AEMC

RULE CHANGE

Australian Energy Market Commission

DRAFT RULE DETERMINATION

National Electricity Amendment (NEM Reliability Settings: VoLL, CPT and Future Reliability Review) Rule 2009

Rule Proponent
AEMC Reliability Panel

26 February 2009

JOHN TAMBLYN
Chairman
For and on behalf of the Australian Energy Market Commission

Inquiries

The Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

E: aemc@aemc.gov.au
T: (02) 8296 7800
F: (02) 8296 7899

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About the AEMC

The Council of Australian Governments, through its Ministerial Council on Energy, established the Australian Energy Market Commission (AEMC) in July 2005 to be the Rule maker for national energy markets. The AEMC is currently responsible for Rules and policy advice covering the National Electricity Market. It is a statutory authority. Our key responsibilities are to consider Rule change proposals, conduct energy market reviews and provide policy advice to the Ministerial Council as requested, or on AEMC initiative.

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Glossary

ACCC	Australian Competition and Consumer Commission
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
APC	Administered Price Cap
APP	Administered Price Period
Commission	see AEMC
CPRS	Carbon Pollution Reduction Scheme
CPT	Cumulative Price Threshold
CRR	Comprehensive Reliability Review
ERAA	Energy Retailers Association of Australia
GWh	Gigawatt-hour
IES	Intelligent Energy Systems
MCE	Ministerial Council on Energy
MPL	Market Price Limit
MWh	Megawatt-hour
NECA	National Electricity Code Administrator
NEL	National Electricity Law
NEM	National Electricity Market
NEMMCO	National Electricity Market Management Company
NEO	National Electricity Objective
Panel	AEMC Reliability Panel
RET	Renewable Energy Target
Rules	National Electricity Rules
USE	Unserved Energy
VoLL	Value of Lost Load

Summary

On 18 December 2008, the Commission received a Rule change proposal from the AEMC Reliability Panel ("the Panel") relating to the Value of Lost Load (VoLL), the Cumulative Price Threshold (CPT) and the future review of reliability standards and settings.

This Rule change proposal is the second Rule change to be submitted by the Panel as a result of the Panel's Final Report on the Comprehensive Reliability Review (CRR), which was published on 21 December 2007. The first Rule change proposal from the Panel arising from the CRR ("NEM Reliability Settings: Information, Safety Net and Directions") was submitted to the Commission on 15 February 2008, and commenced operation (with some amendments) on 1 July 2008.

This Rule change proposal has four main components:

1. an increase in the level of the VoLL from the existing level of $10,000/MWh to $12,500MWh to be effective from 1 July 2010;
2. that the CPT be defined in the Rules as 15 times VoLL;
3. that the term "Value of Lost Load (VoLL)" be changed to "Market Price Limit (MPL)"; and
4. that the current annual review of VoLL be replaced with a reliability standards and settings review (i.e. the reliability standard, VoLL, CPT and the market floor price) which is to take place every two years, with two years' notice of any change.

The Panel also sought to have its Rule change proposal considered under the "fast track" process contained in section 96A of the National Electricity Law (NEL). The recommendations from the Final Report on the CRR contained in this Rule change proposal were consulted on by the Panel in an Exposure Draft, which was published on 16 September 2008.

On 22 January 2009, the Commission published a notice under section 95 of the NEL, advising of its intention to commence the Rule change process and "fast track" the Panel's Rule change proposal under section 96A of the NEL. Under the "fast track" process a Rule change proposal progresses directly to a draft Rule determination within five weeks of the publication of the section 95 notice.

This draft determination accepts many of the Panel's proposed changes, but with some modifications. The substantive differences between the Panel's Rule change proposal and the draft Rule as determined by the Commission are:

- that the CPT should be set at an absolute level of $187,500, and not be defined as a value relative to that of VoLL; and
- that VoLL will be renamed the "Maximum Market Price", rather than the "Market Price Limit" (and that the "Market Floor Price" will consequently be renamed the "Minimum Market Price").

As the different definition of the CPT is a relatively material change to the proposal, the Commission is exercising its power under sections 91A and 99 of the NEL to

make a more preferable draft Rule. In the Commission's view, while the original Rule change proposal would have represented an improvement on the current arrangements when assessed against the National Electricity Objective (NEO), the Commission's more preferable draft Rule is likely to contribute to the achievement of the NEO to a greater extent than the proposed Rule.

In making this more preferable draft Rule the Commission has had regard to a range of factors including the Rule proposal, modelling undertaken for the CRR and subsequently updated for the AEMC's Review of Energy Market Frameworks in light of Climate Change Policies, stakeholder submissions to the Panel's Exposure Draft and the requirements under the NEL.

The Commission invites submissions on this draft Rule determination by **16 April 2009**.

Under section 101 of the NEL, any interested person or body may request that the Commission hold a hearing in relation to the draft Rule determination. Any request for a pre-determination hearing must be made in writing and must be received by the Commission no later than **6 March 2009**.

Submission and requests for a hearing may be sent electronically to submissions@aemc.gov.au or by mail to:

Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

All submissions should reference the following: Company/Organisation name and NEM Reliability Settings Draft Determination, February 2009 – Reference ERC0080

1 The Reliability Panel's Rule Change Proposal

1.1 The Rule Change Proposal

On 18 December 2008, the Commission received a Rule change proposal from the AEMC Reliability Panel ("the Panel") relating to the Value of Lost Load (VoLL), the Cumulative Price Threshold (CPT) and the future review of reliability standards and settings.

The Panel's Rule change proposal indicated that it was seeking to have its proposal "fast tracked" under section 96A of the National Electricity Law (NEL).

On 22 January 2009, the Commission published a notice under section 95 of the NEL advising of its intention to commence the Rule change process and "fast track" this Rule change proposal under section 96A of the NEL.

1.2 Background to the Rule Change Proposal

The Rule change proposal is the second Rule change to be submitted by the Panel as a result of the Panel's Final Report on the Comprehensive Reliability Review (CRR). The first Rule change proposal from the Panel arising from the CRR ("NEM Reliability Settings: Information, Safety Net and Directions") was submitted to the Panel on 15 February 2008, and commenced operation (with some amendments) on 1 July 2008.

1.2.1 Comprehensive Reliability Review

The Commission directed the Panel to undertake a comprehensive and integrated review of the reliability standard and settings for achieving reliability of supply in the National Electricity Market (NEM) in December 2005. An Issues Paper on the CRR was published in May 2006 and, following stakeholder consultation, the First Interim Report on the CRR was published in April 2007.

In June 2007, the Ministerial Council on Energy (MCE) wrote to the Commission requesting that the Panel's terms of reference for the CRR be expanded to consider the effectiveness of the current market arrangements in managing generator input constraints in the context of energy shortfalls being projected by NEMMCO if the prevailing drought conditions in south eastern Australia continued.

The Panel published its Second Interim Report on the CRR in August 2007 informed by submissions on the First Interim Report. Stakeholders responded to the Second Interim Report with further written submissions, as well as in-person presentations to the Panel at a forum held in September 2007.

The Panel published its Final Report on the CRR in December 2007, in which it concluded that the reliability standard remained appropriate but that changes to the reliability settings were required in order to ensure continued achievement of the standard.

1.2.2 The reliability standard

The Reliability Standard for Generation and Bulk Supply forms part of the Power System Security and Reliability Standards, and is determined by the Panel in accordance with clauses 8.8.1(a)(2) and 8.8.3 of the Rules.

The reliability standard itself is an output-based measure expressed in terms of the maximum permissible unserved energy (USE). This is the maximum allowable level of electricity at risk of not being supplied to consumers, per financial year. Under the current reliability standard, the maximum permissible USE is 0.002% of the annual energy consumption for the associated region or regions per financial year.

1.2.3 Current reliability settings

The level of VoLL, the CPT and the market floor price are the price limits within which the wholesale spot market can balance supply and demand, and deliver capacity to meet the reliability standard while also avoiding unmanageable risks for market participants. VoLL is the maximum market price level, and is currently set at $10,000/MWh. The market floor price is the minimum market price level, and is currently set at -$1,000/MWh. These parameters are crucial in providing a key signal for supply and demand-side investment and usage. In particular, if VoLL is set too low, there may be insufficient incentives to invest in new generation capacity to meet the reliability standard in the future.

The CPT is designed to limit participants' exposure to protracted stress in the wholesale spot market. It is currently set at $150,000. The CPT is an explicit risk management mechanism to protect retailers and consumers from the effects of prolonged extreme prices. If the sum of the half-hourly wholesale market spot prices over a rolling seven-day period exceeds the threshold, then an Administered Price Period (APP) is declared by NEMMCO such that spot market prices do not exceed an Administered Price Cap (APC) until the sustained high prices fall away. The APC is specified in a schedule that is developed, authorised, published and varied by the AEMC, and is currently $300/MWh for all regions of the NEM, for all time periods.

