Australian Energy Market Commission

RULE CHANGE

DRAFT RULE DETERMINATION

National Electricity Amendment (Reliability Settings from 1 July 2012) Rule 2011

Rule Proponent(s)
Reliability Panel

Commissioners
Pierce
Spalding

24 March 2011

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For and on behalf of the Australian Energy Market Commission

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AEMC 2011, Reliability Settings from 1 July 2012, Rule Determination, 24 March 2011, Sydney

About the AEMC

The Council of Australian Governments, through its Ministerial Council on Energy (MCE), established the Australian Energy Market Commission (AEMC) in July 2005. The AEMC has two principal functions. To make and amend the national electricity and gas rules - and to conduct independent reviews of the energy markets for the MCE.

Executive summary

The Australian Energy Market Commission (AEMC or Commission) has decided to make a draft Rule in response to the Reliability Panel's Rule change request regarding Reliability Settings from 1 July 2012.

The Proponent's Rule change request

On 27 August 2010, the Reliability Panel (the Proponent) submitted a Rule change request to the Commission. In summary, the Rule change request proposed the introduction of:

- a new mechanism to adjust the values of the market price cap (MPC) and the cumulative price threshold (CPT) in line with changes in the Intermediate (Stage 2) Producer Price Index (Stage 2 PPI) on an annual basis with effect from 1 July 2012; and

- an annual review process to be undertaken by the Reliability Panel to determine whether the index is no longer appropriate with regard to how the indexed MPC and CPT impact on spot prices, investment and the reliability of the power system. The existing requirement for the Reliability Panel to undertake a biennial review of the Reliability Standard and Settings would be removed.

The MPC and CPT are the key parameters governing the price envelope within which energy supply and demand are balanced in the National Electricity Market (NEM). The MPC is a cap on spot market prices in each half-hour trading interval and is currently set at $12 500/MWh. The CPT governs the introduction of a lower administered price cap (APC) and is triggered if the sum of spot market prices over a consecutive seven day period exceeds a certain level. The CPT is currently set at $187 500.

These Reliability Settings are important in limiting financial exposure for market participants and consumers while still allowing sufficiently strong signals to ensure that generation investment is consistent with meeting the Reliability Standard. The Reliability Standard defines the appropriate level of reliability for the NEM in terms of the maximum permissible unserved energy per year and is determined by the Reliability Panel.

The Commission's draft Rule determination

The Commission's draft decision is to make a more preferable Rule. The draft Rule incorporates many of the features proposed in the Rule change request, in particular the introduction of a mechanism to index the MPC and CPT.

However, the draft Rule utilises the Consumer Price Index (CPI), rather than the Stage 2 PPI, for this purpose. It also does not adopt the Proponent's proposal for an annual review of the appropriateness of indexation. Instead, the draft Rule includes a requirement for a four-yearly comprehensive review of the Reliability Standard and

Settings, including indexation, to be undertaken by the Reliability Panel. This would replace the current biennial review process.

Reasons for the Commission's draft Rule determination

The Commission is satisfied that the draft Rule meets the Rule making test in that it is likely to contribute to the achievement of the National Electricity Objective (NEO). Moreover, the Commission is satisfied that the draft Rule is likely to better contribute to the achievement of the NEO than the proposed Rule.

In particular, the Commission considers that the draft Rule is likely to contribute to more efficient investment in electricity services for the long term interests of consumers of electricity with respect to the price and reliability of supply of electricity. This is because it will promote greater certainty for investors, incentivising an efficient level of investment consistent with the meeting of the Reliability Standard.

In coming to this view, the Commission considers that the draft Rule will:

- allow for a market price envelope that provides incentives for investment to deliver the Reliability Standard while limiting the financial exposure of market participants and consumers. Indexation of the MPC and CPT to maintain their values in real terms is more likely to allow for an efficient level of investment in generation and therefore provide an appropriate balance between price and reliability outcomes;

- provide a greater measure of certainty and predictability for market participants through the extension of the time period between reviews of the Reliability Settings from two to four years. The implementation of a predetermined and transparent process for calculating annual incremental increases to the MPC and CPT between reviews will allow for the frequency of the reviews to be reduced. This will decrease the financial risks to market participants associated with uncertain changes resulting from these reviews;

- send a clear signal to the market that the intention in the National Electricity Rules (Rules) is to preserve the value of the Reliability Settings over time, which should act to provide further certainty and reassurance to investors; and

- provide a degree of administrative efficiency by implementing a relatively automated process to effect incremental increases to the MPC and CPT, and avoiding the need to undertake a formal Rule change process to implement any such changes.

Although the Commission has accepted the benefits of indexation, the Commission also notes that it has been unable to identify an index that is likely to accurately track the changes in the costs of generating plant that are a key consideration in determining the appropriate levels of the MPC and CPT. This has led the Commission to conclude that the Reliability Settings should continue to be reviewed on a regular basis to ensure that they remain calibrated to the relevant underlying cost drivers. The Commission further believes that, in any event, it is appropriate that a requirement for the

Reliability Standard to be periodically reassessed should also be retained. Therefore, the draft Rule, unlike the proposed Rule, requires that the Reliability Panel undertake a comprehensive and integrated review of the Reliability Standard and Settings, including the manner of the indexation of the MPC and CPT, every four years.

A four-yearly review represents an appropriate balance between the certainty provided by indexation between reviews and the need to periodically check that the Reliability Standard, the values of the Reliability Settings and the indexation of these settings continue to be appropriate. The four year timetable will also allow for any changes to the Reliability Standard or Reliability Settings that have been introduced to take effect before the next review is commenced, unlike the current biennial process.

The Commission's considerations in this regard were further informed by the practical difficulties associated with the annual review of indexation proposed by the Reliability Panel in terms of its timing and the likelihood of such a process undermining the certainty that indexation is intended to provide.

Consultation on the Rule change request

The Commission commenced assessment of the Rule change request on 11 November 2010 by issuing a notice under section 95 of the National Electricity Law (NEL) and publishing a Consultation Paper prepared by AEMC staff. Five submissions were received in response to this first round of consultation.

The Commission has now given notice under section 99 of the NEL of the making of the draft Rule determination and draft Rule. Stakeholders are invited to make submissions to the Commission on this draft Rule determination, and these should be received by 5 May 2011. Further details about making submissions can be found in section 1.7.

Contents

1 Reliability Panel's Rule change request

1.1 The Rule change request

On 27 August 2010, the Reliability Panel (the Proponent) submitted a Rule change request to the Australian Energy Market Commission (AEMC or Commission) to introduce the indexation of certain Reliability Settings with effect from 1 July 2012 and to amend the current process for reviewing the Reliability Standard and Reliability Settings.[1]

1.2 Proponent's rationale for the Rule change request

The Rule change request seeks to give effect to the recommendations made by the Reliability Panel in its *Reliability Standard and Reliability Settings Review.*[2] In that review, the Proponent reviewed the current Reliability Standard and Reliability Settings, and considered the levels to be applied in the National Electricity Market (NEM) from 1 July 2012.

Amongst other things, the Proponent concluded that there is a risk that the real values of particular Reliability Settings would erode over time. This could lead to a risk of inefficient levels of investment in generation occurring, increasing the likelihood that the Reliability Standard might not be met in the future.

Although the National Electricity Rules (Rules) currently provide for the Reliability Settings to be reviewed, and potentially revised, on a regular basis, the Proponent considered that improved arrangements could be introduced to provide greater regulatory certainty, transparency and predictability of these values for market participants. The Proponent considered that the changes proposed in the Rule change request would therefore be likely to promote a more efficient level of investment in electricity services.[3]

1.3 Relevant background

In the context of this Rule change request, reliability refers to the system capacity to generate and transport sufficient electricity to meet consumer demand. The NEM Reliability Standard (Reliability Standard) is a measure of the maximum permissible unserved energy (USE) or the maximum allowable level of electricity at risk of not

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1 AEMC Reliability Panel 2010, *Reliability Settings from 1 July 2012*, Rule Change Proposal, 27 August 2010, Sydney. A copy of this document may be accessed from the AEMC's website at www.aemc.gov.au.

2 AEMC Reliability Panel 2010, *Reliability Standard and Reliability Settings Review*, Final Report, 30 April 2010, Sydney. A copy of this document may be accessed from the AEMC website at www.aemc.gov.au.

3 AEMC Reliability Panel 2010, *Reliability Settings from 1 July 2012*, Rule Change Proposal, 27 August 2010, Sydney, p. 18.

being supplied to consumers due to a lack of available capacity, and is currently set at 0.002% of annual energy consumption.[4]

The Reliability Settings is a collective reference to three price mechanisms:

- the market price cap (MPC), which is a cap placed on spot prices in each half-hour trading interval, and is currently set at $12 500/MWh;
- the cumulative price threshold (CPT), which governs the introduction of an administered price cap (APC)[5] that is set at a lower level than the MPC. The CPT is triggered - and the APC applied - if the sum of spot prices over a consecutive seven day period exceeds a certain level. The CPT is currently set at $187 500; and
- the market floor price (MFP), which is the lowest allowable limit for the spot price, and is currently set at -$1 000/MWh.[6]

These Reliability Settings function to:

- establish the parameters governing the price envelope within which energy supply and demand is balanced in the wholesale market;
- provide important price signals to market participants in relation to the delivery of sufficient generation capacity to meet the Reliability Standard; while
- providing a mechanism to limit financial risks for market participants.

The Reliability Panel is required to undertake a review of the Reliability Standard and Reliability Settings by 30 April of each second year, the first having been completed in 2010.[7] Following the review, the Reliability Panel must publish a report on the level of the Reliability Standard and Reliability Settings that it recommends should apply on 1 July in the year commencing two years after the year in which the review is conducted. Any change to the Rules recommended must be submitted as a Rule change request to the AEMC for determination in the usual manner.[8]

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4 The current and operational version of the *NEM Reliability Standard - Generation and Bulk Supply* (December 2009) is available at http://www.aemc.gov.au/Panels-and-Committees/Reliability-Panel/Guidelines-and-standards.html.

5 Note that this Rule change request does not consider the APC, which is reviewed and set under different governance arrangements.

6 Given that the MFP does not directly influence investment signals, the Proponent was not concerned with the impact of changes to the real value of this setting.

7 Rule 3.9.3A.

8 Although any person can submit a Rule change request proposing a change to the values of any or all of the Reliability Settings, to date the only changes made have been by way of the Reliability Panel's review and subsequent Rule change process.

1.4 Solution proposed in the Rule change request

The Proponent sought to resolve the issues with the Reliability Settings referred to in section 1.2 through its Rule change request which proposed the introduction of:

- a new mechanism to adjust the values of the MPC and CPT in line with changes in the Intermediate (Stage 2) Producer Price Index (Stage 2 PPI) on an annual basis with effect from 1 July 2012; and
- an annual review process to determine whether the index is "no longer appropriate" with regard to how the indexed MPC and CPT impact on spot prices, investment in the NEM and the reliability of the power system. The existing requirement for a biennial review of the Reliability Standard and Reliability Settings would be removed.

Both processes would be carried out by the Reliability Panel.

