refreshed on a periodic basis through a process (probably not more often than every three years) where AEMO would propose and consult on improved techniques with stakeholders.
- The RARs will be parameters that are developed in accordance with the RSIG. What AEMO currently describes as "Minimum Reserve Levels" (MRLs) would be an example of RARs, although other forms of parameter may emerge as other techniques are developed. The RARs would be refreshed as the power system itself changes even if the RSIG does not change, e.g. following the resampling of generator forced outage rates. Such refreshing would be expected one to two years apart. The RARs would be published on AEMO's website.
- The RARs would be operationalised in tools that are routinely used by AEMO to inform the market, such as the Short Term Projected Assessment of System Adequacy (PASA).

To implement the proposed provision, a number of consequential changes are required in Chapters 3 and 4 of the Rules to maintain consistency and avoid duplication of provisions.

Application of the proposed rules across the National Electricity Market jurisdictions

The matters addressed in the rule change proposal are already undertaken at a national institutional level. There will be no corresponding changes to jurisdictional arrangements.

³ Different forecasting processes are currently used for different NEM timeframes: pre-dispatch operates 1-2 days ahead, Short Term PASA operates to 7 days ahead; Medium Term PASA and EAAP operate to a two-year forecasting timeframe, and the ESOO applies to a 10 year forecasting timeframe, and the NTNDP stretches to 20 years. Each of these processes takes into account the Reliability Standard, but different technical approaches are likely to be more appropriate in each of them, with more probabilistic methods being better suited than deterministic approaches for longer term forecasting periods. The development of new techniques is expected to be a continual activity that can improve these processes through time.

How the proposed rules would address the issues identified

As discussed above, currently the Reliability Standard is determined by the Reliability Panel, whilst the other Reliability Settings are determined by the AEMC, on the advice of the Reliability Panel. These NEM reliability parameters should be determined under a consistent process and by a single decision making body. This is particularly important given that these parameters are of an economic and market nature and there is a need to review and vary them as a package.

The objective of the rule change proposal therefore is to reduce uncertainty and improve transparency regarding the Reliability Standard and Reliability Settings process, including the operationalization of these parameters. Maintaining consistency and allowing for a single decision-maker would reduce complexity of the existing decision making processes and provide important signals for long-term investment in capacity by market participants.

Similarly, to provide a complete package in relation to the Reliability Standard process (from settings to operationalization), it is equally important to set down a clear allocation of responsibility for interpreting and applying the reliability standard in the context of the numerous market processes used in the NEM. The Rules currently have some obligations set down for AEMO to determine short-term and medium-term reserve requirements, such as in the sections relating to PASA processes⁴, however, there is no process set out in the Rules for AEMO to determine these requirements. To date, AEMO has interpreted them by determining MRLs, and exercised various types of consultation with the Reliability Panel and industry in doing so.

Subsequently the development of additional approaches to reliability assessment such as the energy adequacy assessment projection (EAAP) methodology have presented the opportunity to use more comprehensive methods for the assessment of reliability against the Reliability Standard under the varying NEM forecasting timeframe requirements under the Rules. This has led to two different methodologies being used by AEMO under the Rules in relation to 24 month forecast requirements (albeit for slightly different purposes) while the Rules are silent on application of the Reliability Standard to other forecasting processes relevant to the NEM, such as the Electricity Statement of Opportunities.

The introduction of an obligation for AEMO to develop and publish the RSIG will therefore serve the following purposes:

- it clearly allocates responsibility to AEMO for determining a means of applying the Reliability Standard in every NEM forecasting timeframe it is required to address under the Rules;
- it provides sufficient flexibility for the Reliability Standard to be applied operationally through time and across the different NEM forecasting timeframes so that it best suits the form of standard set by the AEMC, and the situation to

⁴ See clauses 3.7.2 (c)(2) and 3.7.3(d)(2)

which it is being applied. This avoids being locked into a single approach when more suitable approaches become available;

- it sets out a transparent structure and process that AEMO must follow in establishing and changing the RSIG and the associated RARs. This contrasts with current arrangements where AEMO carries out the process of implementing the NEM Reliability Standard, including the determination of MRLs, but there is no regime set out in the Rules to clearly define that responsibility or to govern the way in which AEMO carries it out;
- the operational governance regime is appropriately matched with the governance regime applying to the AEMC for setting the standard and the associated settings, as it allows AEMO to make changes to NEM processes to adapt to any changes made by the AEMC to the Reliability Standard or Reliability Settings without the need for a Rule change; and
- it provides for a smooth transition from current practice whereby the MRLs currently determined by AEMO can become RARs within the new framework, and the methodology for determining them can be set out in the RSIG.

4) How the proposed rules will or are likely to contribute to the achievement of the National Electricity Objective

The NEO is set out in section 7 of the NEL. The NEO states:

“The objective of this Law is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:

- a) price, quality, safety, reliability and security of supply of electricity; and
- b) the reliability, safety and security of the national electricity system.”⁵

The rule change proposed would contribute to the achievement of the NEO as maintaining consistency and allowing for a single decision-maker will reduce complexity of the decision making processes and provide important signals for long-term investment in capacity to market participants.

The NEL (set out in the *National Electricity (South Australia) Act 1996*) provides for the regulation of the wholesale electricity market and the economic regulation of electricity network services. The national electricity legislative framework reflects the 2004 Council of Australian Governments AEMA (as amended).⁶ This energy market governance framework was designed to:

- improve the quality, timeliness of decision-making for, and to strengthen and streamline governance of the NEM;

⁵ Section 7 of the National Electricity Law.

⁶ See <http://www.scer.gov.au/files/2012/05/Final-AEMA-as-amended-Oct-2011.pdf>

- provide an enhanced framework of accountability to governments and market participants through the separation of functions to avoid perceptions of conflicting interests;
- provide for clear consultation, reporting obligations, transparency and avenues of appeal; and
- guide future energy policy decision-making by jurisdictions and to provide increased policy certainty for energy users and for the energy sector.

The AEMC found in the Review that current processes for determining the Reliability Standard and Reliability Settings do not promote consistency across the electricity supply chain, consistent with obligations under the AEMA. This has direct implications for the achievement of the NEO and the current process may frustrate the timeliness of decision making processes which are relevant to the reliability and security of the market.

SCER considers that the proposed new process for determination and implementation of the Reliability Standard and Reliability Settings strike an improved balance between transparency through clear responsibilities and governance under the Rules, and flexibility for arrangements to be changed using a well-defined process.

5) Expected costs, benefits, and impacts of the proposed rules

Broadly, the rule change proposal is expected to provide net benefits as a result of clarifying the processes under the Rules. Notable anticipated benefits include:

- improved transparency around the Reliability Standard and Reliability Setting review and determination processes, including how the Reliability Standard is operationally applied;
- improved accountability around the Reliability Standard and Reliability Setting review and determination processes;
- improved consistency and timeliness around the Reliability Standard and Reliability Setting review and determination processes; and
- enhanced investor certainty.

As the impacts associated with changes to the governance arrangements are not readily measurable it is not possible to provide detailed quantitative cost/benefit analysis. However, the discussion below outlines a number of broad costs and benefits that can be expressed at a qualitative level.