1.3 Summary of the Rule Change Proposal

The Panel's Rule change proposal seeks to implement four recommendations from the Panel's Final Report on the CRR:

1. an increase in the level of VoLL from the existing level of $10,000/MWh to $12,500/MWh to be effective from 1 July 2010;
2. that the CPT be defined in the Rules as 15 times VoLL;
3. that the term "Value of Lost Load (VoLL)" be changed to "Market Price Limit (MPL)"; and
4. that the current annual review of VoLL be replaced with a reliability standards and settings review (i.e. the reliability standard, VoLL, CPT and the market floor price) which is to take place every two years, with two years' notice of any change.

These recommendations were further consulted on by the Panel in an Exposure Draft, which was published on 16 September 2008. Submissions made by stakeholders in response to the Exposure Draft were considered by the Panel during the development of the Rule change proposal.

The Panel has suggested that each component of its proposed Rule will or is likely to advance the National Electricity Objective (NEO) as the Panel anticipates that:[1]

- increasing the level of VoLL would decrease the incidence of breaching the reliability standard thereby improving the reliability of electricity supply to consumers, and would promote efficient investment in electricity services by compensating investors who adopt a higher discount rate when assessing investments;
- maintaining the ratio of 15:1 between CPT and VoLL would promote the efficient operation of electricity services with respect to reliability as a financial safety net, and would promote efficient investment as the CPT is designed not to hinder investment or the remuneration of occasionally utilised capacity by being set at a level that is unlikely to be triggered except in very extreme circumstances;
- renaming the term "VoLL" would promote the efficient use of electricity services through clarification of the term as a market price limit and avoid any misunderstanding as to the true meaning of VoLL; and
- reviewing all the reliability settings (i.e. the reliability standard, VoLL, the CPT and the market floor price) together would promote the long term interests of consumers of electricity as it would ensure that the reliability standard is met and becomes more effective.

1.4 Interactions with other initiatives

The Rule change proposal has potential linkages to other initiatives currently being progressed. The Commission believes that two of these are particularly relevant.

1.4.1 Climate Change Policies

Since the publication of the CRR, the Federal Government has announced plans for a Carbon Pollution Reduction Scheme (CPRS), and an expansion of the existing Mandatory Renewable Energy Target (expanded RET). There is also a review by the AEMC at the request of the MCE relating to the implications of the introduction of these climate change policies on the energy market frameworks and Rules.

In its Rule change proposal, the Panel highlighted the current intention for the CPRS to be introduced on 1 July 2010. In light of this, the Panel noted that it had sought views from stakeholders on the appropriateness of 1 July 2010 as the date for the increases in VoLL and CPT to become effective, and that responses on this issue had been mixed. Nevertheless, the Panel decided that, taking into account all relevant

[1] Reliability Panel Rule change proposal, *NEM Reliability Settings: VoLL, CPT and Future Reliability Review*, p.x, December 2008.

factors, it would be appropriate to propose in this Rule change proposal to raise VoLL and maintain the CPT level relative to VoLL on the same date as the proposed introduction of the CPRS on 1 July 2010.

1.4.2 Recent market events

On 29 January 2009 the CPT was breached, and an APP declared, in South Australia and Victoria. This was at a time of prolonged extreme high temperatures and demand, and was coincident with a number of outages on the transmission and distribution systems.

At its meeting on 6 February 2009, the MCE agreed to request the AEMC to review energy market frameworks in light of the impact on electricity supplies of the heat wave of 29-31 January 2009.

These extreme events represented only the second time that the CPT has been breached, and the MCE suggested that the review should consider "whether the level of the NEM price cap (VoLL) should be raised to ensure adequate levels of generation to reduce the risk of loss of supply during heat wave events".[2]

The Commission notes that terms of reference have yet to be agreed for this review, but currently believes that this Rule change proposal, which was submitted before the events of 29-31 January, should continue to be considered on its own merits. Any further review would be in addition to the assessment of this Rule change proposal, which can therefore be considered to constitute baseline activity on to which the review would be overlaid.

1.5 Consultation and Process

In its Rule change proposal, the Panel requested that the Commission "fast track" the Rule change proposal under section 96A of the NEL.

Under the "fast track" process, the first round of consultation and option for a public hearing, that is a feature of the standard Rule making process, is bypassed. Following the publication of a section 95 notice initiating the Rule change process, the Commission has five weeks to publish a draft Rule determination. Following the publication of the draft Rule determination, "fast tracked" Rule changes follow the normal Rule making process, with a minimum six week consultation (which would normally be the second round of consultation), and the publication of a final Rule determination within six weeks of the close of this consultation period.

Section 96A of the NEL indicates that that a proposal may be "fast tracked" if the Rule change proposal is from an "electricity market regulatory body" (including the Panel) and that the relevant body has consulted with the public on the nature and content of the Rule change proposal before submitting the proposal. In forming a

[2] MCE Communiqué, p.1, 6 February 2009.

view on whether to "fast track" a proposal submitted by an electricity market regulatory body, the Commission is required to have regard to the nature and content of that request, and the kind of consultation conducted by the regulatory body.

Additionally, clause 8(f) of the NEL Regulations requires that the electricity market regulatory body must, as part of the proposal, include a summary of the consultation conducted by that body, including information about the extent of the consultation and about the issues raised during the consultation and the electricity market regulatory body's response to those issues.

The Panel highlighted its view that these requirements were met by the Rule change proposal, following on from the CRR and the Exposure Draft, in that:

- Chapter 1 of the Panel's Rule change proposal contains a description of the issues raised by stakeholders and the Panel's response to these issues; and
- Chapter 2 of the proposal contains a description of the consultation process the Panel conducted.[3]

The Exposure Draft consolidated the second and third Rule change packages foreshadowed in the final CRR Final Report into a single Rule change package, and presented this as a fully developed Rule change proposal. The Panel sought stakeholder submissions in response to the Exposure Draft and Proposed Rule (which was published on 16 September 2008, with submissions due by 31 October 2008). This Panel considered that this consultation with stakeholders on the Exposure Draft is the consultation required in accordance with Section 96A of the NEL, and the Commission agreed with this assessment.

The Commission therefore determined that the Panel had met the minimum requirements for a "fast tracked" Rule making process under section 96A of the NEL and approved the Panel's request in this regard.

On 22 January 2009, the Commission published a notice under section 95 of the NEL advising of its intention to commence the Rule change process and "fast track" this Rule change proposal under section 96A of the NEL.

Under the "fast track" process, no initial consultation on the proposal was undertaken, and this draft Rule determination forms the next step of the Rule making process.

1.6 Consultation on draft Rule Determination

The Commission invites submissions on this draft Rule determination by 16 April 2009 (which is seven weeks from the date of publication to avoid any conflict with Easter).

[3] Reliability Panel Rule change proposal, p.25.

In accordance with section 101 of the NEL, any interested person or body may request that the Commission hold a hearing in relation to the draft Rule determination. Any request for a pre-determination hearing must be made in writing and must be received by the Commission no later than 6 March 2009.

Submissions and requests for a hearing may be sent electronically to submissions@aemc.gov.au or by mail to:

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All submissions should reference the following: Company/Organisation name and NEM Reliability Settings Draft Determination, February 2009 – Reference ERC0080.

2 Draft Rule Determination

2.1 Commission's draft Rule determination

In accordance with sections 91A and 99 of the NEL, the Commission has determined to make a draft Rule which is a more preferable Rule than the Panel's proposed Rule. The Commission is satisfied that the more preferable Rule will or is likely to better contribute to the achievement of the NEO than the Panel's proposed Rule, having regard to the issues raised by the Panel's Rule change proposal. A draft of the Rule to be made (the draft Rule) is published with this draft determination.

2.2 Commission's considerations

In making the draft Rule, the Commission has taken into account:

- the Commission's powers under the NEL to make the Rule;
- the proponent's Rule proposal and proposed Rule;
- relevant MCE statements of policy principles;
- the Commission's approach and decision making framework; and
- the Commission's analysis as to the ways in which the proposed Rule will, or is likely to contribute to the NEO.

For reasons set out in Chapter 3, the draft Rule satisfies the Rule making test. In summary, the Commission considers that the draft Rule will, or is likely to, contribute to the achievement of the NEO because the draft Rule is likely to promote a more efficient level of investment in electricity services, furthering the long term interests of consumers by representing an efficient balance between the reliability and price of electricity. The Commission also considers that the draft Rule will, or is likely to, promote the efficient use of electricity services.

2.3 Commission's power to make the Rule

The subject matters about which the AEMC may make Rules are set out in section 34 of the NEL and more specifically in Schedule 1 to the NEL. The proposed Rule falls within the subject matters that the AEMC may make Rules about because it relates to the regulation of:

- the national electricity market (as it relates to the Rules for VoLL and the CPT); and
- the operation of the national electricity system for the purposes of the safety, security and reliability of that system (as it relates to the settings designed to maintain achievement of the reliability standard).