The Proponent's Rule change request included a proposed Rule to give effect to these amendments (proposed Rule).

1.5 Commencement of Rule making process

On 11 November 2010, the Commission published a notice under section 95 of the NEL advising of its intention to commence the Rule change process and the first round of consultation in respect of the Rule change request. A consultation paper prepared by AEMC staff identifying specific issues or questions for consultation was also published with the Rule change request. Submissions closed on 9 December 2010.

The Commission received five submissions on the Rule change request as part of the first round of consultation. They are available on the AEMC website.[9] A summary of the issues raised in submissions and the Commission's response to each issue is contained in Appendix A.

1.6 Extension of time

On 3 February 2011, the Commission gave notice under section 107 of the NEL to extend the period of time for the making of the draft determination on the Rule change request from 17 February 2011 until 24 March 2011. The Commission considered that the proposal raised issues of sufficient complexity or difficulty that an extension of time was necessary. In particular, the Commission wished to undertake further work to evaluate potential indexes for incorporation into the draft Rule.

9 www.aemc.gov.au.

1.7 Consultation on draft Rule determination

In accordance with the notice published under section 99 of the NEL, the Commission invites submissions on this draft Rule determination, including the draft Rule, by 5 May 2011.

In accordance with section 101(1a) of the NEL, any person or body may request that the Commission hold a hearing in relation to the draft Rule determination. Any request for a hearing must be made in writing and must be received by the Commission no later than 31 March 2011.

Submissions and requests for a hearing should quote project number "ERC0115" and may be lodged online at www.aemc.gov.au or by mail to:

Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

2 Draft Rule Determination

2.1 Commission's draft determination

In accordance with section 99 of the NEL the Commission has made this draft Rule determination in relation to the Rule proposed by the Reliability Panel.

The Commission has determined that it should not make the proposed Rule and that it should instead make a more preferable Rule.[10] This more preferable Rule incorporates many of the features proposed in the Rule change request, in particular the introduction of a mechanism to index the MPC and CPT.

However, the more preferable Rule makes use of the Consumer Price Index (CPI), rather than the Stage 2 PPI, for this purpose. It also does not adopt the Proponent's proposal for an annual review of the appropriateness of indexation. Instead, the more preferable Rule includes a requirement for a four-yearly comprehensive review of the Reliability Standard and Reliability Settings, including indexation, to be undertaken by the Reliability Panel. This would replace the current biennial review process.

The Commission's reasons for making this draft Rule determination are set out in section 3.1.

A draft of the Rule that the Commission proposes be made is attached to and published with this draft Rule determination (draft Rule). The key features of the draft Rule are described in greater detail in section 3.2.

2.2 Commission's considerations

In assessing the Rule change request the Commission considered:

- the Commission's powers under the NEL to make the Rule;
- the Rule change request;
- the fact that there is no relevant Ministerial Council on Energy (MCE) Statement of Policy Principles;[11]
- the Reliability Panel's recommendations to the Commission in the *Comprehensive Reliability Review*;[12]

10 Under section 91A of the NEL the AEMC may make a Rule that is different (including materially different) from a market initiated proposed Rule (a more preferable Rule) if the AEMC is satisfied that having regard to the issue or issues that were raised by the market initiated proposed Rule (to which the more preferable Rule relates), the more preferable Rule will or is likely to better contribute to the achievement of the National Electricity Objective.

11 Under section 33 of the NEL the AEMC must have regard to any relevant MCE statement of policy principles in making a Rule.

- the Commission's final Rule determination for the *National Electricity Amendment (NEM Reliability Settings: VoLL, CPT and Future Reliability Review) Rule 2009*;[13]
- the Commission's recommendations to the MCE in the *Review of the Energy Market Frameworks in light of Climate Change Policies*;[14]
- the Commission's recommendations to the MCE in the *Review of the Effectiveness of NEM Security and Reliability Arrangements in light of Extreme Weather Events*;[15]
- indexes available from the Australian Bureau of Statistics (ABS) and models of the capital costs of new open cycle gas turbine generation plant (OCGT plant);
- submissions received during first round consultation; and
- the Commission's analysis as to the ways in which the proposed Rule and the draft Rule will, or are likely to, contribute to the achievement of the NEO.

2.3 Commission's power to make the Rule

The Commission is satisfied that the draft Rule falls within the subject matter about which the Commission may make Rules. The draft Rule falls within the matters set out in section 34 of the NEL as it relates to the regulation of:

- the operation of the national electricity market (as it relates to the Reliability Settings that govern the limits placed on spot prices in the market); and
- the operation of the national electricity system for the purposes of the safety, security and reliability of that system.

Further, the draft Rule falls within the 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 the Australian Energy Market Operator (AEMO), including maximum and minimum prices (item 7); and
- a review by the Reliability Panel, such panel being established by the AEMC (item 33(b)).

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12 AEMC Reliability Panel 2007, *Comprehensive Reliability Review*, Final Report, December 2007, Sydney.

13 AEMC 2009, *National Electricity Amendment (NEM Reliability Settings: VoLL, CPT and Future Reliability Review) Rule 2009*, Final Rule Determination, 28 May 2009, Sydney.

14 AEMC 2009, *Review of Energy Market Frameworks in light of Climate Change Policies: Final Report*, 30 September 2009, Sydney.

15 AEMC 2010, *Review of the Effectiveness of NEM Security and Reliability Arrangements in light of Extreme Weather Events*, Final Report, 31 May 2010, Sydney.

2.4 Rule making test

Under section 88(1) of the NEL the Commission may only make a Rule if it is satisfied that the Rule will, or is likely to, contribute to the achievement of the NEO. This is the decision making framework that the Commission must apply.

The NEO is set out in section 7 of the NEL as follows:

> "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."

For this Rule change request, the Commission considers that the relevant aspect of the NEO is the promotion of efficient investment in electricity services for the long term interests of consumers of electricity with respect to the price and reliability of supply of electricity.[16]

The Commission is satisfied that the draft Rule is likely to contribute to the achievement of the NEO because it promotes greater certainty for investors in generation, incentivising an efficient level of investment consistent with the meeting of the Reliability Standard.

Specifically the draft Rule promotes efficiency in that it will:

- allow for a market price envelope that provides incentives for investment to deliver the Reliability Standard while limiting the financial exposure of market participants and consumers. Indexation of the MPC and CPT to maintain their values in real terms is more likely to allow for an efficient level of investment in generation and therefore provide an appropriate balance between price and reliability outcomes;
- provide a greater measure of certainty and predictability for market participants through the extension of the time period between reviews of the Reliability Settings from two to four years. The implementation of a predetermined and transparent process for calculating annual incremental increases to the MPC and CPT between reviews will allow for the frequency of the reviews to be reduced. This will decrease the financial risks to market participants associated with uncertain changes resulting from these reviews;

16 Under section 88(2) of the NEL, for the purposes of section 88(1) the AEMC may give such weight to any aspect of the NEO as it considers appropriate in all the circumstances, having regard to any relevant MCE statement of policy principles.

- send a clear signal to the market that the intention in the Rules is to preserve the value of the Reliability Settings over time, which should act to provide further certainty and reassurance to investors;

- provide a degree of administrative efficiency by implementing a relatively automated process to effect incremental increases to the MPC and CPT, and avoiding the need to undertake a formal Rule change process to implement any such changes; and

- maintain a regular check that the Reliability Standard, the values of the Reliability Settings and the indexation of the settings continue to be appropriate and consistent, while removing some of the practical difficulties associated with the current review process.

Compatibility with AEMO's declared network functions

Under section 91(8) of the NEL the Commission may only make a Rule that has effect with respect to an adoptive jurisdiction if satisfied that the proposed Rule is compatible with the proper performance of AEMO's declared network functions. The draft Rule is compatible with AEMO's declared network functions because it has no impact on Rules relating to AEMO's declared network functions nor transmission network service providers in general.

2.5 More preferable Rule

Under section 91A of the NEL, the AEMC may make a Rule that is different (including materially different) from a market initiated proposed Rule (a more preferable Rule) if the AEMC is satisfied that, having regard to the issues, or issues that were raised by the market initiated proposed Rule (to which the more preferable Rule relates), the more preferable Rule will, or is likely to, better contribute to the achievement of the NEO.

Having regard to the issues raised in the Rule change request, the Commission is satisfied that the draft Rule is likely to better contribute to the NEO than the proposed Rule for the following reasons:

- analysis undertaken by the Commission suggests that neither the Stage 2 PPI nor the CPI are likely to accurately track changes in the costs of generating plant that are a key consideration in determining the levels of the MPC and CPT. However, the Commission considers that the use of the CPI is more preferable because it is more commonly used in business and investment decisions and modelling, and provides a greater degree of stability than the Stage 2 PPI. Indexing the MPC and CPT by the CPI will maintain the dollar values of these parameters in real terms, thereby providing certainty in relation to revenue from generation investments over time;

- given there is no direct relationship between generator investment costs and the CPI, there will still be need for the Reliability Settings to be reviewed on a regular

basis to ensure that they remain calibrated to underlying cost drivers. Additionally, in light of its importance to investment in the market, the Reliability Standard should also be reassessed periodically. The review process included in the draft Rule will therefore provide a check that the Reliability Standard remains appropriate, that the values of the Reliability Settings continue to be consistent with meeting the Reliability Standard, and that the indexation process is operating as effectively as possible. The four-yearly period between reviews represents an appropriate balance between the certainty provided by indexation and the need to undertake this regular check;

- the annual review of indexation in the proposed Rule appeared to present practical difficulties relating to the timescales in which the review would be undertaken, and uncertainty as to the measures that could be recommended in the event that a review concluded that indexation was no longer appropriate. There would also be a likelihood that this process would undermine the certainty that indexation is intended to provide; and

- the draft Rule further enhances the administrative efficiencies of the proposed Rule in that the annual values of the MPC and CPT would be calculated and published directly by the AEMC, rather than via a more involved determination process run by the Reliability Panel.

3 Commission's reasons

The Commission has analysed the Rule change request and assessed the issues that it raises. For the reasons set out below and in the following chapters, the Commission has determined that a more preferable Rule, rather than the proposed Rule, should be made.

3.1 Assessment

In determining values for Reliability Settings it is necessary to find an appropriate balance by allowing sufficiently strong signals to ensure that generation investment is consistent with meeting the Reliability Standard while limiting financial exposure for market participants and consumers.

If the MPC and CPT are defined in nominal terms, their real values will diminish over time. This means that the balance referred to above will change, with the effect that signals for investment would tend to gradually reduce. While costs to consumers would be likely to fall in real terms, there would be an increasing likelihood that the Reliability Standard would not be met and that consumers would consequently suffer from negative impacts in terms of reliability outcomes. The Commission therefore considers that there is a need for the values of the MPC and CPT to be maintained in real terms.