Electricity generators in the NEM

The rule change proposal is unlikely to impose additional costs on the generator sector. SCER notes that any reporting obligations will remain consistent with current practices under the Rules. At a qualitative level SCER notes that the rule change proposal should reduce uncertainty and improve transparency regarding the Reliability Standard and Reliability Setting process. This will be achieved through the standardisation of processes that the AEMC must follow in reviewing and setting

the reliability parameters with reference to a guideline prescribed in the Rules (see proposed clauses 3.9.3D) which will be developed by the AEMC in accordance with the Rules consultation procedures.⁷ This obligation to consult would provide an opportunity for generators (and other key stakeholders, such as consumers and jurisdictions) to contribute to the development of the guideline and the principles the AEMC will adhere to.

Further, the development of the RSIG provides an opportunity for market participants to engage with AEMO in determining how it operationalizes the reliability standard. This should assist market understanding of the processes, and lead to gains through better sharing of ideas and understandings of limitations.

Distribution Network Service Providers (DNSPs) and Transmission Network Service Providers (TNSPs)

The rule change proposal does not introduce any additional costs on DNSPs or TNSPs. The implications of this rule change proposal are more relevant to the generation sector, while transmission and distribution sectors will interact with the resulting processes as they currently do.

Jurisdictional governments and regulators

The rule change proposal does not introduce any additional costs on jurisdictional governments or jurisdictional regulators as the governance arrangement and processes addressed in this proposal are already undertaken at a national institutional level. However, consistent with the above, the rule change proposal should reduce uncertainty and improve transparency regarding the Reliability Standard and Reliability Setting process. Key stakeholders will have the opportunity to engage with the AEMC in the development of the guideline for determining the Reliability Standard and Reliability Settings.

The AEMC and the Reliability Panel

Currently the AEMC provides secretariat support to the Reliability Panel when it conducts the reliability standard and settings review. Changing the review responsibility from the Reliability Panel to the AEMC is therefore unlikely to have any impact on overall costs incurred by the AEMC. Consequently, costs incurred by the Reliability Panel will be lower under the new arrangements.

AEMO

AEMO already applies the NEM Reliability Standard to various NEM forecasting timeframes. MRLs are determined and used for some processes such as the short-term and medium-term PASA. MRLs have also been used to date in the ESOO. Probabilistic approaches are used in the EAAP and in longer-term planning. Establishment of the RSIG by AEMO will require specific consultation with stakeholders, and while this might involve more effort in the short term due to the need to develop a new document and to engage with stakeholders, it is expected to be

⁷ S8.9 of the NER

comparable to the process currently carried out to update the existing MRLs. The initial version of the RSIG will most likely transition current practice into the new regime.

The RSIG provides a number of benefits that have been articulated in the discussion in Section 4 above. These include:

- bringing the process of operationalizing the Reliability Standard into the governance of the Rules, and clearly assigning AEMO with responsibility for doing this, instead of the Rules being silent in relation to responsibility and governance;
- making the process of operationalizing the Reliability Standard more transparent to the market and to jurisdictions;
- engaging the market through consultation on the operationalization, leading to both better understanding and the potential to explore improvements;
- allowing more flexibility for fit-for-purpose approaches to be used in the various forecasting timeframes, each of which might warrant a different approach due to different levels of uncertainty (ultimately this should result in a more accurate and accessible output);
- through the use of more accurate reliability measures as they are developed, reducing the risk of false-positive forecasts of reliability issues that trigger unnecessary and costly intervention by AEMO to restore reliability, and reducing the risk of false-negative indications which result in unforeseen violations of the Reliability Standard; and
- by creating a set of processes and parameters that can evolve over time, enabling AEMO to improve its approach to assessing reliability as better tools are developed. This strikes an appropriate balance between transparency and flexibility.

The AER

This rule change proposal does not have any direct implications for the AER.

End use consumers

The processes associated with this rule change proposal will not impose additional costs on end use consumers. However, the outcomes associated with these processes are likely to have a positive impact in terms of institutional accountability around the decision making process, as well the timeliness of decisions that affect the market, and ultimately consumers.

6) Summary of Consultation

As directed by the MCE, the AEMC undertook extensive stakeholder consultation on the findings and draft recommendations provided in the Second Interim Report for the Review. Stakeholder comments were taken into account in the AEMC forming its final policy advice to the MCE for the Final Report.

This rule change proposal has been developed in consultation with members of the SCER, the AEMC, and AEMO.

7) Timing

The rule change proposal should ideally be implemented by end of 2013.

3 May 2013

Amendment of National Electricity Rules

The National Electricity Rules are amended as set out in Schedule 1.

Schedule 1 Amendments of the National Electricity Rules – Chapters 3, 5, 8 and 10

[1] Clause 3.7 Projected Assessment of System Adequacy

Omit clause 3.7 in its entirety, including the heading, and substitute:

3.7 Projected Assessment of System Adequacy

3.7.1 Administration of PASA

- (a) *AEMO* must administer medium term and short term *projected assessment of system adequacy processes* to be known as *PASA*.
- (b) The *PASA* is a comprehensive program of information collection, analysis, and disclosure of medium term and short term *power system security* and reliability of *supply* prospects so that *Registered Participants* are properly informed to enable them to make decisions about *supply*, demand and *outages* of *transmission networks* in respect of periods up to 2 years in advance.
- (c) On a weekly basis *AEMO* must:
 - (1) collect and analyse information from all *Scheduled Generators*, *Market Customers*, *Transmission Network Service Providers* and *Market Network Service Providers* about their intentions for:
 - (i) *generation*, *transmission* and *market network service* maintenance scheduling;
 - (ii) intended *plant* availabilities;
 - (iii) *energy constraints*;
 - (iv) other *plant* conditions which could materially impact upon *power system security* and reliability of *supply*; and
 - (v) significant changes to *load* forecasts previously notified to *AEMO*,for the following 24 months;
 - (2) prepare the *unconstrained intermittent generation forecasts* for the following 24 months; and

- (3) following analysis and assessment of the information referred to subparagraphs (1) and (2), *publish* information that will inform the market regarding forecasts of supply and demand:
 - ~~(i) assist *Registered Participants* to plan any scheduled work on plant; and~~
 - ~~(ii) inform the market of possible power system security and reliability of supply problems.~~
- (d) *AEMO* must use its reasonable endeavours to ensure that it provides to ~~*Registered Participants*~~ sufficient information to ~~allow *Registered Participants* to undertake maintenance and outage planning without violating power system security and reliability of supply and to allow the market to operate effectively with a minimal amount of intervention by *AEMO*.~~

The *market's* achievement of the *reliability standard* involves the participation of many parties, including unregistered parties such as demand-side responders. The existing reference targeting only *registered participants* scheduling outages reflects a historic circumstance that the NEM has moved beyond. This existing subclause could also constrain the *reliability standard implementation guidelines* in determining their appropriate scope (see 3.9.3E).

3.7.2 Medium term PASA

- (a) The *medium term PASA* covers the 24 month period commencing from the Sunday after the *day* of publication with a daily resolution. Every week, *AEMO* must review and *publish* the outputs of the *medium term PASA* in accordance with the *timetable*.
- (b) *AEMO* may *publish* additional updated versions of the *medium term PASA* in the event of *changes* which, in the judgment of *AEMO*, are materially significant ~~and should be communicated to *Registered Participants*.~~

The reference to "*Registered Participants*" is deleted on the same basis as above, and recognising that the obligation to *publish* is more general.