The proposed Rule is also within matters set out in Schedule 1 to the NEL as it relates to:

- the setting of prices for electricity and services purchased through the wholesale exchange operated and administered by NEMMCO, including maximum and minimum prices (item 7 of Schedule 1 of the NEL); and
- reviews by or on behalf of the Reliability Panel or any other Panel or Committee established by the AEMC (item 33b of Schedule 1 of the NEL).

2.4 Relevant MCE statements of policy principles

The NEL requires the Commission to have regard to any MCE statements of policy principles in applying the Rule making test. The Commission notes that currently there are no MCE statements of policy principles that relate to the issues contained in the Panel's Rule change proposal.

2.5 The Commission's approach and decision making framework

The Panel's Rule change proposal is being considered under the "fast track" Rule making process, in accordance with section 96A of the NEL. A "fast tracked" Rule making process significantly reduces the statutory timeframes of the standard Rule making process. As a result, the "fast tracked" Rule making process requires the Commission to approach its assessment of the Panel's Rule change proposal in a different way to how it considers proposed Rule changes under the standard Rule making process. As the Commission has not undertaken a first round consultation, in preparing this draft Rule determination it has:

- assessed the process that was undertaken by the Panel in the development of its Rule change proposal, including the issues that were raised by stakeholders in response to the Exposure Draft and how the Panel addressed these issues in its Rule change proposal; and
- assessed the Rule change proposal against the NEO.

In assessing the Panel's Rule change proposal against the NEO, the Commission has also informed its decision by considering the following criteria:

1. the likely effect of the proposal on the efficiency of investment;
2. the likely effect of the proposal on the reliability of the supply of electricity;
3. the likely effects of the proposal on pricing outcomes and participant responses; and
4. whether the proposal is consistent with principles of good regulatory practice.

2.6 Rule making test and the National Electricity Objective

The Commission, in accordance with section 88(1) of the NEL, may only make a Rule if it is satisfied that the Rule will, or is likely to, contribute to the achievement of the NEO.

The NEO, as set out in section 7 of the NEL, 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.

The NEO is founded on the concepts of economic efficiency (including productive, allocative and dynamic efficiencies), good regulatory practice (which refers to the means by which regulatory arrangements are designed and operated) as well as reliability, safety and security priorities. The NEO encourages economic efficiency in the electricity sector in a manner that is welfare enhancing and economic efficiency takes into account public as well as private costs and benefits. In assessing the Rule change proposal against the NEO the Commission has also formed its decision by considering the likely long term and timing implications of the proposal compared to the counterfactual.

Discussion of the Commission's assessment and analysis of the proposed Rule against the NEO is provided in the Chapter 3.

2.7 Differences between the Proposed Rule and the Draft Rule

In making its more preferable draft Rule, the Commission has adopted some components of the Panel's proposed Rule change, and made modifications to others, to further promote the NEO.

The substantive differences between the Panel's Rule change proposal and the more preferable draft Rule as determined by the Commission are:

- that the CPT should be set at an absolute level of $187,500, and not be defined as a value relative to that of VoLL; and
- that VoLL will be renamed the "Maximum Market Price", rather than the "Market Price Limit" (and that the "Market Floor Price" will consequently be renamed the "Minimum Market Price").

The rationale behind these amendments is set out in sections 3.2 and 3.3, respectively. The Commission considers that the different definition of the CPT in particular results in the draft Rule representing a more preferable Rule.

The Commission has also made various other minor drafting changes to the Panel's proposed Rule for reasons of clarity and simplicity.

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3 Commission's assessment of the proposed Rule change

This chapter sets out the Commission's assessment and analysis of the issues raised in the Rule Change Proposal, particularly in respect of the Rule making test. It includes consideration of stakeholder views in response to the Panel's Exposure Draft.

The assessment covers six issues. These are comprised of the four components of the proposed Rule change; the date on which some of the changes should take effect; and an additional issue identified by the Commission during its consideration of the Rule change proposal:

1. *Increasing VoLL* – changing the level of VoLL from $10,000/MWh at present to $12,500/MWh.

2. *Linking the CPT to VoLL* – defining the CPT as 15 times VoLL.

3. *Renaming "VoLL"* – changing the term "Value of Lost Load" to the "Market Price Limit".

4. *Future Reliability Reviews and Reporting* – replacing the current annual review of VoLL with a reliability standard and settings review every two years, with two years' notice of any change.

5. *Effective date* – the proposed date for the increase in VoLL, and the consequent increase in CPT, to take effect is 1 July 2010, the same date on which it is currently expected that the CPRS will be implemented.

6. *AER reporting threshold* – in considering the proposed Rule change, the Commission identified that there is an obligation on the AER to prepare and publish a report where spot prices exceed $5,000/MWh. Although not part of the proposed Rule change, the Commission considered whether the $5,000/MWh threshold would continue to be the appropriate threshold if the level of VoLL were to be increased. This issue is discussed in more detail in section 3.6 of this document.

3.1 Increasing VoLL

3.1.1 The Panel's proposal

The Panel is proposing to increase the level of VoLL, from $10,000/MWh as at present, to $12,500/MWh. The Panel anticipates that "increasing VoLL would encourage participants to enter into longer-term contracts to underwrite new investments as well as to provide a wholesale price envelope for the medium-term that reflects the costs of achieving NEM reliability at 0.002% unserved energy".[4]

As part of the CRR, the Panel undertook analysis examining the impact that differing levels of VoLL would have on the amount of USE. The scenarios considered included nominal VoLL levels of the current $10,000/MWh with alternate values of $5,000/MWh, $12,500/MWh, $15,000/MWh, $17,500/MWh, $20,000/MWh and $30,000/MWh.

The Panel contended that this analysis "indicated that leaving VoLL at its current level would result in a breach of the reliability standard sometime between 2010 and 2014, particularly when considering the conservative nature of the modelling which assumes a near ideal market setting and does not allow for material increases in the costs of constructing new generating plant".[5] Against this background, the Panel concluded that an increase of VoLL to $12,500/MWh, effective from 1 July 2010, was justified, and therefore proposed such an alteration in this Rule change proposal.

With regards to the better achievement of the NEO, the Panel stated that it "considers that an increase to VoLL decreases the incidence of breaching the reliability standard which improves the reliability of electricity supply to consumers. The Panel also views that retaining the existing arrangements and raising VoLL in response to rising costs and increased uncertainty about prices would promote efficient investment in electricity services by compensating investors who are adopting a higher discount rate when assessing investments."[6]

3.1.2 Stakeholder views

In response to the Panel's Exposure Draft, the ERAA stated that "in summary, while increasing the level of VoLL will increase the level of risk for retailers, on balance, we support a small incremental increase to ensure reliability standards will continue to be met".[7] The ERAA also considered that, as the proposed increase in VoLL had been justified on an assessment of reliability in the current policy environment (i.e. no CPRS and existing RET), the proposed biennial review of reliability settings would facilitate any further required changes.

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[4] Reliability Panel Rule change proposal, p.3.

[5] Ibid, p.6. See also Figure 9.

[6] Ibid, p.28.

[7] ERAA submission to the Reliability Panel Exposure Draft, p.1, 31 October 2008.

The AER noted that while it "has not reviewed the Reliability Panel's modelling supporting an increase in the MPL [VoLL], it appreciates that a significant period of time has lapsed since the last MPL increase", and, recognising "the importance of allowing price signals to be revealed", stated that "accordingly, the AER has no strong objection to an increase in the MPL".[8] However, the AER also believed that "uncertainty about the future cost of carbon emissions has been the primary cause of deferred generation investment", and that "accordingly, it is not clear that the existing MPL is insufficient".[9] Further, given that "by September 2009, the AEMC will have completed its Review of Energy Market Frameworks in light of Climate Change Policies", the AER expressed a belief "that the implications of any recommendations arising from the AEMC review should be considered before proceeding with the current Rule change proposal".[10]

The Panel noted the AER's comments, in particular highlighting that "the AER indicted that it 'has no strong objection to an increase in the MPL [VoLL]'."[11] The Panel responded to the AER's other comments under its consideration of the potential impacts of raising VoLL and the CPT on the same day as the proposed implementation of the CPRS (see section 3.5).

3.1.3 The Commission's assessment

In its considerations, the Commission has reviewed the risk assessment produced by Concept Economics that the Panel provided with this Rule change proposal,[12] together with the analysis undertaken by CRA International on behalf of the Panel under the CRR.[13] As part of its Review of Energy Market Frameworks in light of Climate Change Policies, the Commission requested that the Panel provide an update of this analysis to assess the impact on reliability of the introduction of the CPRS and expanded RET. This was published in December 2008,[14] and the Commission has also given regard to this study.

The modelling in the CRR Final Report indicated that leaving VoLL at $10,000/MWh would be likely to result in a breach of the reliability standard, potentially as soon as 2010.[15] This risk would generally increase over the remainder of the period studied (to 2018). The Commission notes that the Panel's analysis was undertaken against a conservative case of the construction costs of new generating plant and minimal market distortions, and also the variability of the outcomes. Since the CRR Final Report there have been significant changes in the outlook for the global economy.