The Rules currently provide a means of resolving this issue in that the Reliability Panel is tasked with reviewing the Reliability Settings every two years. If, in undertaking such a review, the Reliability Panel was to find that the values of the Reliability Settings had diminished in real terms to the extent that they were no longer consistent with meeting the Reliability Standard, the Reliability Panel would be expected to propose a Rule change request to effect changes to the settings.[17]

However, given the inherently uncertain nature of the review process, to the extent that market participants rely on the levels of the MPC and CPT in making investment decisions, then there is a risk that this uncertainty will act as a disincentive to investment. There are likely to be risks associated both with a failure to make changes and, equally, with potentially large step changes in values.

The Commission therefore considers that the Reliability Settings, and the process for the setting of them, should also aim to provide a sufficient level of certainty to investors to ensure that the efficient level of investment targeted is forthcoming.

Benefits of indexation

The Commission has concluded that linking the MPC and CPT to an appropriate index on an annual basis is likely to significantly improve the predictability of changes to

17 The review undertaken by the Reliability Panel also includes consideration of the Reliability Standard. Any changes made to the Reliability Standard as a result would provide another driver for the making of changes to the Reliability Settings.

these values. This will help to minimise the level and frequency of intervention in the Reliability Settings, leading to strong and clear price signals and a more certain environment for investment.

The introduction of such a mechanism in itself should also send an explicit signal to the market that the intention in the Rules is to preserve the real values of the Reliability Settings over time, which should act to provide further certainty and reassurance to investors.

The Commission notes that a further benefit resulting from the introduction of an indexation process would be a degree of administrative efficiency associated with implementing a relatively automated process to effect incremental increases to the MPC and CPT, as this would avoid the need to undertake a formal Rule change process to implement any such changes.

Continued need for a regular review

Although the Commission has accepted the benefits of indexation, the Commission has been unable to identify an index that is likely to accurately track the changes in the costs of generating plant that are a key consideration in determining the appropriate levels of the MPC and CPT.[18] Consequently, even though the Commission considers that the CPI is the most suitable index to use,[19] the Commission considers that indexation does not represent a substitute or alternative to reviewing the Reliability Settings on a periodic basis to check that their values remain consistent with meeting the Reliability Standard. The Commission also believes that a regular review of the Reliability Standard itself remains an important element of the reliability framework.

The Commission has therefore concluded that a requirement for a comprehensive and integrated regular review of the Reliability Standard and Reliability Settings should be retained in the Rules. This would ensure that the Reliability Standard continues to be set an appropriate level, and that the Reliability Settings would allow for this level of reliability to be delivered efficiently. Such a review would also provide the opportunity to verify that the indexation process is operating as effectively as possible.

The Commission considers that this regular review should be undertaken by the Reliability Panel every four years, as opposed to every two years as at present. This four year period represents an appropriate balance between the certainty provided by indexing between reviews and the need to periodically check that the values of the Reliability Settings are correctly calibrated. The four year timetable will also allow for any changes to the Reliability Standard or Reliability Settings to have been introduced before the next review is commenced, unlike the current biennial process.

The Commission's considerations in this regard were further informed by the practical difficulties associated with the annual review of indexation proposed by the Proponent. These difficulties related to the timescales in which the annual review

18 This concept of cost reflectivity is explored in further detail in chapter 5.

19 As discussed in chapter 6.

would be undertaken and uncertainty as to the measures that could be recommended in the event that a review concluded that indexation was no longer appropriate. There would also be a likelihood that this process would undermine the certainty that indexation is intended to provide.

3.2 Draft Rule

The draft Rule made by the Commission incorporates many of the features proposed in the Rule change request. However, the draft Rule also contains a number of changes to the proposed Rule, most notably the specific index used and in relation to the review process.

Basis of indexation

The draft Rule introduces a new mechanism to index the values of the MPC and CPT on an annual basis with effect from 1 July 2012.

The draft Rule defines a 'Reliability Settings Index' to be used in the indexation process. This is specified as being the Consumer Price Index: Index Numbers, All Groups, Australia, published by the ABS. However, provision is also made for the AEMC to determine another index to apply if the CPI ceases to be published or is substantially changed.

Process for indexation

The mechanism for indexation in the draft Rule ensures that, for each financial year, the values of the MPC and CPT will be adjusted to reflect the change in the Reliability Settings Index between the calendar year 2010 (the base year) and the calendar year commencing 18 months before the start of the financial year in question (the indexed year).

For example, for the financial year commencing on 1 July 2012, the values of the MPC and CPT will be adjusted to reflect the change in the Reliability Settings Index between calendar years 2010 and 2011.[20] Similarly, for the financial year commencing on 1 July 2013, the MPC and CPT will be adjusted to reflect the change in the index between calendar years 2010 and 2012.

Other features of the indexation process are that:

- for both the base year and the indexed year, the index would be determined by taking the average of the four quarterly CPI values from the relevant year;
- the updated values of the MPC and CPT for each new financial year would not be allowed to be lower than they were in the previous financial year; and

20 For example, the average of the quarterly CPI index values in 2010 is 172.6. If we assume the index in 2011 is 177.8, then the ratio of 177.8/172.6 is 1.03. This means that on 1 July 2012 the 2010 values of the MPC and CPT would be increased by three per cent.

- the levels of the MPC and CPT would always be rounded to the nearest $100/MWh or $100, respectively.

The revised MPC and CPT values to apply from the following 1 July would be calculated by the AEMC and published on its website no later than 28 February each year. Note that this is different to the process contained in the proposed Rule, which allocated a process of determining the new values to the Reliability Panel.

Review process

The draft Rule varies from the proposed Rule in that it retains a regular, comprehensive review of the Reliability Standard and Reliability Settings, and does not adopt the Proponent's proposal for an annual review of the appropriateness of indexation.

The draft Rule therefore provides that the Reliability Panel will, every four years, conduct an integrated review of:

- the Reliability Standard;
- the Reliability Settings, comprising the MPC, CPT and MFP; and
- the manner of indexing the MPC and CPT.

By 30 April of each fourth year (commencing 2014), the Reliability Panel is to publish a report on the Reliability Standard and Reliability Settings that it recommends are to apply from 1 July in the year commencing two years after the year in which the report is published.

Where the report contains recommendations that require changes to the Rules then the Reliability Panel is required to submit a Rule change request to the AEMC as soon as practicable following publication of the report.

3.3 Civil Penalties

The draft Rule does not amend any Rules that are currently classified as civil penalty provisions under the National Electricity (South Australia) Law or Regulations. The Commission does not propose to recommend to the MCE that any of the amendments in the draft Rule be classified as civil penalty provisions. This is because they concern the maintenance of the real values of the MPC and CPT, and the Reliability Standard and Reliability Settings review process, matters which relate to the functioning of the NEM, and not to the behaviour of individual market participants.

4 Commission's assessment approach

This chapter describes the Commission's approach to assessing the Rule change request in accordance with the requirements set out in the NEL (and explained in chapter 2). The assessment framework has also been used to assess the more preferable draft Rule which was subsequently developed.

In assessing the Rule change request and the draft Rule, the Commission considered the following issues:

- the appropriateness of indexing the MPC and CPT in principle;
- selection of an appropriate index;
- practical implementation and governance arrangements for an indexation process; and
- the role of regular reviews of the Reliability Standard and Reliability Settings, and of the indexation of the MPC and CPT.

In assessing any Rule change request, the Commission must have regard to the extent to which the Rule will, or is likely to contribute to, the achievement of the NEO. In making this assessment, the Commission may give such weight to any aspect of the NEO as it considers appropriate. The Commission may also have to balance competing pressures between the various aspects of the NEO.

In assessing this Rule change request, the Commission has identified the most relevant aspects of the NEO as being the promotion of efficient investment with respect to the price and reliability of supply of electricity. The key factors and underlying principles that the Commission has had regard to in making its assessment are set out in more detail below.

Trade-off between price and reliability

The Commission notes that, under the current reliability framework, the Reliability Panel determines an appropriate Reliability Standard for the NEM. In determining Reliability Settings designed to ensure achievement of the Reliability Standard, there will be a tension between price and reliability outcomes.

If the Reliability Settings are set at too high a level, prices faced by consumers will be unnecessarily high in that a greater level of reliability than that deemed appropriate under the Reliability Standard will be incentivised. Market participants will also likely be exposed to an unnecessary level of high price volatility.

If the Reliability Settings are set at too low a level, prices and volatility will be lower, but a level of reliability lower than that defined by the Reliability Standard is likely.

Therefore, in considering mechanisms that seek to change the Reliability Settings it is necessary to have regard to this trade-off.

Providing certainty for investors

A key aspect of the Proponent's justification for the Rule change request was the need to provide certainty for investors in generation.

Frequent reviews of the Reliability Settings might be likely to result in values of the settings that provided an appropriate balance between price and reliability, with this largely maintained in real terms. However, under such a regime, future changes to the settings as a result of subsequent reviews would be uncertain and this would therefore risk undermining investor certainty.

In considering the changes to the Reliability Settings review processes and the indexation of certain of these settings that are a feature of the proposed and draft Rules, the Commission has given consideration to the extent to which investor certainty would be promoted, better allowing for the achievement of the Reliability Standard.

5 Objectives of indexation

In its Rule change request, the Proponent sought to introduce a new process to index the MPC and CPT such that their values are maintained in real terms over time.

As part of its assessment of the Rule change request, the Commission has considered the objectives of indexation and has concluded that implementation of such a process would improve the current arrangements.

5.1 Rule change proponent's view

Given the importance of capital costs in investment decisions, the Proponent was concerned that there is a risk that the real values of the MPC and CPT may erode over time and there may consequently be a risk of insufficient generation investment in the future. The Proponent therefore considered that there is a need to index both the MPC and CPT in order to maintain their real values.[21]

The Proponent considered that indexation would be expected to maintain wholesale prices at a level that would encourage sufficient investment so that the reliability of the national electricity system meets the Reliability Standard. It also suggested that indexing the MPC and CPT would provide greater regulatory certainty, transparency and predictability of these values for stakeholders, further promoting an efficient level of investment.[22]

The Proponent highlighted that the capital costs of new OCGT plant represented a particular consideration in the setting of the underlying values of the MPC and CPT, and suggested that the aim of indexation should be to reflect economic trends in these costs.[23] It also noted that there are many factors that could support higher capital costs (e.g. increasing demand for gas turbines) or lower capital costs (e.g. alternative manufacturers entering the market) for new entrant OCGT plant. The Proponent therefore suggested that the indexation of MPC and CPT should aim to capture such changes.[24]

5.2 Stakeholder views

The majority of the submissions agreed in principle with the concept of annual indexation of the MPC and CPT.

21 AEMC Reliability Panel 2010, *Reliability Settings from 1 July 2012*, Rule Change Proposal, 27 August 2010, Sydney, p. 8.