- (c) The following *medium term PASA inputs* are to be prepared by *AEMO*:
 - (1) forecast *load* information for each *region* which is:
 - (i) the 10% probability of exceedence daily *peak load*, most probable daily *peak load* and time of the peak on the basis of past trends, day type and special events including all forecast *scheduled load* and other *load* except for pumped storage *loads*;
 - (ii) subsequently to be adjusted by an amount anticipated in the forecast as *scheduled load* by *load* bidders; and

- (iii) an indicative half hourly *load* profile for each day type for each *region* for each month of the year;
- ~~(2) reserve requirements determined in accordance with the medium term capacity reserve standards;~~
- (32) forecast *network constraints* known to AEMO at the time;
- (43) an *unconstrained intermittent generation forecast* for each *semi-scheduled generating unit* for each day.

Any *capacity reserve* standard, and the way it is presented in forecasting, will now be determined by AEMO through the *Reliability Standard Implementation Guidelines*. This reference to reserve requirements is deleted so as to not constrain the process of implementing the *Reliability Standard* through the *Reliability Standard Implementation Guidelines*.

- (d) The following *medium term PASA inputs* must be submitted by each relevant *Scheduled Generator* or *Market Participant* in accordance with the *timetable*:
 - (1) *PASA availability* of each *scheduled generating unit*, *scheduled load* or *scheduled network service* for each *day* taking into account the ambient weather conditions forecast at the time of the 10% probability of exceedence *peak load* (in the manner described in the procedure prepared under paragraph (g)); and
 - (2) *weekly energy constraints* applying to each *scheduled generating unit* or *scheduled load*.

Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (e) *Network Service Providers* must provide to AEMO an outline of planned *network outages* in accordance with the *timetable* and provide to AEMO any other information on planned *network outages* that is reasonably requested by AEMO to assist AEMO to meet its obligations under paragraph (f)(6).

Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (f) AEMO must prepare and *publish* the following information in respect of each *day* (unless otherwise specified in subparagraphs (1) to (6)) covered by the *medium term PASA* in accordance with clause 3.13.4(a):
 - (1) forecasts of the 10% probability of exceedence *peak load*, and most probable *peak load*, excluding the relevant aggregated MW

allowance referred to in subparagraph (2), and adjusted to make allowance for *scheduled load*;

~~(1A) reserve requirements determined in accordance with the *medium term capacity reserve standards*;~~

The *Reliability Standard Implementation Guidelines* will describe how reserve requirements (or other reliability criteria) are to be determined, and the *Reliability Adequacy Requirements* will propagate those values into forecasting tools. *Reliability Adequacy Requirements* will be published by AEMO under clause 3.9.3E, so it is not necessary to publish with each release of the PASA. Furthermore, the Reliability Adequacy Requirement might be a variable that cannot be quantified until the PASA has been undertaken.

With these changes the defined term "*medium term capacity reserve standards*" is no longer used.

- (2) the aggregated MW allowance (if any) to be made by AEMO for *generation from non-scheduled generating systems* in each of the forecasts of the 10% probability of exceedence *peak load* and most probable *peak load* referred to in subparagraph (1);
- (3) in respect of each of the forecasts of the 10% probability of exceedence *peak load* and most probable *peak load* referred to in subparagraph (1), a value that is the sum of that forecast and the relevant aggregated MW allowance referred to in subparagraph (2);
- (4) forecasts of the most probable weekly *energy* for each *region*;
- (5) aggregate *generating unit PASA availability* for each *region*;
- (5A) aggregate capacity for each *region*, after allowing for the impact of *network constraints*, that can be *generated* continuously, calculated by adding the following categories:
 - (i) the capacity of *scheduled generating units* in the *region* that are able to operate at the *PASA availability*; and
 - (ii) the forecast *generation of semi-scheduled generating units* in the *region* as provided by the *unconstrained intermittent generation forecasts*;
- (5B) aggregate capacity for each *region*, after allowing for the impact of *network constraints*, that cannot be *generated* continuously at the *PASA availability* of the *scheduled generating units* in the *region* due to specified weekly *energy constraints*; and
- (6) identification and quantification of:
 - (i) any projected *violations of power system security*;
 - (ii) any projected violations of the reliability adequacy requirements;

- (ii) ~~any days on which low reserve or lack of reserve conditions are forecast to apply;~~
- (iii) ~~where a projected supply deficit in one region can be supplemented by a surplus in another region (dependent on forecast interconnector transfer capabilities);~~

These changes allow the *Reliability Standard Implementation Guidelines* and *Reliability Adequacy Requirements* to specify how *reliability* is assessed, but periods of shortfall will still be *published*.

- (iviii) forecast *interconnector* transfer capabilities and the discrepancy between forecast *interconnector* transfer capabilities and the forecast capacity of the relevant *interconnector* in the absence of *outages* on the relevant *interconnector* only; and
- (iv) when and where *network constraints* may become binding on the *dispatch* of *generation* or *load*.
- (g) AEMO must ~~document~~ *publish* the procedure it uses for preparation of the *medium term PASA* and ~~make it available to all Registered Participants on a cost recovery basis.~~

This recognises the broader use of *PASA* beyond *registered participants*. *Reliability Adequacy Requirements* will be *published* under clause 3.9.3E.

3.7.3 Short term PASA

- (a) The *short term PASA* must be *published* at least daily by AEMO in accordance with the *timetable*.
- (b) The *short term PASA* covers the period of six *trading days* starting from the end of the *trading day* covered by the most recently *published pre-dispatch schedule* with a *trading interval* resolution.
- (c) AEMO may *publish* additional updated versions of the *short term PASA* in the event of *changes* which, in the judgement of AEMO, are materially significant ~~and should be communicated to Registered Participants.~~

Deleted on the same basis as earlier deletions of “*Registered Participants*”. The *PASA* process now has a broader audience.

- (d) The following *short term PASA inputs* are to be prepared by AEMO:
 - (1) forecast *load* information for each *region* which is to include:
 - (i) the 10% probability of exceedence half-hourly *load* and most probable half hourly *load* on the basis of past trends, day type, and special events; and
 - (ii) all *scheduled load* and other *load* except for pumped storage *loads*,

which must subsequently be adjusted in accordance with *dispatch bids for scheduled load*;

- (2) ~~reserve requirements for each region determined in accordance with the short term capacity reserve standards;~~

The *Reliability Standard Implementation Guidelines* will describe how *reserve* requirements (or other *reliability* criteria) are to be determined, and the *Reliability Adequacy Requirements* will propagate those values into forecasting tools. *Reliability Adequacy Requirements* will be *published* under clause 3.9.3E, and it is not necessary to *publish* with each release of PASA.

With these changes the defined term "*short term capacity reserve standards*" is no longer necessary. Note the defined term is actually missing from the current glossary.