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8 AER submission to the Reliability Panel Exposure Draft, p.3, 30 October 2008.

9 Ibid.

10 Ibid.

11 Reliability Panel Rule change proposal, p.4.

12 Concept Economics, *Risk Assessment of Raising VoLL and the CPT*, October 2008.

13 CRA International, 2007, *Modelling Methodology, Input Assumptions and Results: Second Stage Modelling*, December 2007.

14 CRA International, 2008, *Updating the Comprehensive Reliability Review quantitative analysis to account for CPRS and MRET*, December 2008.

15 CRA International 2007, Figure 9, p.21.

While this may have decreased construction costs, financing costs are likely to have increased significantly. The Commission accepts that, other than rerunning the modelling in full, it is impossible to draw unambiguous conclusions as to the effect on the conclusions drawn in the CRR.

The analysis undertaken resulted in a range of samples, and a wide spread of USE outcomes were observed for each level of VoLL studied. These were a consequence of the volatility of demand and generator performance.[16] Where VoLL was left at its current level of $10,000/MWh, the lower bound of USE outcomes in 2009 was virtually zero and the upper band was just in excess of the reliability standard of 0.002% USE, with an average well inside the reliability standard. However, in subsequent years the average of the outcomes was between 0.002% and 0.004% from 2010 to 2016, before increasing further.[17]

A further sensitivity was undertaken in the CRR modelling to simulate the effect of capital costs increasing ahead of inflation. Although resulting in a more benign series of outcomes in 2010, this showed, on average, USE from 2011 onwards of at least 0.005%.[18]

The updated analysis undertaken to consider the effect on reliability of the CPRS and expanded RET also showed, in scenarios studied with VoLL maintained at a nominal level of $10,000/MWh, an average level of USE in excess of 0.002% from 2010 onwards.[19]

The risk assessment undertaken by Concept Economics concentrated on the impacts of various levels of VoLL and CPT to each participant class, and did not attempt to quantify long term reliability implications. However, it concluded that, if VoLL and CPT were left unaltered, in the high price events modelled, peaking generators would not earn sufficient net revenue to cover their annual capital requirement and that this "may potentially lead to inadequate level of peaking investment to sustain NEM reliability standard".[20]

The Commission considers that the modelling undertaken as part of the CRR gives a sound basis for confidence in the conclusion that there is a significant risk to the market of the reliability standard being breached after 2010 if VoLL is maintained at its current level. The Commission notes that no quantitative evidence to the contrary was supplied in response to the exposure draft.

The Commission also considers that this risk would be maintained in the event of the introduction of the CPRS and expanded RET. The Commission has noted the view that any change to VoLL should be delayed until the introduction of these Climate Change Policies has been confirmed, and the implications of them fully reviewed by

16 CRA International 2007, pp.30-1.

17 Ibid, Figure 20, p.31.

18 Ibid, Figure 21, p.32.

19 CRA International 2008, Figures 4 and 6, pp.32 & 34.

20 Concept Economics, p.VI.

the Commission. However, the Commission believes that, given the notification period necessary to effectively implement a change in VoLL, the risk of leaving VoLL unchanged is significantly greater than the risk from approving an increase at this time. In this context, the Commission considers that both the updated modelling provided by the Panel, which reported results consistent with the Panel's original analysis, and the fact that the Climate Change Policies are likely to put further upward pressure on costs are particularly relevant.

The Commission has therefore determined that VoLL should not be maintained at its current level of $10,000/MWh.

The Commission agrees that, given these concerns regarding reliability, the least disruptive method of addressing them would be to increase VoLL, in that this is consistent with the existing design of the NEM. Increasing VoLL should encourage participants to enter into longer-term contracts to underwrite new investments as well as providing a wholesale price envelope for the medium-term that reflects the costs of achieving reliability at 0.002% USE. A key conclusion of the Panel's modelling was that increasing VoLL decreases the incidence of USE.[21]

The analysis commissioned by the Panel presented analysis of a number of differing levels of VoLL, and the impact these would have in terms of USE and meeting the NEM reliability standard. In its Rule change proposal, the Panel in particular highlighted two alternative levels of VoLL: $12,500/MWh and $15,000/MWh. The average USE across all outcomes and regions with a VoLL of $12,500/MWh is at or just below 0.002% from 2010 to 2013, before increasing in subsequent years. The average for a VoLL of $15,000/MWh is materially below 0.002% between 2010 and 2013, and does not exceed this level until 2017.[22]

With VoLL at $12,500/MWh, the CRR modelling results indicate a divergence in the amount of USE between the regions. However, CRA "noted that considerable care should be taken in interpreting regional results", and that "in particular the timing of peaks and troughs for any single region and the relativity between regions at any given times should be regarded as indicative only. During the course of the analysis it was evident that small shifts in the timing and location of investment in generation and transmission can lead to significant reordering of the relative results for the regions".[23] However, the differences between the regional outcomes are dependent, such that the average level of USE NEM-wide can be considered robust. The Panel consequently gave no weight to the regional differences indicated in the modelling results when formulating its recommendation as to the appropriate level of VoLL.

The Panel concluded that VoLL should be increased to $12,500/MWh with effect from 2010, but that incremental increases might be required in subsequent years and that these could be implemented through the biennial review process that the Panel has also developed. Issues specific to giving effect to the increase on 1 July 2010 in terms of the concomitant introduction of the CPRS are considered in section 3.5 (and

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21 CRA International 2007, pp.24-5.

22 Reliability Rule change proposal, Figures 10 and 11, pp.5 & 6.

23 CRA International 2007, p.19.

the review process is considered in section 3.4). However, the Commission agrees with the Panel that, all else being equal, an increase in VoLL would be required in 2010.

The updated modelling provided by the Panel also shows that a VoLL of $12,500/MWh, if incremented by inflation through the biennial review process, would be consistent with meeting the reliability standard, unlike a nominal VoLL of $10,000/MWh. This analysis shows that, with VoLL indexed from $12,500/MWh, USE is well within the standard on average across the NEM for the period studied.[24]

This modelling indicates that the reliability standard would be met in each region until 2013.[25] Under the modelled patterns of generator entry and exit it would be breached in South Australia from 2013 onwards. The analysis does, however, also indicate that this could be mitigated through a number of mechanisms, such as plant entry and exit or by investment in enhanced transmission capability between South Australia and Victoria. In any event, under the proposed review process the Reliability Panel will reassess the appropriate level of VoLL to apply from 2012 onwards.

The Commission has therefore concluded that VoLL should be increased to $12,500/MWh. The Commission considers that all of the available analysis indicates that a VoLL of $12,500/MWh would be consistent with meeting the reliability standard in the immediate future. The modelling shows that $12,500/MWh may be insufficient from 2013 onwards, and that a level of $15,000/MWh would be more appropriate from then to 2017.

However, the Commission believes that, although an increase to $15,000/MWh at this time would reduce the amount of USE, it would be unlikely to further promote achievement of the reliability standard than a level of $12,500/MWh. Such a move would therefore impose additional costs to consumers with little additional benefit in terms of meeting the reliability standard. If it continued to be the case that an increased level of VoLL was required from, say, 2013, the Commission notes that the Panel anticipates that such incremental increases are likely to be required, and has therefore proposed a review process that would allow for such changes to be made. Therefore, the Commission considers that any further increase can be reassessed in the future (see section 3.4).

The Commission considers that increasing VoLL to $12,500/MWh will contribute to the achievement of the NEO by promoting efficient investment and that this will further the long term interests of consumers of electricity in terms of representing an efficient balance between the price and reliability of supply of electricity.

[24] CRA International 2008, Figure 4, p.32.

[25] Ibid, Figures 16 and 28, pp. 42 & 56.

3.1.4 The Commission's changes to the Panel's proposed Rule

The Commission has not made any changes to this component of the Panel's proposed Rule.

3.1.5 The Commission's decision

The Commission has adopted the Panel's Rule change proposal:

1. **That the level of VoLL should not be maintained at $10,000/MWh; and**
2. **That the level of VoLL should be increased to $12,500/MWh.**

The change will be given effect through the revision to clause 3.9.4(b) in the draft Rule.

3.2 Linking the CPT to VoLL

3.2.1 The Panel's proposal

The Panel is proposing that the CPT be defined in the Rules as 15 times VoLL. This would maintain the current ratio of VoLL ($10,000/MWh) and CPT ($150,000), but, as a result of the increase in VoLL to $12,500/MWh, would have the consequence of increasing CPT to $187,500 with effect from 1 July 2010.