22 Ibid, p. 18.

23 Ibid, p. 11.

24 Ibid, p. 8.

The National Generators Forum (NGF) believed that the real values of the Reliability Settings should be maintained annually.[25] It considered that indexation of the MPC and CPT would help ensure that the Reliability Standard is met by adding to investor certainty, sustaining the time value of money, and capturing increases in generation costs.[26] In particular, the NGF considered that additional certainty would be given to market participants through the increased predictability of movements in the MPC and CPT.[27]

Origin Energy Limited (Origin) submitted that indexation would improve certainty, transparency and predictability of values for market participants.[28]

The South Australian Department for Transport, Energy and Infrastructure (DTEI) considered that indexation would ensure that the real value of the Reliability Settings would be maintained over time, reducing the risk of generation under-investment in the NEM.[29]

The Australian Energy Regulator (AER) agreed that, as the MPC is intended to create incentives to invest in generation, it would be appropriate for it to increase in line with producer costs.[30] However, the AER considered that, in contrast, the CPT is an explicit risk management mechanism, designed to limit the exposure of market participants to high spot prices over a protracted period of time. The AER therefore considered that, given these differences, an increase in the MPC should not automatically trigger a commensurate increase in the CPT. Instead, the AER proposed a thorough review of the CPT mechanism to assess its effectiveness at managing risk in the NEM.[31] The AER also suggested that it should be recognised that a higher MPC would have the effect of increasing the potential impact of an exercise of market power.[32]

The Victorian Department of Primary Industries (DPI) considered that annual indexation of the MPC and CPT would be appropriate.[33] However, given other concerns it held with the proposal, the DPI recommended that, overall, the Commission should reject the Rule change request.[34]

25 NGF, Consultation Paper submission, p. 1.

26 Ibid, p. 2.

27 Ibid, p. 3.

28 Origin, Consultation Paper submission, p. 1.

29 DTEI, Consultation Paper submission, p. 1.

30 AER, Consultation Paper submission, p. 3.

31 Ibid, p. 2.

32 Ibid, p. 3.

33 DPI, Consultation Paper submission, p. 1.

34 Ibid, p. 4.

5.3 Commission's analysis

The Commission considers that it is important to understand how investment signals for new generation capacity are delivered, and how this impacts on the proposal to index the MPC and CPT.

Reliability and generation investment

The reliability of the electricity supply chain is determined by the amount of capacity that exists to generate and transport electricity to meet consumer demand. The reliability of the system is therefore an economic issue to the extent that it must be cost-effective for generators and networks to have enough capacity to meet demand at all times.

While electricity networks in the NEM are subject to economic regulation, generators operate in a competitive market. The question of whether it is economic for a generator to enter the market depends on its revenue expectations, and investors will seek to cover both fixed costs and variable operating costs, as well as a return on their investment. All things being equal, a new generator might be expected to enter when the present value of sales revenue (net of future costs) exceeds the cost of the plant, with future cash flows discounted at the cost of capital.

An important part of the investment decision process is therefore the forecasting of future cash flow that could be earned from the sale of electricity generated, net of the operating costs, and compared to the estimated cost of the plant. This may be dependent on a number of financial and system/operational factors.[35] However, the main source of income for generators in an energy only market (such as the NEM), is the revenue generated from the spot market and from derivative contracts settled against spot prices.

The generation mix

Spot prices therefore act as a signal of the amount of generation investment required but also of the efficient mix of generation capacity. This is illustrated in Figure 5.1 below, which uses the concept of a price duration curve. This plots how many hours spot prices are above a given level.

For any given pattern of demand over time, there will be an associated optimal mix of generation. The proportion of demand that does not change over time is most efficiently served by baseload technologies, predominately coal-fired generation to date in Australia. Baseload technologies are characterised by high initial capital costs and relatively low running costs.

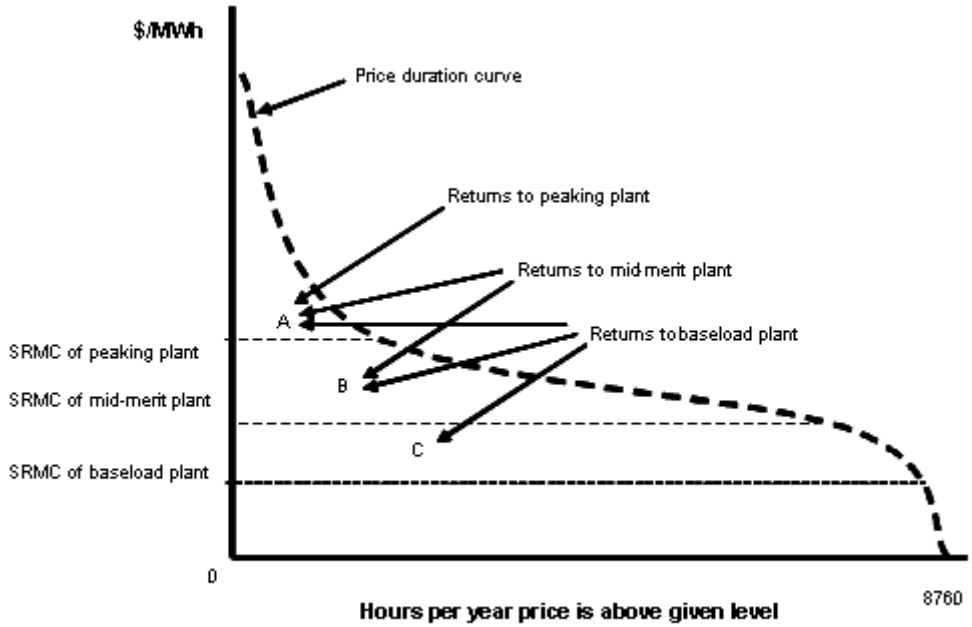
35 Such as forecasts of future spot and contract prices at the relevant regional reference node, other available revenue streams (such as the sale of renewable energy certificates), intra-regional transmission losses, the amount of power expected to be produced at any time and known capacity constraints.

The proportion of demand which varies but is predictable, for example the periods of higher demand on weekday mornings and evenings, is most efficiently served by mid-merit plant such as combined cycle gas turbine plant (CCGT plant). These plant generally have lower capital costs and more flexibility, but higher running costs, than baseload generators.

The final proportion of demand that is highly uncertain, for example the peak hours during the hottest summer day, is most efficiently served by peaking plant such as OCGT plant. These plant have low capital costs but high operating costs because of their relative technical inefficiency.

Whenever the price is above the immediate costs of operation (e.g. fuel, maintenance) for a particular generator, that generator is making a contribution to its fixed costs (including a return on capital employed). (This is shown by the areas A, B and C in Figure 5.1.) The expected level of these payments will determine whether it is economic or not to enter the market. It will also determine what mix of baseload, mid-merit and peaking generation is most economic, i.e. minimises costs, given the underlying profile of demand.

Figure 5.1 The price duration curve and the generation mix



SRMC: Short Run Marginal Costs

Relationship between the reliability framework and investment

The current NEM reliability framework recognises that it will not be economic to have 100% reliability. To do so would require periods of very high prices, and, at these levels, the cost of reliable supply will exceed the value that consumers place on this. There would also likely be additional costs resulting from the management by market participants of the risks associated with such high prices, including their volatility.

The level of reliability that it is deemed economic to target is specified in the Reliability Standard. This is determined by the Reliability Panel, and, as previously noted, is currently set at 0.002% USE per annum, or a 99.998% level of reliability.[36] This equates to the interruption of supply to every consumer in a region for approximately 10 minutes every year.

The Reliability Settings are the key mechanisms used to target achievement of the Reliability Standard. The MPC and CPT should allow sufficiently strong price signals so as to incentivise a level of investment consistent with the meeting of the Reliability Standard. However, it is important that they are set no higher than this, so as to prevent consumers paying for reliability at a price that is higher than they value it, and to limit the exposure of market participants and consumers to the risks of extreme or sustained high prices.

Objective and manner of indexation

In its Rule change request, the Proponent noted that, if the MPC and CPT are defined in fixed nominal terms, there is a risk that their real values will diminish over time. This would tend to reduce the incentives for investment, increasing the likelihood that the Reliability Standard might not be met in the future.

The Proponent therefore proposed indexation as a means of maintaining the values of the MPC and CPT in real terms. In particular, the Proponent proposed that this would be achieved by use of an index that follows similar economic trends to the parameters used in setting the MPC and CPT, specifically the capital costs of OCGT plant.[37]

The Commission agrees that the capital costs of OCGT plant should be of particular significance when determining the appropriate levels of the MPC and CPT.

This can be illustrated in Figure 5.1 above. In the diagram a price cap has been applied, so that a certain amount of energy is unsupplied. If this amount of unsupplied energy was too great, this could be reduced by increasing the price cap. The most economic way of supplying this additional energy would be from a plant with low capital but high variable costs relative to other generating units. Such peaking plant generally operate for only a few hours a year during periods of peak demand and the price for energy must be high enough during those few hours to meet the annualised capital cost of these peaking generating units for an entire year. Currently, the technology which tends to act as the marginal generator in the dispatch process in these peak periods is OCGT plant.

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36 The current level of the Reliability Standard of 0.002% USE was set by the Reliability Panel in 1998 (market start), and has remained unchanged since then. The current and operational version of the NEM Reliability Standard - Generation and Bulk Supply (December 2009) is available at http://www.aemc.gov.au/Panels-and-Committees/Reliability-Panel/Guidelines-and-standards.html. A new version of the Reliability Standard will take effect on 1 July 2012, but this will not change the 0.002% USE level.

37 AEMC Reliability Panel 2010, *Reliability Settings from 1 July 2012*, Rule Change Proposal, 27 August 2010, Sydney, p. 11.

Assessment of indexation

The Commission notes that there are a number of potential benefits and risks associated with the introduction of an indexation mechanism to the reliability framework.

If the values of the MPC and CPT were to be linked to an index that reflected changes in the costs of OCGT plant, these parameters would be likely, on a continued basis, to incentivise a level of investment consistent with meeting, but not exceeding, the Reliability Standard. Indexation in this manner would allow for the Reliability Settings to maintain an appropriate balance between reliability and price outcomes over time.

As discussed elsewhere in this document, indexation would also allow for less frequent reviews of the Reliability Settings in that it would act to ensure that the values of the MPC and CPT remained appropriate on an ongoing basis. This would increase predictability and certainty for market participants, leading to a more stable environment for investment in generation and therefore better allowing for the achievement of the Reliability Standard

The introduction of an indexation mechanism would also improve administrative efficiency in implementing incremental increases in the values of the MPC and CPT without the uncertainty and delay of the formal Rule change process.

The main risk associated with the indexation of the MPC and CPT would be that an inappropriate index is selected, or that an initially suitable index subsequently became less so.

An index could be inappropriate by either over- or under-stating changes in OCGT plant costs. If the index - and therefore the MPC and CPT - increased to a greater extent than costs, then there would be increased risk that prices faced by consumers would be unnecessarily high in that a greater level of reliability than that specified by the Reliability Standard would be incentivised. Market participants would also be likely to be exposed to unnecessarily high risks associated with price volatility.

Conversely, if the index under-stated changes in costs, prices and volatility would be lower, but it is likely that an insufficient level of investment would be incentivised. However, the Commission notes that such a scenario would still be likely to result in better outcomes than settings specified on a fixed nominal basis.

The Commission therefore considers that there are likely to be clear benefits resulting from indexation of the MPC and CPT, provided that the index employed broadly tracks changes in the capital costs of new OCGT plant. Where this is not reasonably achievable, there would still be benefits, but there would need to be some mechanism to enable corrections.