- (32) forecast *network constraints* known to AEMO at the time; and
- (43) an *unconstrained intermittent generation forecast* for each *semi-scheduled generating unit* for each *trading interval*.
- (e) The following *short term PASA inputs* must be submitted by each relevant *Scheduled Generator* and *Market Participant* in accordance with the *timetable* and must represent the *Scheduled Generator's* or *Market Participant's* current intentions and best estimates:
- (1) *available capacity* of each *scheduled generating unit*, *scheduled load* or *scheduled network service* for each *trading interval* under expected *market* conditions;
 - (2) *PASA availability* of each *scheduled generating unit*, *scheduled load* or *scheduled network service* for each *trading interval*; and
 - (3) [Deleted]
 - (4) projected daily *energy* availability for *energy constrained scheduled generating units* and *energy constrained scheduled loads*.

Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (f) If AEMO considers it reasonably necessary for adequate *power system* operation and the maintenance of *power system security* and *reliability of supply*, *Registered Participants* who may otherwise be exempted from providing inputs for the PASA process must do so to the extent specified by AEMO.
- (g) *Network Service Providers* must provide to AEMO an outline of planned *network outages* in accordance with the *timetable* and provide to AEMO any other information on planned *network outages* that is

reasonably requested by *AEMO* to assist *AEMO* to meet its obligations under clause 3.7.3(h)(5).

Note

This clause is classified as a civil penalty provision under the National Electricity (South Australia) Regulations. (See clause 6(1) and Schedule 1 of the National Electricity (South Australia) Regulations.)

- (h) *AEMO* must prepare and *publish* the following information for each *trading interval* (unless otherwise specified in subparagraphs (1) to (5)) in the period covered by the *short term PASA* in accordance with clause 3.13.4(c):
- (1) forecasts of the most probable *load* (excluding the relevant aggregated MW allowance referred to in subparagraph (4B)) plus *reserve* requirement (as determined under clause 3.7.3(d)(2)), adjusted to make allowance for *scheduled load*, for each *region*;
 - (2) forecasts of *load* (excluding the relevant aggregated MW allowance referred to in subparagraph (4B)) for each *region* with 10% and 90% probability of exceedence;
 - (3) forecasts of the most probable *energy* (excluding the relevant aggregated MW allowance referred to in subparagraph (4B)) for each *region* and *trading day*;
 - (4) aggregate *generating unit* availability (excluding the relevant aggregated MW allowance referred to in subparagraph (4B)) for each *region*;
 - (4AA) aggregate capacity (excluding the relevant aggregated MW allowance referred to in subparagraph (4B)) for each *region*, after allowing for the impact of *network constraints*, that can be *generated* continuously, calculated by adding the following categories:
 - (i) the *available capacity* of *scheduled generating units* that are able to operate at the availability as notified to *AEMO* under paragraph (e)(1); and
 - (ii) the forecast *generation* of *semi-scheduled generating units* as provided by the *unconstrained intermittent generation forecasts*;
 - (4AB) aggregate capacity (excluding the relevant aggregated MW allowance referred to in subparagraph (4B)) for each *region*, after allowing for the impact of *network constraints*, that cannot be *generated* continuously at the *available capacity* referred to in subparagraph (4AA)(i) due to specified daily *energy constraints*; and
 - (4A) aggregate *generating unit PASA availability* (excluding the relevant aggregated MW allowance referred to in subparagraph (4B)) for each *region*;

(4B) the aggregated MW allowance (if any) to be made by AEMO for generation from *non-scheduled generating systems* in each forecast:

- (i) of the most probable *load* referred to in clause 3.7.3(h)(1); and
- (ii) referred to in clauses 3.7.3(h)(2), (3), (4), (4A), (4AA) and (4AB);

(4C) in respect of each forecast:

- (i) of the most probable *load* referred to in clause 3.7.3(h)(1);
- (ii) referred to in clauses 3.7.3(h)(2), (3), (4), (4A), (4AA) and (4AB),

a value that is the sum of that forecast and the relevant aggregated MW allowance (if any) referred to in clause 3.7.3(4B); and

(5) identification and quantification of:

- (i) any projected *violations of power system security*;
- (ii) any projected violations of the *reliability adequacy requirements*;
- ~~(ii) any trading intervals for which low reserve or lack of reserve conditions are forecast to apply;~~
- ~~(iii) where a projected supply deficit in one region can be supplemented by a surplus in another region (dependent on forecast interconnector transfer capabilities);~~

These changes allow the *Reliability Standard Implementation Guidelines* and *Reliability Adequacy Requirements* to specify how *reliability* is assessed, but periods of shortfall will still be published.

~~(iviii)~~ forecast *interconnector* transfer capabilities and the discrepancy between forecast *interconnector* transfer capabilities and the forecast capacity of the relevant *interconnector* in the absence of outages on the relevant *interconnector* only; and

(iv) when and where *network constraints* may become binding on the *dispatch* of generation or load.

- (i) In the event that in performing the *short term PASA AEMO* identifies any projected ~~low reserve or lack of reserve conditions~~ violations of the *reliability adequacy requirements* in respect of a *participating jurisdiction*, then AEMO must use its reasonable endeavours to advise the *Jurisdictional System Security Coordinator* for that *participating jurisdiction* of any potential requirements during such conditions to shed *sensitive loads*.

These changes allow the *Reliability Standard Implementation Guidelines* and *Reliability Adequacy Requirements* to specify how *reliability* is assessed, but periods of shortfall will still be acted upon.

- (j) *AEMO* must document publish the procedure it uses for preparation of the *short term PASA* and ~~make it available to all Registered Participants on a cost recovery basis.~~

Deleted on the same basis as earlier deletions of “*Registered Participants*”. The *PASA* process now has a broader audience.

[2] Clause 3.9.3A Reliability standard and reliability settings review

Omit clause 3.9.3A in its entirety, including the heading, and substitute:

3.9.3A Reliability standard and reliability settings schedule

- (a) The *reliability standard and reliability settings schedule* is a schedule which sets out the *reliability standard, reliability settings and annual index for the reliability settings*.
- (b) The *AEMC* must publish the first *reliability standard and reliability settings schedule* by ~~[insert commencement date of amending rule]~~ and there must be a *reliability standard and reliability settings schedule* at all times after that date.
- (c) The first *reliability standard and reliability settings schedule* must include the *reliability standard, reliability settings and annual index for the reliability settings* that applied immediately before ~~[insert commencement date of amending rule]~~.
- (d) After the first *reliability standard and reliability settings schedule* is published under paragraph (b) the *AEMC* may determine a new *reliability standard* by amending the *reliability standard and settings schedule* in accordance with the review process set out in clause 3.9.3B.
- (e) After the first *reliability standard and reliability settings schedule* is published under paragraph (b), the *AEMC* may determine new *reliability settings* or a new *annual index for the reliability settings* by amending the *reliability standard and settings schedule* in accordance with the review process outlined in clause 3.9.3C.

The intention is for the *reliability standard, reliability settings* (that is, the *market price cap, market floor price, cumulative price threshold and administered price cap*) and *annual index for the reliability settings* to be published in the *reliability standard and reliability settings schedule* published by the *AEMC*.