The Panel expressed a belief that retaining "the current relative level of the CPT (i.e. 15 times VoLL) is consistent with the philosophy that underpinned its creation, namely to act as a financial safety net without hindering investment." The Panel suggested that increasing VoLL without raising the CPT would result in an increased incidence of the application of the APC of $300/MWh, and "given that the CPT should only be exceeded in extreme conditions, the Panel's conclusion is that the level of CPT, relative to VoLL should remain unchanged".[26]

With regards to the better achievement of the NEO, the Panel stated that leaving the ratio of 15:1 between CPT and VoLL unchanged would maintain the "efficient operation of electricity services with respect to reliability as a financial safety net". The Panel also considered that formalising this ratio would maintain "efficient investment as the CPT is designed not to hinder investment by being set at a level that is unlikely to be triggered except in very extreme circumstances".[27]

3.2.2 Stakeholder views

In response to the Panel's Exposure Draft, the ERAA expressed support for the CPT to be defined as 15 times VoLL. It considered that "increasing the level of VoLL while not increasing the CPT could lead to the CPT being triggered too frequently and thus interfering with normal market clearing mechanisms".[28]

The AER noted that, while VoLL is primarily set with regard to encourage generation investment, the CPT is primarily designed to manage the risk to market participants, and considered that "changes to the CPT, therefore, should receive careful consideration in their own right rather than simply being treated as an adjunct to the MPL [VoLL]".[29] The AER further suggested that "it is also not clear that the current level of the CPT needs to be increased to ensure that it does not hinder investment. Indeed, the exposure draft indicates that the Panel's modelling suggests that an increase in the CPT will not result in any reduction in unserved energy".[30]

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[26] Reliability Panel Rule change proposal, p.12.

[27] Ibid, p.28.

[28] ERAA submission, p.2.

[29] AER submission, p.4.

[30] Ibid.

Citing the "financial stress experienced by market participants" during the CPT breach event in South Australia in March 2008 and the AER's "uncertainty over whether an increase in the CPT will be effective in promoting investment", the AER questioned "whether it would be beneficial to increase the CPT at this time", and instead suggested that a decision on the CPT should be delayed "until a separate review that considers the appropriate design and level of the CPT in light of recent market experience has been completed".[31]

The Panel noted the AER's comments, and suggested "that a future reliability review of the reliability standards and settings could revisit the effectiveness of the CPT".[32]

3.2.3 The Commission's assessment

The Commission believes that the AER's comments relate to the Panel's statement in the Exposure Draft that "the modelling undertaken by the Panel in the CRR Report indicated that any lowering of the CPT would result in an increase in the number [of] incidences where the reliability standard may be exceeded, while an increase would not result in any reduction in USE".[33] This statement was repeated in the Panel's Rule change proposal.[34]

The Commission understands that this statement refers to the optimal relative relationship between CPT and VoLL. That is to say, if VoLL was set correctly (i.e. at a level which facilitates the most appropriate amount of generation investment to meet the reliability standard), lowering the CPT would be likely to increase the number of instances in which APPs were triggered, decreasing generators' returns, with the potential result of less generation investment and therefore an increased risk of breaching the reliability standard. On the other hand, if CPT had been set optimally, increasing it would be likely to increase the returns available to generators, but it would be triggered so infrequently (i.e. only in extreme circumstances) that it would be unlikely to encourage any further investment. In any event, the reliability standard should have already been met.

The Panel's philosophy in selecting an appropriate level of CPT therefore would appear to be to set it at a level at which it would not "bite" in normal circumstances, but which would still protect retailers (and therefore consumers) from extreme events.

The modelling undertaken for the CRR Final Report did not explicitly include the effects of the CPT, due to the computational complexity involved and because the modelling was not structured to simulate sequential half hours.[35] However, it was possible to compute the number of times the CPT would be likely to be breached.

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[31] AER submission, p.5.

[32] Reliability Panel Rule change proposal, p.15.

[33] Reliability Panel, *NEM Reliability Settings: VoLL, CPT and Future Reliability Review, Exposure Draft for Consultation*, p.13, September 2008.

[34] Reliability Panel Rule change proposal, p.10.

[35] CRA International 2007, p.33.

With the current settings of VoLL of $10,000/MWh and a CPT of $150,000 the average chance of breaching CPT in 2008 and 2009 was found to be in the order of 0.1 occurrences per year.[36] This suggests that this level of incidence would be appropriate when determining the level of CPT to apply for a given level of VoLL. However, the modelling report did not include any analysis on the incidence of CPT breaches triggered for differing levels of CPT with a VoLL of $12,500/MWh.

The risk assessment undertaken by Concept Economics highlighted that increasing VoLL without increasing CPT would trigger administered prices earlier and more frequently. Of the two events considered in this report, the revenue available to generators would not have increased materially in South Australia in March 2008 had VoLL been $12,500/MWh but CPT retained $150,000, where as there would have been a limited increase in New South Wales in June 2008.[37] Concept Economics concluded that "retaining the CPT at the current level will not serve one of the main goals that was set out to ensure adequate return to generators".[38]

Although the report identified that failing to increase CPT above $150,000 would act to largely frustrate the achievement of the main aim of the VoLL increase, identification of the optimum level of CPT was outside of the scope of the report. However, the report did assert that "a commensurate increase in CPT with VoLL maintains the risk of a CPT breach at approximately the same level at the current level".[39]

This appears to be based on further market analysis in the report which models the chances of the cumulative price reaching a level where there is a very high risk of the CPT being breached. This shows that, if VoLL was increased to $12,500 but the CPT was unaltered at $150,000, there would have been a 99% probability of cumulative prices exceeding 95% of the CPT in South Australia in March 2008. However, this probability would have been decreased to 9% with a VoLL of $12,500/MWh and a CPT increased to $187,500. This would be broadly consistent with the 29% probability of cumulative prices exceeding 95% of the CPT that was modelled with a VoLL of $10,000/MWh and a CPT of $150,000 (although, in reality, CPT was breached).[40]

For New South Wales in June 2008, there would have been a 0% chance of cumulative prices exceeding 95% of the CPT with a VoLL of $10,000/MWh and a CPT of $150,000 (in reality, it was not breached) and, similarly, a 0% chance with a VoLL of $12,500/MWh and a CPT of $187,500. However, there would have been a

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[36] CRA International 2007, Figure 22, p.33.

[37] Concept Economics, Tables 12 and 13. Average Super Peak prices (those above $1,000/MWh) in South Australia in March 2008 were modelled as only increasing from $7,651/MWh with VoLL of $10,000/MWh and CPT of $150,000 to $7,684/MWh with a VoLL of $12,500/MWh and a CPT of $150,000. If CPT is increased (to $187,500) as well as VoLL, the average price increases to $9,403/MWh. In New South Wales in June 2008, the corresponding prices are $5,423/MWh, $6,080/MWh and $6,451/MWh.

[38] Ibid, p.62.

[39] Ibid, p.64.

[40] Ibid, Table 6, p.42.

24% probability if VoLL was increased to $12,500/MWh but CPT was unaltered at $150,000.[41]

In its Rule change proposal, the Panel highlighted that "raising VoLL without raising the CPT would result in increased incidence of application of the APC", thereby hindering investment. The Panel concluded that "given that the CPT should only be exceeded in extreme conditions… the level of CPT, relative to VoLL, should remain unchanged". However, the Panel suggested "that a future reliability review of the reliability standards and settings would be an appropriate time to revisit the effectiveness of the CPT".[42]

Given the Commission's determination to increase the level of VoLL to $12,500/MWh, the Commission agrees that failure to increase the absolute level of CPT would result in an increase of the number of CPT breaches, thereby frustrating achievement of the aim of the increase in VoLL. The Commission therefore agrees that the absolute level of the CPT should be increased.

However, the Commission has some reservations about the evidence presented to it with regards to what, exactly, would be the most appropriate level for the CPT. The Commission understands the intuitive logic that maintaining the level of the CPT relative to that of VoLL would be likely to result in the same level of incidence of CPT breach. Additionally, the limited modelling undertaken in this area is broadly consistent with such a conclusion, and there appears to be no evidence to the contrary.

The Commission therefore believes that the best available evidence at present indicates that setting CPT at a level of $187,500 would maintain an appropriate level of incidence of CPT breach. This value, equivalent to 15 times a VoLL of $12,500/MWh, is that which has been signalled to the market as an outcome of the CRR. The Commission also agrees with the Panel that it would be appropriate for Panel to reconsider the effectiveness of the CPT in its next review of the reliability standard and settings (see section 3.4).

However, the Commission has determined to set the CPT at an absolute level of $187,500, to apply from the same date as the increase in VoLL (see section 3.5), rather than "hard wire" a ratio of 15 times VoLL. The Commission believes that this would be consistent with the Panel's proposal that every two years the Panel should review each of the three reliability settings (VoLL, the CPT and the market floor price). The Commission believes that, by defining the CPT as a value relative to that of VoLL, the CPT might be perceived as being consequential or subordinate to VoLL. The Commission considers that to define a constant ratio between the two variables would require more evidence that such a relationship is robust for all levels of VoLL and CPT, although the Commission does not preclude the possibility that the Panel may provide satisfactory evidence that such a linkage exists at a future review.