Indexation of the CPT

In its submission, the AER noted that, while it agreed that indexing the MPC in line with producer costs was appropriate, it considered that an increase in the MPC should not automatically trigger a commensurate increase in the CPT.[38]

The AER noted that the MPC should be set at a level that balances the financial risks faced by market participants through exposure to peak prices, with the need to promote investment through high price events. However, in the opinion of the AER, determining the optimal design of the CPT is a fundamentally different issue, as the CPT is an explicit risk management mechanism. The AER therefore proposed a thorough review of the CPT mechanism to assess its effectiveness at managing risk. It also highlighted that it had set out its views on the CPT in more detail in its responses to consultations on the Reliability Panel's earlier *NEM Reliability Settings: VoLL, CPT and Future Reliability Review* Rule change proposal.[39]

As in the final determination for that Rule change request, the Commission concurs with the AER that the CPT is largely designed to limit the exposure of participants to high spot prices over a protracted period of time, rather than just the short term peaks.

However, the Commission also reaffirms its view that is not possible to disaggregate the effects of the two settings. Allowing the MPC to increase as a result of an index while holding the CPT static would likely result in more regular breaches of the CPT, and this would tend to frustrate the achievement of the aim of the increase in the MPC. In that the CPT is intended to limit the exposure of market participants to sustained high price events, the Commission considers that it should be set at such a level that would offer, but would only offer, this protection – and that it should not act to inhibit or blunt the investment signals given by the MPC.[40]

The Commission further notes that the retention of a regular review of the Reliability Standard and Reliability Settings (see chapter 8) will allow the Reliability Panel the opportunity to consider the appropriate level of the CPT, and its interaction with the MPC.

5.4 Commission's conclusion

Taking into account the matters above, the Commission has concluded that:

- indexation of the MPC and CPT would be likely to provide benefits in that it would allow an efficient balance between reliability and price outcomes over time, and that the greater certainty and stability provided would promote more efficient investment in generation capacity and the continued delivery of the Reliability Standard; and

38 AER, Consultation Paper submission, pp. 2-3.

39 Ibid, p. 2.

40 See: AEMC 2009, *National Electricity Amendment (NEM Reliability Settings: VoLL, CPT and Future Reliability Review) Rule 2009*, Final Rule Determination, 28 May 2009, pp. 23-24.

- ideally, the index used to adjust the values of the MPC and CPT should broadly reflect changes in the cost of OCGT plant.

6 Selection of an appropriate index

The Commission has assessed the suitability of the index used in the proposed Rule and potential alternatives, and has found the CPI to be a more suitable index than the Stage 2 PPI. In making this assessment the Commission considered the assessment criteria recommended by the Proponent, and whether other criteria should be included as part of the assessment process.

6.1 Rule change proponent's view

In reviewing the requirements for a suitable index, the Proponent considered that it should:

- be based on the supply side costs of meeting the Reliability Standard;
- follow similar economic trends to those parameters used in setting the MPC and CPT, particularly the capital cost of new entrant OCGT plant;
- be independently verifiable; and
- be amenable to forecasting.

Based on this assessment framework, the Proponent considered that the Stage 2 PPI was an appropriate index to use.[41]

The Proponent was also of the view that the Stage 2 PPI:

- provided a good reflection of the costs associated with meeting reliability; and
- avoided being too general (such as would be the case with a consumer price type index), or too specific (as with a commodity specific index).[42]

6.2 Stakeholder views

The AER suggested that an index that increased the MPC in line with producer costs was appropriate.[43]

The NGF agreed that the requirements identified by the Proponent were suitable for the purpose of selecting an index, and considered that the Stage 2 PPI was the most appropriate index to use.[44]

41 AEMC Reliability Panel 2010, *Reliability Settings from 1 July 2012*, Rule Change Proposal, 27 August 2010, Sydney, p. 11.

42 Ibid.

43 AER, Consultation Paper submission, p. 3.

44 NGF, Consultation Paper submission, pp. 4-5.

Origin concurred with the Proponent's selection of the Stage 2 PPI as the most suitable index,[45] and the South Australian DTEI also supported the indexing of the MPC and the CPT on the basis of the Stage 2 PPI.[46]

Stakeholders did not suggest any alternative indexes as potentially being more appropriate than the Stage 2 PPI.

6.3 Commission's analysis

In general terms, a price index measures changes in the price of an item or of a specific basket of goods over time, thereby allowing the observation and measurement of price movements for those goods.[47]

Choosing an appropriate index is both an important and complex issue. It will depend in part on the specific objectives of indexation that are identified but also on an assessment of the relative strengths and weaknesses of each index, and the weighting afforded to particular criteria.

Selection criteria

The Commission agrees that the selection criteria identified by the Proponent are broadly appropriate.

The Proponent's first two criteria were that an index should be based on the supply side costs of meeting the Reliability Standard and should follow similar economic trends to those parameters used in setting the MPC and CPT, particularly the capital cost of new OCGT plant. These two criteria appear to be very similar, but the Commission concurs that they are directly relevant for the reasons set out in chapter 5.

The other two criteria identified by the Proponent were that a suitable index should be independently verifiable and be amenable to forecasting. The Commission agrees that these qualities would be important in achieving the desired certainty, transparency and predictability for market participants.

However, the Commission has also concluded that an additional, and critical, factor to be considered in selecting an appropriate index is the relative stability or volatility of the measure. The relevance of this criterion can be illustrated by considering the two overarching approaches to indexation that could be employed.

Approaches to indexation

The Proponent recommended the Stage 2 PPI as the most suitable index but had also considered (and rejected) the CPI. These indexes are available 'off the shelf', that is they are compiled and maintained by the ABS, an independent organisation, and are

45 Origin, Consultation Paper submission, p. 1.

46 DTEI, Consultation Paper submission, p. 1.

47 That is, percentage changes in prices rather than actual price levels in terms of dollar amounts.

accessible on the ABS website. Alternative options would include choosing a more specific 'off the shelf' index or constructing a 'bespoke' index.

Constructing a bespoke index would allow it to be tailored to clearly reflect the subject being indexed, in this case, the capital costs of new OCGT plant. Such an index would therefore be likely to have a much higher degree of accuracy in reflecting these costs over time, compared to a more global measure.

However there are also some significant issues associated with using an index that is too specific in its construction. These are largely related to the practical implications of such a defined measure:

- there is currently little or no industry consensus on a single model of the capital costs of new OCGT plant on which to base an index. This may be due variously to commercial sensitivities around costs and/or the lack of a uniform build of OCGT plant. Given the lack of a uniform model of costs, the construction of a granular index may be unwarranted;

- any administrative efficiency that might have been gained with indexation would likely be lost in the effort required to construct and maintain the index over the long term. For example, maintenance of the index might include an on-going process of assessing the identification and relative weighting of the index components;

- if the required data was not able to be easily sourced, for example from the ABS, then consideration and time must be given to identifying appropriate and reliable sources or proxies of that data, and to the collecting, analysing and normalising of such data; and

- while OCGT plant is considered to be the marginal plant in the current generation mix, this might change to another type of plant in the future, requiring a new index to be constructed.

The Commission also considers that, notwithstanding its accuracy, a specifically tailored index that incorporated a high proportion of raw materials or imported components would also be a very volatile measure. If such volatility was then reflected in the MPC and the CPT, it could lead to a perverse outcome whereby the on-going instability of these price signals created a disincentive to invest, leading to inefficient investment outcomes.

Conversely a broader index, while not as directly reflective of the capital costs of OCGT plant, would be likely to provide a much more stable measure of inflation over time. This stability would provide a more certain investment environment. In terms of incentivising investment and the delivery of the Reliability Standard, the Commission is therefore of the view that the relative stability of the index is also a critical consideration in the selection process.

The CPI and PPI measures

In its Rule change proposal, the Proponent identified the CPI and certain PPI measures as being of potential relevance. The Commission reviewed a range of ABS indexes but concluded that other indexes were unlikely to be any more relevant compared to those reviewed by the Proponent.

The CPI is designed as a general measure of price inflation faced by households, and measures changes to the typical basket of goods and services acquired by households.[48] As it concerns the prices that are paid by consumers for household goods and services, this means that it reflects the retail prices paid and therefore includes such elements as retail/wholesale margins and the end-user tax components of the price paid, such as GST.

The Producer Price Indexes (PPIs) are another type of broad based index which measure changes in the prices paid by producers of commodities or providers of services. They relate to products that are primary to a particular industry, irrespective of the industrial classification of establishments undertaking the activity.[49] The PPIs provide a summary measure of the movements in the prices of commodities over time, and are disaggregated using a 'stage of production' framework. Under this framework, flows of commodities are categorised on a sequential basis along the production chain, according to their economic destination.

The principal categorisation is between stage 3 (final) goods (commodities that are destined for final consumption, capital formation or export) and non-final goods (commodities that will be processed further). This latter category is also broken sequentially into stage 1 (preliminary) or stage 2 (intermediate) to account for non-final commodities that flow back into further production. Including the final category, there are therefore three separate stages of production.[50]

Based on this categorisation, the Proponent considered that the activity of generator construction would fall into the stage 2 (intermediate) category rather than either stage 1 or 3. The Commission concurs with this assessment.

Assessment of the CPI and Stage 2 PPI against the selection criteria

The Proponent identified that the index should be a supply side measure and that it should follow similar economic trends as those used to set the MPC and CPT, in particular the capital costs of OCGT plant. The Commission sought to assess the Stage 2 PPI against this condition.

48 ABS, 1301.0 *Year Book Australia, 2009-2010* at http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/81AD8568011151A4CA25773700169D01?opendocument

49 Ibid.

50 Ibid. These stages are not aggregated in order to avoid any double counting.

Comparative price movements of the Stage 2 PPI and the CPI are shown in Figure 6.1 below (normalised to 1998 values). These movements are graphed against two data series that aim to reflect changes in new OCGT plant capital costs.

The first of these is based on a model of these costs proposed by Concept Economics (Concept) in work undertaken for the Queensland Competition Authority (QCA).[51] Concept identified a number of variables relevant to the capital costs of generating plant, and sourced data on each from the ABS, including from various PPI tables. Concept then constructed specific indexes for a range of generating plant types, including OCGT plant, by varying the weightings attributed to each of these variables. The index for OCGT plant was constructed as follows: 31.5% labour, 7.1% cement, 40.0% imported materials and 21.4% basic metals.

The Commission acknowledges the constraints associated with using this model but, in light of the relative difficulty in obtaining meaningful comparative capital cost data, considered that there would be some value in testing broader-based indexes against a more specific index designed by an independent economic consultant to be representative of OCGT costs.

The second data series was provided by Sinclair Knight Mertz (SKM). The Commission engaged SKM to provide independent OCGT capital cost time series data so that movements in indexes over time could be compared and correlated to actual changes in costs over time.