[3] Clause 3.9.3B Reliability standard and reliability settings review report

Omit clause 3.9.3B in its entirety, including the heading, and substitute:

3.9.3B Reliability standard review

- (a) By 30 April of each fourth year, commencing ~~insert year the date of the first reliability standard review must be after the commencement date of the amending rule~~, the AEMC must:
- (1) conduct a *reliability standard review*, which is a review of the *reliability standard*, in consultation with the *Reliability Panel*, *Registered Participants* and such other persons as the AEMC considers appropriate, in accordance with the *Rules consultation procedures*, *reliability standard guidelines*, and paragraphs (b) and (c).
 - (2) if, during a *reliability standard review*, the AEMC determines to make a new *reliability standard*, the AEMC must publish a notice of the determination on its website.
 - (3) A notice referred to in paragraph (a)(2) must include:
 - (i) the date of publication of the determination; and
 - (ii) the date on which the determination will take effect.
- (b) In conducting the *reliability standard review* the AEMC:
- (1) must have regard to the potential impact of any proposed change on:
 - (i) *spot prices*;
 - (ii) investment in the *National Electricity Market*;
 - (iii) the *reliability* of the *power system*;
 - (iv) *Market Participants* or potential *Market Participants*; and
 - (iv) end-use customers.
 - (2) must have regard to any value of customer reliability determined by AEMO which the AEMC considers to be relevant; and
 - (3) may take into account any other matters the AEMC considers relevant.
- (c) If, during a *reliability standard review*, the AEMC determines to amend the *reliability standard*, the AEMC must:
- (1) detail of all relevant *market conditions* and *circumstances* on which the determination is based; and

- (2) provide an assessment of whether the new *reliability standard* address the matters set out in clause 3.9.3B(b).

The intention is for the AEMC to elect whether to conduct a *reliability standard review* and *reliability settings review* concurrently, or a *reliability settings review* only, if the AEMC determines that no change to the *reliability standard* is necessary. However, it is also feasible that if a *reliability standard review* is undertaken and no change to the *reliability standard* is determined, then no immediate review of the *reliability settings* would need to occur.

The intention is for the AEMC to provide notice to the market, in publishing the date that the amended *reliability standard* will take effect on its website.

The intention is for the AEMC to have regard to a range of potential impacts, including for the market, *Market Participants*, future *Market Participants* and end-use customers.

The intention is for the AEMC to undertake a transparent consultation process, including the publication of a final report, in accordance with the relevant provisions of the *rules consultation procedures* (consistent with the existing rule provisions) which will detail the relevant conditions on which the determination is based.

[4] Clause 3.9.3C Reliability settings review

Insert new clause 3.9.3C:

3.9.3C Reliability settings review

- (a) By 30 April of each fourth year commencing ~~[insert year]~~ this year ~~must be the same as the year the first reliability standard is completed]~~, the AEMC must
- (1) conduct a *reliability settings review*, which is a review of the *reliability settings* and *annual index for the reliability settings*, in consultation with the *Reliability Panel*, *Registered Participants* and such other persons as the AEMC considers appropriate, in accordance with the *Rules consultation procedures*, *reliability setting guidelines*, paragraphs (b) to (g); and.
 - (2) if, during a *reliability settings review*, the AEMC determines to make any new *reliability settings* or *annual index* for the *reliability settings*, the AEMC must publish a notice of the determination on its website.
 - (3) a notice referred to in paragraph (a)(2) must include:
 - (i) the date of publication of the determination; and
 - (ii) the date on which the determination will take effect.

- (b) In conducting a *reliability settings review* the *AEMC* must review the following:
 - (1) the *market price cap*, including the manner of indexing the *market price cap*;
 - (2) the *cumulative price threshold*, including the manner of indexing the *cumulative price threshold*;
 - (3) the *market floor price*; and
 - (4) the *administered price cap*.
- (c) In conducting the *reliability settings review* the *AEMC*:
 - (1) must have regard to the potential impact of any proposed change on:
 - (i) *spot prices*;
 - (ii) investment in the *National Electricity Market*;
 - (iii) the *reliability* of the *power system*;
 - (iv) *Market Participants* or potential *Market Participants*; and
 - (iv) end use customers.
 - (2) must have regard to any value of customer reliability determined which the *AEMC* considers to be relevant; and
 - (3) may take into account any other matters the *AEMC* considers relevant.
- (d) The *AEMC* may only determine a *market price cap* or *cumulative price threshold* which the *AEMC* considers will:
 - (1) allow the *reliability standard* to be satisfied without use of *AEMO's* powers to intervene under clauses 3.20.7(a) and 4.8.9(a); and
 - (2) in conjunction with other provisions of the *Rules*, not create risks which threaten the overall integrity of the *market*.
- (e) If the *AEMC* is of the view that a decrease in either the *market price cap* or the *cumulative price threshold* may mean the *reliability standard* is not maintained, the *AEMC* may only determine such a decrease where it has considered any alternative arrangements necessary to maintain the *reliability standard*.
- (f) The *AEMC* may only determine a *market floor price* which the *AEMC* considers will:
 - (1) allow the *market* to clear in most circumstances; and

- (2) not create substantial risks which threaten the overall stability and integrity of the *market*.

(g) If, as part of the *reliability settings review*, the AEMC determines to amend the *reliability settings*, the AEMC must:

- (1) detail of all relevant *market conditions* and circumstances on which the determination is based; and
- (2) provide an assessment of how the new *reliability settings* address the matters set out in clause 3.9.3C(c).

The intention is for the AEMC to elect whether to conduct a *reliability standard review* and *reliability settings review* concurrently, or a *reliability settings review* only, if the AEMC determines that no change to the *reliability standard* is necessary. However, it is also feasible that if a *reliability standard review* is undertaken and no change to the *reliability standard* is determined, then no immediate review of the *reliability settings* would need to occur.

The intention is for the AEMC to provide notice to the market in publishing the date that the amended *reliability settings* will take effect on its website.

The intention is for the AEMC to have regard to a range of potential impacts, including for future *Market Participants* and End-use customers.

The intention is for the AEMC to undertake a transparent consultation process, including the publication of a final report, in accordance with the relevant provisions of the *Rules consultation procedures* (consistent with existing rule provisions) which details the relevant conditions on which the determination is based.

[5] Clause 3.9.3D Reliability standard and reliability settings guidelines

Insert new clause 3.9.3D:

3.9.3D Reliability standard and reliability settings guidelines

- (a) The AEMC must develop and amend as necessary *reliability standard and reliability settings guidelines*, which are guidelines setting out the principles and assumptions to be used to determine the *reliability standard and reliability settings*, in accordance with the *Rules consultation procedures*.
- (b) The AEMC must publish the first *reliability standard and reliability settings guidelines* by 30 April [insert year] [redacted] and there must be *reliability standard and reliability settings guidelines* at all times after that date.

The intention is for the AEMC to develop guidelines that will improve transparency around the process the AEMC will undertake in reviewing and amending the *reliability standard and reliability settings*.

The intention is for the AEMC consult with stakeholders in the development of the guidelines in accordance with the processes set out in the *Rules consultation procedures*.

[7] Clause 3.9.3E Implementation of the Reliability Standard

Insert new clause 3.9.3E:

3.9.3E Implementation of the Reliability Standard

- (a) AEMO must develop and publish the reliability standard implementation guidelines to be used by AEMO in its role of applying the power system security and reliability standards.
- (b) The reliability standard implementation guidelines must specify a methodology for determining reliability adequacy requirements for each relevant forecasting timeframe.