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[41] Ibid.

[42] Reliability Panel Rule change proposal, p.12.

The Commission considers that increasing the CPT to $187,500 will contribute to the achievement of the NEO by still allowing for an efficient level of investment in electricity services, which is in the long term interest of consumers with respect to reliability, while providing an appropriate level of protection to such consumers with respect to the price of electricity through the prevention of extended periods of very high prices that might result in certain extreme circumstances.

3.2.4 The Commission's changes to the Panel's proposed Rule

For the reasons set out above, the Commission has determined that the CPT should continue to be defined as an absolute value, rather than being set relative to VoLL. Instead of the Panel's proposed definition of the CPT in clause 3.14.1(c) of the Rules of 15 times VoLL, the new definition will simply be that the CPT is $187,500.

However, under the Panel's proposal, the increase in the CPT would have automatically taken effect at the same time as the change in VoLL. Under the Commission's revised definition, it will additionally be necessary to state that the level of $187,500 will be effective from 1 July 2010 (see section 3.5).

This is the key change that has led to the Commission making the draft Rule as a more preferable Rule. In this regard, the Commission considers that its more preferable Rule to define the CPT as $187,500, rather than 15 times VoLL, will better contribute to the achievement of the NEO than the Panel's proposed Rule in that the increased focus on the most appropriate value of the CPT it should bring to future reviews of the reliability settings will ensure that the appropriate value of the CPT is considered in its own right rather than as a matter that is merely ancillary to the appropriate level of VoLL. Given the important role that the CPT plays, the review of the CPT in this way will better promote the long term interests of consumers of electricity by enabling the review of the CPT to focus on achieving an appropriate balance between efficient investment in reliable electricity services and protecting consumers from extended periods of high prices.

3.2.5 The Commission's decision

The Commission has adopted the Panel's Rule change proposal to:

1. Change the definition (and therefore the level) of the CPT.

The Commission has amended the Panel's proposed Rule to:

1. Define the level of the CPT as an absolute value of $187,500.

The change will be given effect through the revision to clause 3.14.1(c) in the draft Rule.

3.3 Renaming "VoLL"

3.3.1 The Panel's proposal

The Panel is proposing that term "Value of Lost Load (VoLL)" be changed to the "Market Price Limit (MPL)".

The Panel expressed a belief that "the use of the term 'Value of Lost Load (VoLL)' to describe what is clearly an upper limit on the market price is misleading. This is because a true value for VoLL would be based on a theoretical price at which customers would rather have interrupted supply than pay the market price for electricity, as opposed to a level of VoLL in reference to projections of meeting a USE reliability standard". The Panel further noted that such a change would "bring the titles of the two terms 'Market Price Limit' and 'Market Floor Price', which define the wholesale price ranges in the NEM, into alignment".[43]

With regards to the better achievement of the NEO, the Panel stated that it considers "that renaming the term 'VoLL' promotes the efficient use of electricity services through clarification of the term as a market price limit and avoids any misunderstanding as to the true meaning of VoLL".[44]

3.3.2 Stakeholder views

In response to the Panel's Exposure Draft, the ERAA expressed support for replacing the term VoLL with MPL, considering that as "VoLL is in fact the upper price limit in the market… the MPL nomenclature therefore provides a more appropriate description of what VoLL actually is".[45]

3.3.3 The Commission's assessment

The Commission agrees with the Panel's assessment that the usage of the term "VoLL" is misleading, in that the term implies a price at which customers would rather have supply interrupted than pay the market price for electricity. The price limit in question is actually a setting determined with reference to projections of meeting a USE reliability standard.

The Commission therefore concurs with the Panel that renaming the term "VoLL" would contribute to the achievement of the NEO by promoting the efficient use of electricity services with respect to price by clarifying the nature of the term as a price limit and thereby avoiding any misunderstanding as to the meaning of the term or its derivation.

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[43] Reliability Panel Rule change proposal, p.12.

[44] Ibid, p.28.

[45] ERAA submission, pp.2-3.

3.3.4 The Commission's changes to the Panel's proposed Rule

Although the Commission agrees with the Panel's arguments with regards to renaming the term "VoLL", the Commission believes that it would be possible to devise a more precise replacement term than "Market Price Limit (MPL)", as proposed by the Panel.

The Commission notes the Panel's view that "Market Price Limit" would be consistent with the term "Market Floor Price", which defines the other end of the permissible wholesale price range in the NEM. However, the Commission notes that both "VoLL" and the "Market Floor Price" could be considered to be market price limits, defining the upper and lower limits, respectively. The Commission therefore believes that a replacement term for "VoLL" should specify that it refers to the upper market price limit.

The Commission has concluded that the most appropriate terminology for the upper and lower market price limits would be the "Maximum Market Price" and the "Minimum Market Price", respectively. This would also ensure consistency between the two terms. The Commission is therefore proposing that, as well as renaming "VoLL", the term "Market Floor Price" should also be replaced.

While the Commission considers that renaming the term "VoLL" as the "Market Price Limit" would contribute to the achievement of the NEO, it has concluded that instead renaming the term the "Maximum Market Price", and renaming the term "Market Floor Price" the "Minimum Market Price", would further clarify the nature of the terms as upper and lower price limits, better promoting the efficient use of electricity services and thereby better contributing to the achievement of the NEO.

3.3.5 The Commission's decision

The Commission has adopted the Panel's Rule change proposal to:

1. **Rename the existing "VoLL" term.**

The Commission has amended the Panel's proposed Rule to:

1. **Introduce the term "Maximum Market Price" rather than "Market Price Limit" as the replacement for "VoLL', and rename the term "Market Floor Price" as the "Minimum Market Price".**

The change will be given effect through the revisions to clauses 3.3.17, 3.8.6, 3.8.6A, 3.8.7, 3.8.7A, 3.8.14, 3.9.2, 3.9.2A, 3.9.4, 3.9.5, 3.9.6, 3.9.6A, 3.12A.7, 3.14.3, 3.14.6, and 3.15.10, clause (j) in Chapter 8A, Part 8, and the definitions in Chapter 10 in the draft Rule.

3.4 Future Reliability Reviews and Reporting

3.4.1 The Panel's proposal

The Panel is proposing that the current annual review of VoLL be replaced with a reliability standards and settings review (i.e. the reliability standard, VoLL, the CPT and the market floor price) which is to take place every two years, with two years' notice of any change.

The Panel's view is that "all the reliability settings (i.e. the reliability standard, VoLL, the CPT, and the market floor price) have an effect (though not necessarily an equal one) on USE and so should all be reviewed together", and that "this would also mean that any adjustments to the reliability settings, to ensure the reliability standard is met, will be more effective".[46]

The Panel also set out its conclusion from the CRR "that VoLL should be reviewed less frequently than every year, and that it was more appropriate to review the level of VoLL in conjunction with a regular and integrated review of the reliability settings".[47] The Panel believes that such a biennial process would represent "an appropriate balance between certainty for consumers on one hand; and the need to maintain appropriate and timely vigilance in relation to overall NEM reliability performance."[48] The Panel further suggested that these reviews could be completed in a very much shorter period of time than the CRR.

With regards to the promotion of the NEO, the Panel considers that the proposed process would achieve "the long-term interests of consumers in the future reliability settings which influence price, and the long-term interests of investors about potential returns on their investments. The Panel anticipates that the reliability settings being reviewed together promotes the long term interest of consumers and electricity as it ensures the reliability standard is met and becomes more effective".[49]

3.4.2 Stakeholder views

In response to the Panel's Exposure Draft, the ERAA expressed a view that "the Panel's proposal to review all the reliability settings in an integrated way every two years, and with a two year notice period, is reasonable". It suggested that the proposed process would "provide investors with enough certainty and scope to modify their risk management arrangements in an orderly manner while providing the Panel with sufficient opportunity to make appropriate changes to the reliability settings in response to longer term directions in market fundamentals".[50]

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[46] Reliability Panel Rule change proposal, p.14.

[47] Ibid.

[48] Ibid, pp.15-16.

[49] Ibid, p.28.

[50] ERAA submission, p.3.

The ERAA further noted that the proposed approach would "not preclude alternate one off adjustments to the settings via a Rule change, should such adjustments prove necessary between scheduled adjustments periods".[51]

3.4.3 The Commission's assessment

The Commission notes the current requirements on the Panel under the Rules to review the values of VoLL[52] and the Market Floor Price[53] each year. By linking the definition of CPT to that of VoLL, the Panel's Rule change proposal would have, in any event, given effect to a requirement on the Panel to jointly review all the reliability settings on an annual basis. However, the Commission considers that there would be merit in also reviewing the reliability standard in an integrated manner with the settings designed to facilitate the achievement of it. The Commission's decision to set CPT as an absolute value also reinforces the need to explicitly include review of this setting as part of the process.