In order to provide relevant data, SKM calculated the annualised capital and some fixed operating costs (excluding fuel) of new OCGT plant of 100MW or greater. By far the greatest portion of the costs is accounted for by the import costs of the gas turbine genset. These costs were extracted from various editions of the *Gas Turbine World Handbook*.[52] A copy of SKM's report *ERC0115 - Data for simple cycle costs for developing an index for the Market Price Cap* is available on the AEMC's website.[53]

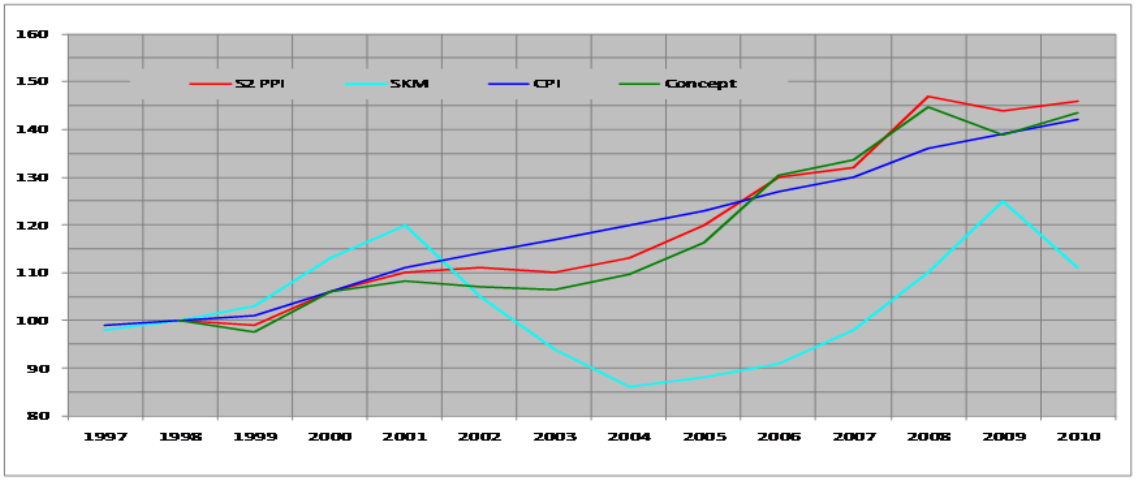
Figure 6.1 shows the Stage 2 PPI and CPI reflecting a general inflationary trend over the last decade. Both indexes, but in particular the Stage 2 PPI, show a relatively high correlation to the Concept model but a lower correlation with the SKM data.

51 This cost model was proposed by Concept in its paper prepared for the QCA in relation to calculation of the 2009-20 Benchmark Retail Cost Index for Queensland. This paper *Review of inputs to cost modelling of the NEM*, May 2009, is accessible from the QCA website at http://www.qca.org.au/electricity-retail/NEP0910/FinalDec.php. The Commission notes that this model has not been tested and did not progress past the proposal stage.

52 This is published annually by *Gas Turbine World*, a US journal aimed at gas turbine buyers and users.

53 www.aemc.gov.au.

Figure 6.1 Comparison of normalised index movements



Sources: Sinclair Knight Mertz, Concept Economics, Australian Bureau of Statistics.

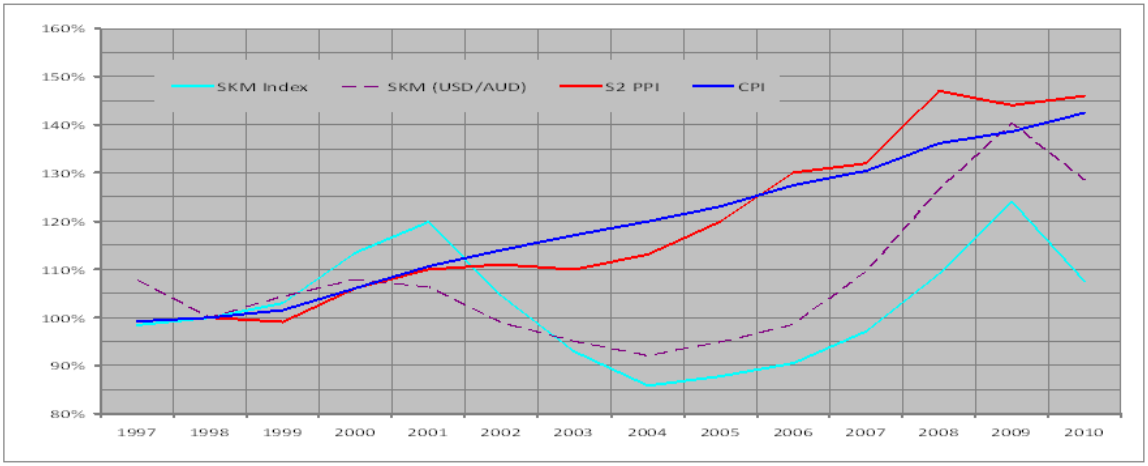
The high correlation between the Concept model and the Stage 2 PPI in particular can largely be explained in that much of the source data for the former was derived from the specific PPI index tables identified by Concept in their proposal.[54]

Conversely the SKM data, at times, diverges from the trends shown in the ABS indexes. SKM advise that the initial increase in costs prior to 2000 reflect rapid increases in turbine prices due to high US demand. The subsequent drop after this peak reflects the 'dot.com' crash and an accompanying decline in US demand. This overlapped with a general but largely unrelated downwards movement in the Australian dollar. The second half of the last decade shows the OCGT costs trend upwards in response to increased global demand for heavy engineering materials and construction items. The CPI and Stage 2 PPI show a greater correlation with OCGT capital costs from about 2004 until 2009.

To better illustrate the impact of the significant imported component (and therefore exchange rates) on the capital cost curve, SKM repeated their calculations but fixed the US to Australian exchange rate at its 1998 level. The resulting curve is shown compared to the CPI and Stage 2 PPI in Figure 6.2. The original cost curve is also shown for the purposes of comparison. This shows that the exchange rate has a material effect in terms of the correlation between OCGT costs and both the CPI and Stage 2 PPI, reflecting the much greater imported component of the OCGT cost data as compared to the ABS indexes. It can be seen that greater stability of the exchange rate would have led to an improved correlation.

54 Concept Economics, *Review of inputs to cost modelling of the NEM*, May 2009, p. 8.

Figure 6.2 Impact on capital costs if exchange rates constant



Sources: Sinclair Knight Mertz, Australian Bureau of Statistics.

Rationale for the selection of CPI

Based on its assessment, the Commission makes the following observations:

- neither the Stage 2 PPI nor the CPI appear to be particularly reflective of changes in the capital costs of new OCGT plant, and there is little material difference between their respective levels of correlation to those costs. This is perhaps not surprising considering that there are more specific influences on OCGT costs than will be captured by more general measures of inflation; and

- there is likely to be a greater level of volatility associated with more specific cost measures. This can particularly be expected where there is a large imported component which is vulnerable to exchange rate fluctuations.

While the Commission considers that an index used for adjusting the values of the MPC and CPT over time should ideally reflect changes in the capital costs of new OCGT plant, the Commission does not consider that this is the only condition for assessing the suitability of an index. In particular, for the purposes of delivering reliability, the Commission considers that the underlying trends of the measure, rather than the accuracy of periodic movements, are likely to be of greater importance. That is, the overall stability of the measure can be considered to be more important than its accuracy in this respect.

In assessing the CPI and Stage 2 PPI indexes against the other criteria identified by the Proponent and the Commission, both are independently verifiable and transparent measures, and both are also amenable to forecasting. However the Commission considers that, on balance, the CPI is a marginally more preferable index than the stage 2 PPI for the following reasons:

- despite being a measure of general household inflation, it is a commonly used index that is likely to be taken into account (along with other measures) in business and investment decisions and modelling; and

- it is a relatively more stable index than the Stage 2 PPI.

The Commission considers that the CPI would maintain the dollar values of the MPC and CPT in real terms and also, therefore, the real revenue earning capacity of generation investments over time.

However, the Commission is mindful that if left to run without intervention, indexing the MPC and CPT by the CPI would be likely to lead to constant increases in these values, which may or may not accurately reflect the capital costs of new OCGT plant at any point in time.

In view of this, the Commission considers that retention of a regular, albeit amended, form of comprehensive review is a necessary means of maintaining a balance in the framework. The parameters of the review are discussed in further detail in chapter 7.

6.4 Commission's conclusion

Selection of a suitable index is a complex process and involves balancing competing criteria. Accordingly while the Commission considers that the factors set out by the Proponent to identify a suitable index are appropriate, a pragmatic approach needs to be taken in applying them and assessing candidate indexes.

Taking into account the matters discussed in this chapter, the Commission has concluded that the CPI is the most suitable measure for use in the indexation of the MPC and CPT. The MPC and CPT act to manage the financial exposure of market participants, but are also important in the provision of price signals to investors. Indexation of these settings by the CPI may not accurately reflect changes in the capital costs of new OCGT plant over time, but will maintain the dollar values of these parameters in real terms, thereby providing certainty in relation to revenue from investments.

7 Implementation of indexation

This section sets out the Commission's analysis of the Proponent's recommendations in relation to various implementation and governance matters associated with indexation of the MPC and CPT.

7.1 Rule change proponent's view

The Proponent included two additional measures as part of the implementation of indexation of the MPC and CPT. These were:

- a mechanism to prevent the levels of the MPC and CPT reducing. If a negative index change was calculated, the MPC and CPT would be left unaltered at their prevailing levels rather than be allowed to fall. The actual levels of the MPC and CPT would only be adjusted again once the fall in the index had been erased by subsequent increases. The Proponent considered that this would provide greater certainty for investors.[55] This mechanism is referred to in this chapter as a 'ratchet'; and

- a provision that would require the newly indexed MPC and CPT values to be rounded to the nearest $100/MWh or $100, respectively. The Proponent considered that this would reduce complexity for market participants and minimise operational concerns in relation to the dispatch process.[56]

The Rule change request also set out a process whereby the Reliability Panel would publish the updated MPC and CPT values within 10 business days of the end of March each year.[57] The updated values would be calculated using ABS data as of the end of February, to mitigate a potential risk that late revision of the data (which would generally first be made available late in January) could affect the MPC and CPT with little notice.[58]

The proposed Rule supplied by the Proponent provides that where the index used ceased to be published or was substantially changed, a replacement index would be determined by the AEMC on the advice of the Reliability Panel.[59]

7.2 Stakeholder views

The NGF expressed broad agreement with the proposals relating to implementation. In particular, it considered that ratcheting would strike the right balance between

55 AEMC Reliability Panel 2010, *Reliability Settings from 1 July 2012*, Rule Change Proposal, 27 August 2010, Sydney, p. 13.

56 Ibid, p. 11.

57 Ibid, p. 13.

58 Ibid, p. 12.

59 Ibid, p. 30.

certainty for investors and cost reflectivity, and further noted that this feature was a central consideration in gaining its support for the Rule change request.[60] The NGF also suggested that the proposal to obligate the Reliability Panel to determine and publish the indexed MPC and CPT values was efficient.[61]

Origin noted its support for rounding the values of the MPC and CPT, considering that this would minimise operational complexity.[62]

Other stakeholders did not express any views on these matters in their submissions.

7.3 Commission's analysis

Ratchet provision

As has been discussed elsewhere in this document, there are potential costs associated with both a price cap that is too high (higher wholesale prices and cost to consumers) and a price cap that is too low (too little investment and an adverse impact on reliability of supply).