The *Reliability Adequacy Requirements* will be the main output of the *Reliability Standard Implementation Guidelines*, which will be in a form appropriate for each tool where it is used. Creating *Reliability Adequacy Requirements* creates a transparent parameter between the *Reliability Standard Implementation Guidelines* and the PASA (or whatever other tool is to be used).

- (c) Without limiting the scope of the reliability standard implementation guidelines, they must include the methodology for determining reliability adequacy requirements for each relevant forecasting period, a description of how they are intended to be used, and details of how the following matters are considered:
 - (1) The approach used and assumptions made in relation to the demand for electricity.
 - (2) The approach used and assumptions made in relation to the reliability of existing and future generation.
 - (3) The approach used and assumptions made in relation to intermittent generation.
 - (4) The approach used and assumptions made in relation to energy constraints.
 - (5) How network constraints are taken into account.
- (d) AEMO must prepare and may adjust from time to time the reliability adequacy requirements in accordance with the reliability standard implementation guidelines.

- (e) AEMO must develop and publish the first reliability standard implementation guidelines and reliability adequacy requirements by [insert date, which needs to allow sufficient time for the first RSIG and RAR to be determined by AEMO after the Rule is made] and there must be a set of reliability standard implementation guidelines and reliability adequacy requirements at all times after that date.
- (f) AEMO must develop and publish the first reliability standard implementation guidelines in accordance with the Rules consultation procedures.
- (g) AEMO may from time to time in accordance with the Rules consultation procedures amend or replace the reliability standard implementation guidelines.

[8] Clause 3.9.4 Market Price Cap

Omit clause 3.9.4(a) and substitute:

3.9.4 Market Price Cap

- (a) The market price cap is a price cap which is to be applied to dispatch prices, with the level of the price cap being published in the reliability standard and reliability settings schedule.

The intention of this amendment is to clarify that the *market price cap* is now published in the *reliability standard and setting schedule*.

[9] Clause 3.9.6 Market Floor Price

Omit clause 3.9.6(a) and substitute:

3.9.6 Market Floor Price

- (a) The market floor price is a price floor which is to be applied to dispatch prices, with the level of the price floor being published in the reliability standard and reliability settings schedule.

The intention of this amendment is to clarify that the *market floor price* is now published in the *reliability standard and setting schedule*.

[10] Clause 3.14.1 Cumulative Price Threshold and Administered Price Cap

Omit clause 3.14.1(a); 3.14.1(b); and 3.14.1(d) and substitute:

3.14.1 Cumulative Price Threshold and Administered Price Cap

- (a) In conjunction with each *participating jurisdiction*, and after consulting *Market Participants* in accordance with the *Rules consultation procedures and reliability setting guidelines*, the *AEMC* may vary from time to time the *reliability standard and reliability setting schedule* to specify an *administered price cap* for each *region* to apply to *spot prices, dispatch prices and ancillary service prices* and to be used as described in this rule 3.14.
- (b) The *administered floor price* for each *region* to apply to *spot prices* and to be used as described in clause 3.14.2 will be the negative of the value of the *administered price cap* and will be published in conjunction with the *administered price cap* on the *reliability standard and reliability setting schedule*.
- (d) By 28 February of each year the *AEMC* must calculate the *cumulative price threshold* to apply on and from 1 July of that year in accordance with paragraphs (e) and (f) and *publish* its calculation on the *reliability standard and reliability setting schedule*.

The intention of this amendment is to clarify that the *cumulative price threshold* and *administered price cap* are now published in the *reliability standard and setting schedule*.

[11] Clause 3.20.3 Reserve contracts

Omit clause 3.20.3(b) and substitute:

- (b) *AEMO* may determine to enter into *reserve contracts* to ensure that the reliability of *supply* in a *region* or *regions* meets the relevant *power system security and reliability standards* ~~established by the Reliability Panel~~ for the *region* and, where practicable, to maintain *power system security*.

[12] Clause 4.2.7 Reliable Operating State

Omit clause 4.2.7 and substitute:

4.2.7 Reliable Operating State

The *power system* is assessed to be in a *reliable operating state* when:

- (a) *AEMO* has not *disconnected*, and does not expect to *disconnect*, any points of *load connection* under clause 4.8.9;
- (b) no *load shedding* is occurring or expected to occur anywhere on the *power system* under clause 4.8.9; and
- (c) in *AEMO's* reasonable opinion the *reliability adequacy requirements* are being met, ~~levels of short term and medium term capacity reserves available to the power system are at least equal to the required levels~~

~~determined in accordance with the power system security and reliability standards.~~

These changes reflect that the concepts of short and medium term capacity reserves are to be replaced by the *Reliability Adequacy Requirements*.

[13] Clause 4.3.1 Responsibility of AEMO for power system security

Omit clause 4.3.1 and substitute:

4.3.1 Responsibility of AEMO for power system security

The *AEMO power system security responsibilities* are:

- (a) to maintain *power system security*;
- (b) to monitor the operating status of the *power system*;
- (c) to co-ordinate the *System Operators* in undertaking certain of its activities and operations and monitoring activities of the *power system*;
- (d) to ensure that *high voltage* switching procedures and arrangements are utilised by *Network Service Providers* to provide adequate protection of the *power system*;
- (e) to assess potential infringement of the *technical envelope* or *power system operating procedures* which could affect the security of the *power system*;
- (f) to ensure that the *power system* is operated within the limits of the *technical envelope*;
- (g) to ensure that all *plant* and equipment under its control or co-ordination is operated within the appropriate operational or emergency limits which are advised to *AEMO* by the respective *Network Service Providers* or *Registered Participants*;
- (h) to assess the impacts of technical and any operational *plant* on the operation of the *power system*;
- (i) to arrange the *dispatch* of *scheduled generating units, semi-scheduled generating units, scheduled loads, scheduled network services and ancillary services*(including *dispatch* by remote control actions or specific directions) in accordance with the *Rules*, allowing for the dynamic nature of the *technical envelope*;
- (j) to determine any potential *constraint* on the *dispatch* of *generating units, loads, market network services and ancillary services* and to assess the effect of this *constraint* on the maintenance of *power system security*;
- (k) to assess the availability and adequacy, including the dynamic response, of *contingency capacity reserves* and *reactive power*

reserves in accordance with the power system security and reliability standards and to ensure that appropriate levels of contingency capacity reserves and reactive power reserves are available:

- (1) to ensure the *power system* is, and is maintained, in a *satisfactory operating state*; and
- (2) to arrest the impacts of a range of significant multiple *contingency events* (affecting up to 60% of the total *power system load*) to allow a prompt restoration or recovery of *power system security*, taking into account under-frequency initiated *load shedding* capability provided under *connection agreements* or otherwise;
- (l) to monitor the demand and generation capacity, having regard to relevant *reliability adequacy requirements* and, if necessary, initiate action in relation to a relevant *AEMO intervention event*;
- ~~(i) to determine the required levels of *short term capacity reserves* and *medium term capacity reserves* in accordance with the *power system security and reliability standards*, and to assess the availability of the actual *short term capacity reserve* and actual *medium term capacity reserve* in accordance with the *projected assessment of system adequacy (PASA)*, described in Chapter 3, which would be available to supplement utilised *contingency capacity reserves* and, if necessary, initiate action in relation to a relevant *AEMO intervention event*;~~
- (m) to publish ~~make available to *Registered Participants*~~ as appropriate, information about the potential for, or the occurrence of, a situation which could significantly impact, or is significantly impacting, on *power system security*; and advise of any *low reserve condition* for the relevant periods ~~where the *short term capacity reserve* and/or *medium term capacity reserve* is assessed as being less than that determined in accordance with the *short term capacity reserve standard* or *medium term capacity reserve standard* respectively~~ *reliability standard implementation guidelines*;

The specific activities described here are now to be carried out under the *reliability standard implementation guidelines*. AEMO is tasked with monitoring supply and demand and, having regard to the *reliability standard implementation guidelines* and in particular the *reliability adequacy requirements*, deciding whether it is necessary to intervene in the market.