The Commission therefore agrees with the Panel that an integrated review process is likely to increase the effectiveness of the reliability settings in meeting the reliability standard, and would consequently be likely to contribute to the achievement of the NEO by promoting the long term interests of consumers of electricity with respect to reliability.

The Panel's proposal is that this review of the reliability standard and settings be conducted by 30 April every two years, instead of every year as is the case for the existing review process. Under the current process, the Panel reviews VoLL and the market floor price by 30 April each year, and recommends the value of VoLL to apply from 1 July two years after the review and the market floor price from 1 July one year after the review. The Panel's proposal is that all changes to the reliability standard and settings would take effect from 1 July two years after the review.

The Commission notes that the Panel's recommendations from a review are not automatically binding. That is to say that the Panel, following its review, would need to propose a Rule change to implement any recommendations to change reliability settings. Even if such a proposal were "fast tracked", the Rule change process could be expected to take approximately 6 months from lodging to final determination. Therefore, following the conclusion of the Panel's review on a 30 April, the Panel's recommended changes would be unlikely to be confirmed (if approved by the Commission) significantly before the end of the year. Under the current process, the final notification period for changes in VoLL is consequently likely to be about 18 months, and for changes in the market floor price is likely to be little more than 6 months.

The Commission notes the Panel's view that investors seek certainty, and that, in this case, certainty would be affected by both the frequency of changes to the reliability

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[51] ERAA submission, p.3.

[52] National Electricity Rules, 3.9.4(c).

[53] Ibid, 3.9.6(c).

settings and by the length of the notification period for such changes. The Panel further noted that "advance notice of any change to VoLL is necessary so that market participants can adjust their risk management arrangements accordingly and make any other necessary adjustments to trading conditions such as the level of contracting that might be appropriate for a material change", and that "the volatility of revenue for investors in peak plant will be more affected by changes in the level of VoLL than revenue for investors in base load plants".[54]

In formulating a revised review process to consider the reliability standard and all reliability settings, the Commission considers that a final notification period based on the current process for changes to the market floor price (which, as noted above, is likely in practice to be little more than 6 months), would give insufficient notice to market participants, given the significance of the parameters potentially being revised. The Commission therefore agrees with the Panel's proposal to base the notification period on the current process for changes to VoLL, such that all changes to the reliability standard and settings would take effect from 1 July two years after the review.

As set out above, following the consequential Rule change (and assuming its approval), the final notification period under such a process is likely to be about 18 months. The Commission notes that this would be consistent with the determination of the Australian Competition and Consumer Commission (ACCC) in approving the last increase in VoLL. In this instance, the ACCC considered that a notice period of approximately 16 months, following its final determination, was appropriate.[55]

The Commission also agrees with the Panel's proposal that reviews of the reliability standard and settings would be undertaken every two years, instead of every year as is the case for the existing review process for VoLL and the market floor price. The Commission believes that, this would represent an appropriate balance between giving certainty to market participants and retaining sufficient flexibility to recommend changes to market settings. The Commission notes that VoLL was last increased in April 2002, and therefore considers that annual changes are unlikely to be required and would be likely to undermine the stability of the market.

The Commission also considers, given the length of time required to review the reliability standard and settings, that an annual review could be impossible or, at least, impractical in that reviews would almost constantly be in progress. This Rule change proposal arose from the CRR, which was prompted by the Commission's direction to the Panel in December 2005, and for which the final report was published December 2007. Although, the Commission accepts the Panel's view that "the proposed future biennial reviews of the reliability standard and settings would be completed in a very much shorter period of time" than the CRR,[56] the Commission believes that it would be inappropriate to undertake a review of the required scope and complexity every year.

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[54] Reliability Panel Rule change proposal, p.13.

[55] ACCC, *Determination – Applications for Authorisation: VoLL, Capacity Mechanisms and Price Floor*, p.51, 20 December 2000.

[56] Reliability Panel Rule change proposal, p.16.

The Commission therefore considers that a biennial review of the reliability standard and settings with two years' notice of any recommended changes would promote efficient investment by balancing the certainty required by investors with the flexibility to reassess the most accurate reliability standard and settings. This would best promote the long term interests of consumers with respect to the reliability of supply of electricity, thereby better contributing to the achievement of the NEO.

3.4.4 The Commission's changes to the Panel's proposed Rule

The Commission has not made any substantive changes to this component of the Panel's proposed Rule.

3.4.5 The Commission's decision

The Commission has adopted the Panel's Rule change proposal to:

1. **Regularly review the reliability standard and all reliability settings in an integrated manner; and**
2. **For this review to be conducted by 30 April every second year. Any recommended changes (including proposed Rule changes) would be to apply from 1 July in the year commencing 2 years after the year in which the review was conducted.**

The change will be given effect through the introduction of clause 3.9.3A and the new definition in Chapter 10, the revisions to clause 3.9.4(c), 3.9.4(c1), 3.9.4(c2), 3.9.4(d), 3.9.6(d), and 3.9.6(e), and the omission of clause 3.9.6(c) in the draft Rule.

3.5 Effective date

3.5.1 The Panel's proposal

The Panel's proposal is that the increase in the level of VoLL to $12,500/MWh, and therefore the consequential increase in the CPT, should be effective from 1 July 2010. This was driven by the view of the Panel that its "modelling clearly shows the risk to the market of the reliability standard being breached if VoLL is not raised to $12,500/MWh on 1 July 2010".[57]

However, following the publication of the CRR, the Federal Government announced plans for a CPRS and expanded RET, with the intention of introducing the CPRS on 1 July 2010. The Panel therefore "sought views from stakeholders on the appropriateness of also raising VoLL and the CPT on the same date".[58]

3.5.2 Stakeholder views

In response to the Panel's request for views contained in the Exposure Draft, the ERAA stated that it was "unconcerned with the AEMC's proposal to implement the changes to the reliability settings on the same day as the scheduled commencement of the Carbon Pollution Reduction Scheme". It believed that the CPRS and expanded RET would "lead to a significant increase in the volume of intermittent generation entering the NEM", which would "need to be supported with 'back up' gas fired peaking capacity ", and that "a further future increase in the level of VoLL is likely to be required to sustain investment signals for this type of generation".[59]

The ERAA additionally considered that an increase in VoLL should help address the "general market uncertainty surrounding the impacts of CPRS and RET… by increasing potential revenues for generation while at the same time strengthening incentives to enter into contracts". It concluded that, given the proposed "increase in VoLL and the CPT is being implemented in order to support market sustainability, it appears sensible for the [*sic*] both the CPRS and increase in VoLL to occur concomitantly. Over time further review of VoLL may be required if investment in new generation stagnates, and therefore delaying the current increase because of CPRS implementation would appear counter-intuitive".[60]

In contrast, the AER considered that "the introduction of the CPRS is a major change for the market to accommodate" and that "introducing an increased MPL [VoLL] and CPT on the same day may amplify the impact of any market shocks created by the introduction of the CPRS".[61]

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[57] Reliability Panel Rule change proposal, p.7.

[58] Ibid, p.14.

[59] ERAA submission, pp. 1-2.

[60] Ibid, pp.2-3.

[61] AER submission, p.6.

The AER noted that "with the finalisation of the CPRS, the policy uncertainty leading to any investment deferral will have been dealt with" and that "by September 2009 the AEMC will have completed its Review of Energy Market Frameworks in light of Climate Change Policies". The AER therefore expressed a belief "that the implications of any recommendations arising from the AEMC review should be considered before proceeding with the current Rule change proposal". It suggested that if the most significant issue influencing investment was "the uncertainty around the CPRS, increasing MPL [VoLL] and the CPT may deliver higher prices for consumers but do very little to promote investment necessary to ensure reliability".[62] The AER therefore concluded that "it may be prudent to delay the increase in the MPL [VoLL] and the CPT until the market is more comfortable with the CPRS".[63]

In response to these submissions, the Panel noted the AER's concern with respect to the potential impacts of raising VoLL and the CPT on the same day as the introduction of the CPRS. However, the Panel considered "that unless action is taken now, leaving VoLL and the CPT at its current level could result in a breach of the reliability standard sometime between 2010 and 2014 irrespective of the CPRS". The Panel further noted "that NEMMCO has factored the commencement on 1 July 2010 of the Panel's proposed levels for VoLL and the CPT for the market in its 2008 Statement of Opportunities".[64]

3.5.3 The Commission's assessment

The Commission notes the arguments put forward by the AER regarding the policy uncertainty that has been present prior to the announcement of the CPRS and expanded RET, and that, post-implementation, it may take the market some time to become comfortable with the CPRS. However, the Commission also notes the AER's view that, given the significant period of time that has elapsed since the last increase in VoLL, that it may not be inappropriate that VoLL is increased.