Part of the cost of capital for investors is the risk of returns changing over time. Where that risk is high, this might be a disincentive to investment. Ratcheting the movements of the indexed MPC and CPT to prevent downward movements would mitigate an aspect of that risk and provide a greater degree of certainty to investors, with potential beneficial effects in terms of reliability. On the other hand, the effect of the ratchet provision is to reallocate that risk to other market participants, in this case to retailers and end use consumers, with consequential cost impacts.

However, on balance the Commission considers that the risks associated with a low price cap would potentially be more detrimental to consumers, and therefore the Commission's preference is towards an outcome that leads to greater reliability (i.e. investment) than not. The ratchet provision complements indexation by further strengthening the certainty that is provided by indexation, ensuring that the short term downward movements of the index do not detract from this stability.

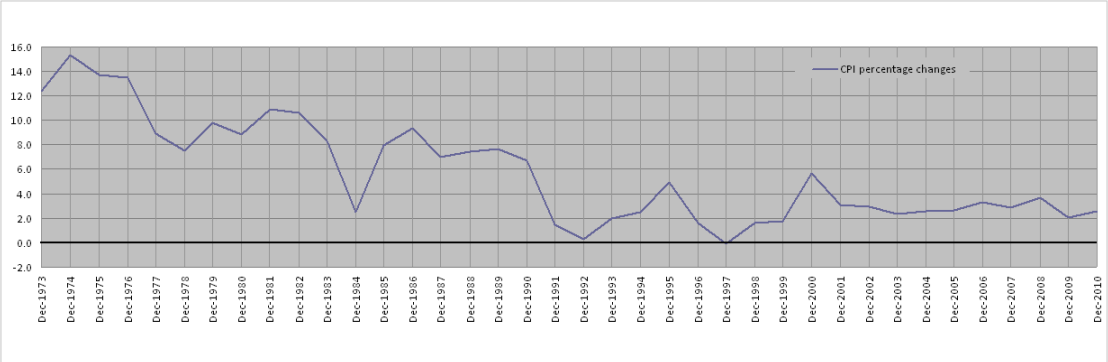
In any event, given the adoption of the CPI by the Commission in its draft Rule, this debate is likely to have little impact in practice. The historical stability of the CPI would indicate that the ratchet provision would be activated very infrequently. Figure 7.1 shows that the annual percentage change in the CPI has rarely reflected negative growth and only once in the last four decades, in 1997 when a change of -0.1% was recorded.

60 NGF, Consultation Paper submission, p. 4.

61 Ibid, p. 7.

62 Origin, Consultation Paper submission, p. 1.

Figure 7.1 CPI percentage changes



Source: Australian Bureau of Statistics.

The retention of a regular and comprehensive review of the Reliability Standard and Reliability Settings (discussed in the following chapter) will provide a further check to this arrangement. If unnecessarily high levels of the MPC and CPT have resulted from the indexation process (including the operation of the ratchet provision), the review (and subsequent Rule change) would allow for these values to be reset to more cost reflective levels.

Rounding of values

To reduce complexity for market participants and minimise operational concerns in relation to the dispatch process, the Proponent proposed that the indexed values of the MPC and CPT would be rounded to the nearest $100/MWh or $100, respectively.

The Commission agrees with the Proponent that this measure will reduce complexity and minimise impacts on dispatch processes. Although costs associated with generating plant are important drivers for determining the appropriate levels of the MPC and CPT, it is not possible to derive values precisely enough for rounding at this level to materially affect the accuracy of resulting price signals.

The Commission also notes that the indexation mechanism in the draft Rule will ensure that subsequent changes to the MPC and CPT will be calculated as if rounding has not occurred. This will avoid unnecessary distortion of these values, and also means that subsequent incremental index increases might not be evident in the published values until such time as they were significant enough to have an impact on the rounding effect.

Timetable and process for determination of indexed values

The proposed Rule incorporates a requirement for the Reliability Panel to make a determination of the indexed MPC and CPT to apply, and publish the new values no later than 10 business days after 30 March of the year being indexed.[63]

63 Clauses 3.9.4(c) and 3.14.1(d) of the Rules. See: AEMC Reliability Panel 2010, *Reliability Settings from 1 July 2012*, Rule Change Proposal, 27 August 2010, Sydney, Appendix B.

The Commission is of the view that the indexation process as set out in both the proposed and draft Rules is largely a mechanistic process and one which would include no element of discretion in the determination of new values. Provided the methodology is clear, once the CPI has been published by the ABS only a simple calculation would be required to be made before publication of the updated MPC and CPT.

Accordingly, the Commission does not agree that it is necessary for a committee, such as the Reliability Panel, to make a determination as to the new levels of the MPC and CPT. Instead, the Commission considers that a more administratively efficient process would be for the calculation of the updated values to be undertaken directly by the AEMC, with the index and indexed values then published on the AEMC's website.

The CPI is published by the ABS on a quarterly basis, three to four weeks after each reference quarter. Once published, the headline measures are generally final and not subject to further revision. In practical terms this means that the figures for the December quarter would be published and available by the end of January of the following year. The draft Rule therefore provides for the AEMC to calculate and publish the new indexed values (to apply from 1 July of that year) by 28 February each year, using CPI data as at 1 February.

Contingency process

The proposed Rule provides that should the Stage 2 PPI cease to be published or be substantially changed then the AEMC would determine another index to be used, on the advice of the Reliability Panel.[64]

Given that the draft Rule provides for the AEMC, rather than the Reliability Panel, to calculate and publish indexed values, and in a reasonably brief period of time, the Commission does not consider that it would be appropriate for its determination of a replacement index to be limited to one advised by the Reliability Panel. The draft Rule therefore provides for the AEMC to determine a replacement index on its own initiative.

However, the Commission notes that, in practice and provided time allowed, the Commission would expect to consult with the Reliability Panel in such circumstances. The Reliability Panel's advice would therefore be one factor that the Commission would have regard to in determining another suitable index to be used.

The Commission further notes that, given the widespread use of the CPI across the economy, it is difficult to envisage circumstances in which such a provision would apply, or would be anything other than a technical decision to use a replacement form of CPI.

64 Ibid.

7.4 Commission's conclusion

With regards to the issues discussed above, the Commission has concluded that:

- the indexation process should incorporate a ratchet mechanism, whereby the indexed values would be prevented from decreasing in line with negative movements of the underlying index, and would not rise again until any falls or losses have been completely erased by subsequent increases;
- the indexed values of the MPC and CPT should be rounded to the nearest $100/MWh or $100, respectively;
- calculation of the indexed MPC and CPT to apply in any year shall be undertaken by the AEMC, and the indexed values will be published on the AEMC website no later than the 28 February, before the 1 July from which they are to apply; and
- should the CPI cease to be published or is substantially changed, then the AEMC should determine another suitable index to be used.

8 Review of Reliability Settings and indexation

This section sets out the Commission's assessment of the review processes associated with the Reliability Settings, and its conclusion that there is a continued need for a regular review of the Reliability Standard and Reliability Settings.

8.1 Rule change proponent's view

In relation to processes for reviewing the Reliability Standard and Reliability Settings, the Proponent proposed two main changes to the current Rules.

Annual review of indexation

Firstly, the Proponent proposed that an annual review should be conducted by the Reliability Panel to consider whether the indexation of the MPC and CPT is no longer appropriate, with regard to how the calculated levels have impacted on:

- spot prices;
- investment in the NEM; and
- power system reliability.

This review would be completed by the end of April each year, following publication of the revised MPC and CPT values, and a report would be provided to the AEMC.

The Proponent also noted that the AEMC may, at any time, including in response to an annual review, request the Reliability Panel to review and report on some or all of the Reliability Standard and Reliability Settings. This review would be conducted in accordance with the Rules consultation procedures[65] and would examine the Reliability Standard and Reliability Settings to a greater level of detail than the annual review process.[66]

Review of the Reliability Standard and Market Floor Price

In the proposed Rule supplied by the Proponent, the current requirement for the Reliability Panel to undertake an integrated review of the Reliability Standard and Reliability Settings was removed.[67]

The Proponent considered that this would have the effect of removing a regular review of the Reliability Standard and MFP. The Proponent suggested that this would be appropriate as the AEMC could initiate a review of either of these parameters on an ad hoc basis, should a need be identified. Additionally, any stakeholder would be able to

65 Rule 8.9.

66 AEMC Reliability Panel 2010, *Reliability Settings from 1 July 2012*, Rule Change Proposal, 27 August 2010, Sydney, p. 14.

67 Ibid, Appendix B.

submit a Rule change request to amend the value of the MFP if it considered that a more appropriate value should apply.[68]

The Proponent considered that removing the review process for the Reliability Standard and MFP would provide regulatory certainty for participants.[69]

8.2 Stakeholder views

A broad range of views was offered by stakeholders in relation to review processes.

At one extreme, the South Australian DTEI suggested that there was no need for either an annual or biennial review. The DTEI suggested that indexation, combined with the provision in the proposed Rule for the AEMC to request that the Reliability Panel undertake a detailed review at any time if required, meant that there was no need for a regular review.[70]

In contrast, the Victorian DPI considered that it would be unwise to remove the requirement for a regular review of the Reliability Standard and Reliability Settings. While this might provide some short term gains in terms of regulatory certainty, the DPI suggested that the long term risks to security of supply would significantly outweigh any such benefits. In particular, the DPI expressed concern that removal of a thorough biennial review would embed the existing underlying values of the MPC and CPT, and it identified a number of concerns as to the adequacy of these. The DPI also suggested that removal of a requirement for a consultative biennial review would reduce, rather than enhance, transparency. In light of these concerns, the DPI recommended that the Rule change request should be rejected.[71]

The AER also expressed support for regular, thorough reviews of the Reliability Settings and Standards. However, it proposed that five years would be a suitable interval between reviews, so that reviews gave careful consideration to the issues (including the function of the CPT) rather than being only an administrative exercise. The AER further noted that, with respect to the proposed annual review of indexation, the proposed timetable would make it difficult to implement any conclusion that didn't affirm the status quo.[72]

Detailed comments

Both Origin and the NGF provided relatively detailed comments on the proposed annual review process.

Origin suggested that a review process to assess whether or not the indexation of the MPC and CPT remained appropriate would be important. However, it considered that

68 Ibid, p. 15.

69 Ibid, p. 18.

70 DTEI, Consultation Paper submission, p. 1.

71 DPI, Consultation Paper submission, pp. 3-4.

72 AER, Consultation Paper submission, pp. 3-4.

further detail on the scope and process of the review was critical. In particular, it commented that the proposed annual process would limit the opportunity for stakeholder consultation given the shorter timeframe under which it would have to take place. It noted that this would be a significant change compared to the current biennial review.