The “capacity reserve” concepts must be removed to avoid conflict with the role of the *reliability standard implementation guidelines*.

This approach allows other tools to be used for intervention advice, such as *EAAP*, rather than just *PASA*, subject to the *reliability standard implementation guidelines*, so the clause should not be specific as to the actual tool that is to be relied upon for intervention—this is a role for the *reliability standard implementation guidelines* to specify.

The words “demand” and “generation capacity” are intended to be broad enough to include *unscheduled demand response* and *unscheduled generation*.

- (n) to refer to *Registered Participants*, as *AEMO* deems appropriate, information of which *AEMO* becomes aware in relation to significant risks to the *power system* where actions to achieve a resolution of those risks are outside the responsibility or control of *AEMO*;
- (o) to utilise resources and services provided or procured as *ancillary services* or otherwise to maintain or restore the *satisfactory operating state* of the *power system*;
- (p) to procure adequate *system restart ancillary services* in accordance with clause 3.11.4A to enable *AEMO* to co-ordinate a response to a *major supply disruption*;
- (q) to interrupt, subject to clause 4.3.2(l), *Registered Participant connections* as necessary during emergency situations to facilitate the re-establishment of the *satisfactory operating state* of the *power system*;
- (r) to issue a *direction* or *clause 4.8.9 instruction* (as necessary) to any *Registered Participant*;
- (s) to co-ordinate and direct any rotation of widespread interruption of demand in the event of a major *supply* shortfall or disruption;
- (t) to liaise with *participating jurisdictions* should there be a need to manage an extensive disruption, including the use of emergency services powers in a *participating jurisdiction*;
- (u) to determine the extent to which the levels of *contingency capacity reserves* and *reactive power reserves* are or were appropriate through appropriate testing, auditing and simulation studies;
- (v) to investigate and review all major *power system* operational incidents and to initiate action plans to manage any abnormal situations or significant deficiencies which could reasonably threaten *power system security*. Such situations or deficiencies include without limitation:
 - (1) *power system frequencies* outside those specified in the definition of *satisfactory operating state*;
 - (2) *power system voltages* outside those specified in the definition of *satisfactory operating state*;
 - (3) actual or potential *power system* instability; and
 - (4) unplanned/unexpected operation of major *power system* equipment; and
- (w) to ensure that each *System Operator* satisfactorily interacts with *AEMO*, other *System Operators* and *Distribution System Operators* for both *transmission* and *distribution network* activities and operations, so that *power system security* is not jeopardised by operations on the *connected transmission networks* and *distribution networks*.

- (x) to apply the *power system security and reliability standards* in accordance with the *reliability standard implementation guidelines*.

Clarifies AEMO's role to apply the reliability standard through the *reliability standard implementation guidelines* and *reliability adequacy requirements* that form part of the RSIG.

[14] Clause 4.8.4 Declaration of Conditions

Omit clause 4.8.4 and substitute:

4.8.4 Declaration of conditions

AEMO may declare the following conditions in relation to a period of time, either present or future:

- (a) ~~Low reserve condition~~ when AEMO considers that the ~~short term capacity reserves or medium term capacity reserves~~ for the period being assessed have fallen below those determined by AEMO as being in accordance with the relevant ~~short term capacity reserve standards or medium term capacity reserve standards~~;
- (a) *Low reserve condition* – when AEMO considers that the balance of *generation capacity* and demand for the period being assessed do not meet the *reliability adequacy requirements* as specified in the *reliability standard implementation guidelines*.

Replacing “*capacity reserves*” with this terminology enables the condition to be determined through a range of different approaches that could be specified in the *reliability standard implementation guidelines*, such as probabilistic techniques or via an *energy reserve assessment*.

- (b) *Lack of reserve level 1 (LOR1)* – when AEMO considers that there is insufficient ~~short term capacity reserves~~ available in an operational forecasting timeframe to provide complete replacement of the *contingency capacity reserve* on the occurrence of the *credible contingency event* which has the potential for the most significant impact on the *power system* for the period nominated. This would generally be the instantaneous loss of the largest *generating unit* on the *power system*. Alternatively, it might be the loss of any *interconnection* under *abnormal conditions*.

All references to “medium term capacity reserves” will be removed by this rule change. Therefore a distinction between short and medium term capacity reserves is no longer needed within the rules.

Whilst LRC declarations will be guided by the *reliability standard implementation guidelines*, it is not intended that the *reliability standard implementation guidelines* will guide LOR definitions. LORs relate to the ability to withstand the worst credible contingency, which would remain assessed through a direct supply less demand technique, so the concept of “capacity reserves” is still useful.

- (c) *Lack of reserve level 2 (LOR2)* – when AEMO considers that the occurrence of the *credible contingency event* which has the potential for the most significant impact on the *power system* is likely to require *involuntary load shedding*. This would generally be the instantaneous loss of the largest *generating unit* on the *power system*. Alternatively, it might be the loss of any *interconnection* under *abnormal conditions*.
- (d) *Lack of reserve level 3 (LOR3)* – when AEMO considers that *Customer load* (other than *ancillary services* or contracted *interruptible loads*) would be, or is actually being, interrupted automatically or manually in order to maintain or restore the security of the *power system*.

[15] Clause 4.9.1 Load forecasting

Omit clause 4.9.1 and substitute:

4.9.1 Load forecasting

- (a) AEMO must produce (at the intervals indicated and in accordance with the *timetable*) an indicative *load* forecast for each *region* for the periods indicated below:
 - (1) each *day*, a forecast for the *day* ahead, such forecast divided into half-hourly *load* forecasts for each *trading interval*;
 - (2) each *day*, a forecast for 2 to 7 *days* (inclusive) ahead, the forecasts for each *day* divided into half-hourly *load* forecasts for each *trading interval*;
 - (3) every week, a forecast for the 24 *months* ahead of the *day* on which the forecast is produced, with a daily profile based on an estimated weekly *peak load* condition with allowances for weekends and holidays.
- (b) These forecasts must provide an indicative estimate of the total *generation* capacity required to meet the forecast *load* (called "**forecast load (as generated)**"), and an equivalent estimation of the *supply* required to be delivered to the relevant *transmission network* (called "**forecast load (sent out)**").
- (c) The following factors must be taken into account in the development of the *load* forecasts, to the extent that such are relevant to the particular forecast:
 - (1) the annual *load* forecasts and *load* profiles collected by the *Network Service Providers* from all *Registered Participants* as required by schedule 5.7, including *load* management expectations and expected *sent out generation* from *embedded generating units*;
 - (2) historic *load* data, including *transmission* losses and *power station* in-house use of the *generated* output;

- (3) weather forecasts and the current and historic weather conditions and pattern;
 - (4) the incidence of major events or activities which are known to *AEMO*;
 - (5) anticipated pumped storage *loads*;
 - (6) official economic activity forecasts from *participating jurisdictions*; and
 - (7) other information provided by *Registered Participants*.
- (d) *AEMO* must develop a methodology to create the indicative *load* forecasts.
- ~~(e) A 10% probability of exceedence of *load* forecast must be adopted for the purposes of determination of *short term capacity reserve* and *medium term capacity reserve* requirements under the *power system security and reliability standards*.~~

The new clause 3.9.3E requires *AEMO*, through the *reliability standard implementation guidelines*, to determine the approach used for demand forecasts. This approach allows other approaches to be considered, such as 5 per cent and 50 per cent probabilities of exceedence as is found to be relevant in assessing circumstances against the reliability standard.