The AER suggested that, given the Commission is undertaking a Review of Energy Market Frameworks in light of Climate Change Policies which is due to be completed in September 2009, the implications of any recommendations arising from this review should be considered before proceeding with this Rule change. As part of the review, the Commission requested that the Panel provide updated analysis to assess the impact on reliability of the introduction of the CPRS and expanded RET, and this was published in December 2008 (after the close of submissions to the Exposure Draft).[65]

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[62] AER submission, p.3.

[63] Ibid, p.6.

[64] Reliability Panel Rule change proposal, p.15.

[65] CRA International 2008.

The analysis concluded that, for the range of carbon price paths studied,[66] the level of VoLL had the most significant effect on the outcomes, "larger than the effects of the CPRS or MRET or other factors analysed. The significance of the level of VoLL is consistent with the Panel's previous conclusions the led to its recommendation that VoLL should be increased".[67] The results of the modelling undertaken reaffirmed "that the current level of VoLL ($10,000/MWh without indexing) is unlikely to allow sufficient investment to meet the NEM reliability standard in the future", where as "the proposed level of $12,500/MWh if incremented over time at the assumed CPI [through the biennial review process], has the potential to support sufficient investment to meet the reliability standard".[68]

The Commission therefore agrees with the Panel and with the ERAA that leaving VoLL at its current level risks a breach of the reliability standard soon after 2010, irrespective of the introduction of CPRS, and that there is no convincing evidence to suggest that the CPRS or expanded RET is likely to allow for a level of VoLL less than $12,500/MWh. The Commission notes that no market participants have raised any concerns over the timing of the increase, and that the evidence suggests that the climate change policies are likely to put further upward pressure on generation costs.[69]

The Commission considers that there is a demonstrable need for VoLL to be increased, and that any delay at this stage would unacceptably increase the risk that the reliability standard could be breached, as well as causing unnecessary uncertainty. The Commission further sees no reason why the increase in VoLL should not take effect on the same date as the introduction of the CPRS.

3.5.4 The Commission's changes to the Panel's proposed Rule

The Commission has not made any changes to this element of the Panel's proposed Rule.

3.5.5 The Commission's decision

The Commission has adopted the Panel's Rule change proposal for:

1. The increase in VoLL and the CPT to take effect on 1 July 2010.

These changes will be given effect through the revision to clauses 3.9.4(b) and 3.14.1(c) in the draft Rule.

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[66] The modelling examined three different carbon prices: 1) starting at $10/tonne of CO2e in 2010 and increasing by 4 per cent p.a. above inflation; 2) starting at $20/tonne of CO2e in 2010 and increasing by 4 per cent p.a. above inflation; and 3) starting at $30/tonne of CO2e in 2010 and increasing by 8 per cent above inflation.

[67] CRA International 2008, p.30.

[68] Ibid, p.2.

[69] See the AEMC's *Review of Energy Market Frameworks in light of Climate Change Policies: 1st Interim Report*, 23 December 2008, for more discussion of this issue.

3.6 AER reporting threshold

3.6.1 The issue

During its consideration of the Rule change proposal, the Commission became aware of an additional, related issue. Under the Rules, the AER must prepare and publish a report where spot prices exceed $5,000/MWh, and this threshold may be, at least implicitly, related to the level of VoLL.

On 20 December 2000, the ACCC issued a Determination relating to VoLL, capacity mechanisms and the price floor.[70] In addition to increasing VoLL from $5,000/MWh to $10,000/MWh with effect from April 2002, this Determination considered perceptions of market power manifested in the NEM, and appointed the National Electricity Code Administrator (NECA) a market monitoring role to address any such exercise of market power.

This monitoring role is now carried out by the AER, and has been incorporated into clause 3.13.7(d) of the Rules. This clause directs the AER to prepare and publish a report if the spot price exceeds $5,000/MWh in a trading interval. The Rules specify that the report must:

1. describe the significant factors that contributed to the spot price exceeding $5,000/MWh, including the withdrawal of generation capacity and network availability;
2. assess whether rebidding pursuant to clause 3.8.22 contributed to the spot price exceeding $5,000/MWh; and
3. identify the marginal scheduled generating units for the dispatch intervals in the relevant trading interval and all scheduled generating units for which any dispatch offer for the trading interval was equal to or greater than $5,000/MWh and compare these dispatch offers to relevant dispatch offers in previous trading intervals.

In the ACCC's 2000 Determination, a clear link was drawn between the level at which VoLL is set and the extent of the exercise of market power. The ACCC commissioned research from Intelligent Energy Systems (IES) which found that "where a generator with market power has uncommitted capacity, it can improve profitability through the withdrawal of capacity, an incentive which increases with the level of VoLL".[71]

IES also found that under such scenarios where generators exercise market power, an increase in VoLL may lead to an increase in spot prices and contract risk premiums. Following these considerations, the ACCC decided to limit the increase in VoLL to $10,000/MWh and, citing examples of overseas markets with market monitoring

[70] ACCC, December 2000.

[71] Ibid, p.48.

regimes, to institute the $5,000/MWh market report.[72] This obligation is intended to trigger a report when any major price spikes occur in the NEM and to examine the reasons why the price reached such levels.

Given this link between the setting of VoLL and the AER reporting threshold, the Commission identified that this draft Rule determination should include consideration of the threshold, despite it not forming part of the Rule change proposal.

3.6.2 Stakeholder views

This issue was not included in the Panel's Exposure Draft or Rule change proposal, and therefore no stakeholder views on this subject were expressed in response to the Exposure Draft. The AER did not raise the issue in their submission.

As the issue was not included in the Panel's Rule change proposal, it would have not been highlighted prior to the draft determination even if the Rule change had not been "fast tracked".

3.6.3 The Commission's assessment

The Commission considers that the AER reporting threshold should be set at such a level that it continues to trigger the review process for all extreme price events, but also such that it is not triggered by the more regular peaks and troughs in prices produced by more normal conditions in the market.

The Commission notes that the AER published nine $5,000/MWh reports in 2008, eight reports in 2007 and six reports in 2006. The extent of these reports varies, with some covering one half-hour trading period in a single jurisdiction, and others covering multiple periods in multiple jurisdictions. The nine reports published in 2008 covered a total of 84 half-hour trading intervals in various regions of the NEM, with the volume weighted average spot price for each of these region half-hours being $8,519/MWh.[73] Of these 84 trading intervals, 45 had prices in excess of $9,900/MWh.

Any adjustment in the setting of VoLL has the potential to change the distribution of prices that generators offer into the market, and the spot prices that will result. It is likely that any increase in VoLL (if accompanied by an increase in the CPT) will allow generators to bid more aggressively during periods of supply constraint or increased demand. Concept Economics, in its risk assessment, found that, given an increase of VoLL to $12,500/MWh and the CPT to $187,500, their market simulation produced prices for the modelled periods (March 2008 in South Australia and June

[72] Ibid p.51.

[73] AER website and NEMMCO data, current as at 24 February 2009.
http://www.aer.gov.au/content/index.phtml/itemId/714860
http://www.nemmco.com.au/data/aggPD_2006to2010.htm#aggprice2008link

2007 in New South Wales) which were around 20% higher than the prices which were actually achieved in the base case.[74]

This modelling suggests that an increase in VoLL and CPT is likely to see a corresponding increase in the level of prices for high price events, with prices increasing further past the $5,000/MWh reporting threshold. The relevant question in this context is whether this will mean an increased occurrence of trading periods with prices above $5,000/MWh, or if the number of trading periods with prices above $5,000/MWh will remain relatively unchanged but with higher price outcomes.

The modelling undertaken by CRA International on behalf of the Panel suggests that the difference between average NEM prices with a VoLL of $10,000/MWh and with a VoLL of $12,500/MWh would be insignificant in the first 2-3 years following implementation.[75] This would tend to support the hypothesis that trading periods with prices above $5,000/MWh will experience higher prices but that that the number of trading periods captured by the threshold would not increase significantly, although it is far from definitive evidence. Given this uncertainty, retaining the current threshold is likely to be the most effective strategy for ensuring that all events captured by the current threshold would continue to be captured for review following the increase in VoLL.

The Commission has therefore concluded that the $5,000/MWh AER reporting threshold should not be revised at this time. If, following experience of the increase in VoLL, it was found that an unnecessary number of events were being captured by the $5,000/MWh threshold and therefore imposing regulatory costs with no benefits, it would be possible for any stakeholder, including the AER, to propose a Rule change to amend the threshold. Given that the level of the reporting threshold would not influence achievement of the reliability standard, the Commission also considers that this threshold should not be included in the reliability settings biennial review.

3.6.4 The Commission's changes to the Panel's proposed Rule

After considering this issue, the Commission has decided not to make any changes to the Panel's proposed Rule in order to amend this threshold.

3.6.5 The Commission's decision

The Commission has decided not to make any changes to the $5,000/MWh threshold which defines the requirement on the AER to prepare and publish reports. Therefore, no changes to the Rules are required in this respect.

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[74] Concept Economics, pp. 38-39.

[75] CRA International 2008, Figures 5 and 7, pp. 33-34.