- ~~(f) *AEMO* must aggregate the regional forecasts to produce a total *interconnected transmission network* indicative *load* schedule for use in *AEMO* processes such as the determination of the required levels of *short term capacity reserves*, *medium term capacity reserves*, the *PASA* assessments and *pre dispatch schedules*.~~

In practice regional *demands* are currently used in these tools and then internally the *reserves* are shared. The way in which this is done is best left to be determined and specified in the *reliability standard implementation guidelines*.

- (ge) The *load* forecasts produced by *AEMO* are indicative only as *AEMO* has no direct influence over *Market Participants* in their decisions about their level of demand and, accordingly, no person may claim any loss or damage from *AEMO* as a result of any difference between *load* forecasts and actual *load*.

[16] Clause 8.8.1 Purpose of Reliability Panel

Omit clause 8.8.1(a)(2) and substitute:

- (2) Review and, on the advice of *AEMO*, determine the *power system security standards*;

The purpose of the *Reliability Panel* has been amended to clarify that the *Reliability Panel* no longer has responsibility for the determining the *reliability standard* as this will now be a responsibility of the *AEMC*. However it is still the case that the

Reliability Panel will be required to determine the *power system security standards* (see amended definition section below).

[17] Clause 8.8.3 Reliability review process

Omit clause 8.8.3(b) and substitute:

- (b) At least once each calendar year and at such other times as the *AEMC* may request, the *Reliability Panel* must conduct a review of the performance of the *market* against the *power system security standards*, the *reliability standard*, the *system restart standard*, the guidelines referred to in clause 8.8.1(a)(3), the policies and guidelines referred to in clause 8.8.1(a)(4) and the guidelines referred to in clause 8.8.1(a)(9) in accordance with this clause 8.8.3.

The intention is to clarify that while the role *Reliability Panel* has been clarified to make clear that the *Reliability Panel* only has responsibility for determining *power system security standards*, it is still the case that the *Reliability Panel* will be required to review the *reliability standard* in the context of its Annual Market Performance Review (AMPR). Consequently this clause has been amended to ensure that the *Reliability Panel* can still perform this function with respect to the AMPR as intended.

[18] Part ZT Transitional arrangement for the reliability standard implementation guidelines

Insert the following new clause:

11.50.1 Reliability standard implementation guidelines

All actions taken by *AEMO* prior to the commencement date in anticipation of the commencement date for the purposes of preparing and publishing the first *reliability standard implementation guidelines* as required by clause 3.9.3E(e) are taken to satisfy the equivalent actions required for *reliability standard implementation guidelines* under rule 3.9.3G.

[19] Chapter 10 Amended definitions

In Chapter 10, omit the following definitions and substitute:

reliability standard

The standard set out under that name in the *reliability standard and reliability settings schedule* published by the *AEMC* under clause 3.9.3A.

The intention is to amend the definition of the *reliability standard* to clarify that the standard is now set out in the *reliability standard and reliability settings schedule* and not *power system security and reliability standards*.

short-term capacity reserve

At any time, the amount of surplus or unused generating capacity indicated by the relevant *Generators* as being available ~~for any half hour period during the next 7 days and which is assessed as being in excess of~~ in the relevant timeframe minus the capacity requirement to meet the current forecast *load* demand, taking into account the known or historical levels of demand management.

There are two definitions for short term capacity reserve in the current Rules. One has been deleted as it is no longer required, and the other is retained as a more generic supply minus demand concept referred to as “capacity reserve”. It is only used in the definition of LOR1 in clause 4.8.4(b) where it remains useful for assessing the capability to withstand credible contingencies.

power system security and reliability standards

The standards (other than the *system restart standard*) governing *power system security and reliability of the power system* to be approved by the *Reliability Panel* on the advice of AEMO, but which may include but are not limited to standards for the *frequency of the power system* in operation, *contingency capacity reserves* (including guidelines for assessing requirements), ~~short term capacity reserves and medium term capacity reserves.~~

Drafting instruction: it will be necessary to search for every occurrence of the term “*power system security and reliability standards*” and replace it with the modified term above, which excludes “and reliability”.

These standards as promulgated by the Reliability Panel have never included an identification of short or medium term capacity reserve standards, such as MRLs. Consistent with the MCE recommendation, this role is clarified as being delegated to AEMO. Reference to the reliability of the power system has also been removed to clarify that the Reliability Panel will no longer have responsibility for determining the *reliability standard*.

[20] Chapter 10 New definitions

In Chapter 10, insert the following new definitions in alphabetical order:

annual index for the reliability settings

An index to be applied to the *reliability settings* on 1 July of each year.

reliability adequacy requirements

The requirements determined by AEMO under clause 3.9.3E in accordance with the reliability standard implementation guidelines.

reliability settings

The *market price cap*, the *cumulative price threshold*, the *market floor price*, and *administered price cap*.

reliability standard and reliability settings guidelines

Has the meaning given in clause 3.9.3D(a)

reliability settings review

Has the meaning given in clause 3.9.3C(a)(1).

reliability standard and reliability settings schedule

Has the meaning given in clause 3.9.3A(a).

reliability standard implementation guidelines

The guidelines developed and *published* by AEMO under clause 3.9.3E.

reliability standard review

Has the meaning given in clause 3.9.3B(a)(1).

[21] Chapter 10 Deleted definitions

In Chapter 10, remove the following existing definitions:

medium term capacity reserve

~~The aggregate amount of generating capacity indicated by the relevant *Generators* as being available any time on a particular *day* during the period covered by the *medium term PASA*, and which is assessed by *AEMO* as being in excess of the capacity requirement to meet the forecast *peak load*, taking into account the known or historical levels of demand management.~~

medium term capacity reserve standard

~~The level of *medium term capacity reserve* required for a particular period as set out in the *power system security and reliability standards*.~~

The concept of medium term capacity reserve has been transferred to the *reliability standard implementation guidelines* and the *reliability adequacy requirement*.

short term capacity reserve

~~The aggregate amount of generating capacity indicated by the relevant *Generators* as being available for a particular *trading interval* during the next *7 trading days*, and assessed by *AEMO* as being in excess of the capacity requirement to meet the forecast *load*, taking into account the known or historical levels of demand management.~~

This is a duplicate definition in the current Rules.