Origin also noted that there would be no default process should the Reliability Panel determine that the particular index or indexation in general was no longer appropriate. There would be little time to determine alternative MPC and CPT values, and it would be likely that a further comprehensive review would be necessary. Origin considered that this would be likely to extend beyond 1 July, leaving the market uncertain about what values would apply.[73]

The NGF considered that it would be necessary to review the appropriateness of the indexed MPC and CPT values on an annual basis. This would ensure that the indexation was on track and was not diverging significantly from the real capital costs of new entrant generation, therefore determining whether the required investment can be delivered.[74]

However, the NGF also considered that the review scope and process were not well defined. It proposed that specific details and definitions should be developed and a more detailed procedure established, either in the Rules or as an additional document. For example, it considered there needed to be a clear threshold definition of 'no longer appropriate' and a prescribed process for how the MPC and CPT would be altered should indexation be considered to be no longer appropriate. The NGF considered that this was particularly important given the more limited consultation process that would result under the shorter timeframe proposed, as compared to the comprehensive consultation process associated with the current biennial review.[75]

The NGF further considered the removal of a regular review of the MFP to be flawed, especially given the increase in wind generation in the NEM and the likelihood of a greater frequency of more negative pricing events in the future.[76]

8.3 Commission's analysis

Proposed annual review process

In assessing the annual review of indexation proposed in the Rule change request, the Commission identified similar concerns to Origin and the NGF.

Firstly, it is not clear that there would be sufficient time to undertake a review, given the timings proposed in the Rule change request. Under the proposed Rule, the Reliability Panel would determine the indexed values and publish them no later than

73 Origin, Consultation Paper submission, pp. 1-2.

74 NGF, Consultation Paper submission, p. 7.

75 Ibid.

76 Ibid, p. 5.

10 business days after 30 March (which would be mid-April). A report of the annual review would have to be submitted to the AEMC by 30 April of that year. There would therefore only be a period of 2-3 weeks between the publication of the updated values and the conclusion of the review of their appropriateness. In contrast, the Reliability Panel allows approximately a year for the consultation process undertaken for the current biennial review.

Secondly, it is not clear what the test of whether or not indexation remained appropriate would be. In the Rule change request, the Proponent sets out matters to which the Reliability Panel would give consideration to in making its assessment, and states that the annual review process would be "to determine whether higher increases in the MPC or CPT are necessary, and whether there were any significant changes that occurred to the economics and mechanisms for delivering the Reliability Standard."[77] However, this test was not included in the proposed Rule, and, as discussed above, it is not clear that there would be sufficient time to undertake the detailed and highly technical analysis that would be required to undertake such an assessment.

The proposed Rule also does not specify what the contingency process would be if the Reliability Panel was to conclude in a review that indexation was no longer appropriate. In that the indexation mechanism would be specified in the Rules, to make any changes to this would require the Reliability Panel to submit a Rule change request to the AEMC. While it might technically be possible for the AEMC to expedite a Rule change request on an urgent basis before 1 July, to do so would involve a very compressed consultation and assessment process. The market would also receive virtually no notice of any subsequent change to the MPC and CPT before their implementation on 1 July.

In its Rule change request, the Proponent contemplated that one outcome of an annual review might be a recommendation that a more detailed review of the indexation of the MPC and CPT may be required.[78] Such a review would be expected to continue past 1 July, and therefore any changes made through a resulting Rule change request would not be implemented until the following 1 July, at the earliest. Therefore, under such circumstances, the values of the MPC and CPT which had been found to be inappropriate would have to be applied regardless.

The Commission further considers that an annual review would more generally be expected to undermine the certainty that indexation is intended to provide. In addition to the specific concerns identified above, the inclusion of such a process introduces a risk that the Reliability Panel could find the values of the MPC and the CPT to be inappropriate on every occasion they were adjusted.

The Commission has therefore concluded that the proposed annual review process is unlikely to be either workable or desirable.

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77 AEMC Reliability Panel 2010, *Reliability Settings from 1 July 2012*, Rule Change Proposal, 27 August 2010, Sydney, p. 5.

78 Ibid, p. 14.

Impact of using CPI in indexation

In chapter 7, it was noted that, despite it being the most suitable index overall, the CPI is unlikely to be highly accurate in terms of reflecting changes in the capital costs of new OCGT plant. The Commission is therefore mindful that, if left to run without intervention, indexing the MPC and CPT by the CPI is likely to lead to values that diverge from the most appropriate levels over time, albeit less so than would be the case if these values continued to be expressed in fixed nominal terms.

The Commission therefore considers that there is a need to review the values of the MPC and CPT on a regular basis. This will ensure that these settings remain correctly calibrated in terms of incentivising a level of investment consistent with the achievement of the Reliability Standard, while limiting any unnecessary cost impacts.

It appears the Proponent anticipated that, in most cases, the outcome of the proposed annual review would have been to confirm that the indexed values of the MPC and CPT remained broadly reflective of the underlying cost drivers. However, the Commission considers that under the draft Rule, there should instead be an expectation that these parameters would generally require recalibration. This implies that a more involved review process would be required.

Review of the Reliability Standard and Market Floor Price

In the Rule change request, the Proponent proposed the removal of any requirement for a regular review of the Reliability Standard and the MFP, considering that this would promote regulatory certainty.

However, the Commission considers that, given its importance to the levels of investment and reliability in the market, it is desirable that a regular review of the Reliability Standard be maintained. Under the existing reliability framework, the level of the Reliability Standard is a key determinant of the levels of the Reliability Settings.

The Commission has therefore concluded that the Reliability Panel should continue to undertake a regular, comprehensive review of the Reliability Standard and Reliability Settings. This would allow the Reliability Standard and the settings designed to allow for its achievement to be considered in a robust and integrated manner, including full consultation.

The Commission further considers that consideration of the MFP should form part of this review. Given the requirement for the retention of a comprehensive review, there appears to be little justification for removing the consideration of the MFP from this. The Commission also agrees with the NGF that developments in the market are likely to mean that there would be some benefits from continuing to review the MFP.

A comprehensive review of the Reliability Standard and Reliability Settings would also provide the opportunity to evaluate the effectiveness of the indexation process. As suggested in the analysis in chapter 7, the Commission does not consider that the ability of the index to perfectly maintain cost reflectivity is the only, or even the main, determinant of its effectiveness. Rather, the Commission anticipates that the Reliability

Panel would assess the ongoing appropriateness of indexation and the specific index employed against the full range of criteria used in this draft Rule determination, including stability and the desirability of an index being independently verifiable and amenable to forecasting.

Frequency of review

Elsewhere in this document, the Commission notes that the purpose of indexation is to provide more certainty for market participants. Therefore, retention of a comprehensive review of the Reliability Standard and Reliability Settings every two years, as at present, would be inconsistent with realising the benefits provided by the introduction of indexation.

The Commission also notes that there are practical difficulties associated with the current review process in terms of its timings. This is because there is insufficient time for any Rule changes affecting the values of the Reliability Settings to take effect before the next review is commenced. This means that the Reliability Panel is unable to assess the impact of recent, or forthcoming, changes in making its recommendations for the future levels of these values.

For instance, the Reliability Panel was required to complete its most recent review of the Reliability Standard and Reliability Settings (to apply from 1 July 2012) by 30 April 2010. This was before the implementation of increases to the MPC and CPT that took effect from 1 July 2010.

In light of these considerations, the Commission has concluded that a four-yearly review would represent an appropriate balance between the certainty provided by indexation between reviews and the need to periodically check that the Reliability Standard and Reliability Settings continue to be appropriate and consistent with each other. As per the current process, any changes recommended following this review would be to apply two years after the conclusion of the review. This timetable will allow for any changes to the Reliability Standard or Reliability Settings that have been introduced to take effect before the following review is commenced.

The first review would be carried out by the Reliability Panel by 30 April 2014, and would consider the Reliability Standard and Reliability Settings to apply from 1 July 2016. Assuming a consultation process of approximately a year, this would mean that the review would commence in April or May 2013, approximately ten months after the introduction of indexation on 1 July 2012.

Consistency with values of customer reliability

As discussed in this document, the current reliability framework is based on supply side considerations. That is, the price caps in the market are designed to ensure that sufficient generation capacity is delivered to provide the level of reliability deemed appropriate in the Reliability Standard. Any alternative approach, for instance determining price caps directly by reference to the value that consumers place on reliability at a given time, would require a change to this framework. The Commission considers that this would be outside the scope of this draft Rule determination.

However, the Commission believes that the parameters for the regular reviews of the Reliability Standard and Reliability Settings should be sufficiently flexible that consideration could be given to other relevant measures of reliability. In particular, this would include a national value of customer reliability, if developed. This does not amount to an explicit requirement that the Reliability Standard and Reliability Settings should reflect the level of reliability valued by any particular class of consumers, but acknowledgement that it is appropriate, in carrying out a review, to consider the consistency of the Reliability Settings against the value placed by consumers on reliability.

The draft Rule therefore specifies that, in undertaking a review, the Reliability Panel must have regard to any value of customer reliability determined by AEMO which the Reliability Panel considers to be relevant. This would include the values that currently exist for Victoria as well as national values once developed, although the Commission would expect that the Reliability Panel would give a greater weighting to national values. In both cases, the Commission would anticipate that the relevant value would be that for the sector that values customer reliability at the lowest level. However, the draft Rule is not prescriptive in this regard, as it is not clear how national values may be specified and in order to provide flexibility for future developments.

8.4 Commission's conclusion

Taking all of the above matters into account, the Commission has concluded that retention of a regular integrated review is a necessary element in the reliability framework, to ensure that:

- the Reliability Standard remains appropriate;
- the values of the Reliability Settings continue to be consistent with meeting the Reliability Standard; and
- the indexation process is operating effectively and remains appropriate.

The Commission considers that this review will differ in substance from the current biennial review only by the addition of indexation to the scope of the review. However the Reliability Panel would only be required to undertake the review every four years, rather than two as at present. This arrangement maintains an appropriate balance between certainty for participants and the need to maintain timely vigilance in relation to overall NEM reliability performance.

Abbreviations

ABS	Australian Bureau of Statistics
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
APC	Administered Price Cap
CCGT plant	combined cycle gas turbine plant
Commission	See AEMC
Concept	Concept Economics
CPI	Consumer Price Index
CPT	Cumulative Price Threshold
DPI	Victorian Department of Primary Industries
DTEI	South Australian Department for Transport, Energy and Infrastructure
MCE	Ministerial Council on Energy
MFP	market floor price
MPC	Market Price Cap
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Electricity Objective
NGF	National Generators Forum
OCGT plant	open cycle gas turbine generation plant
PPIs	Producer Price Indexes
Proponent	Reliability Panel
QCA	Queensland Competition Authority

Reliability Standard	NEM Reliability Standard
SKM	Sinclair Knight Mertz
Stage 2 PPI	Intermediate (Stage 2) Producer Price Index
USE	unserved energy

A Summary of issues raised in submissions

Stakeholder	Issue	AEMC Response
General		
Origin Energy	Support the fixing of MPC and CPT at 1 July 2010 levels for purposes of indexation. Current levels strike the right balance between being an investment signal without creating unmanageable wholesale risk (p. 1).	These comments have been noted, although the Commission considers the review of the current levels of the MPC and CPT to be outside of the scope of this draft Rule determination.
Department of Primary Industries (Victoria)	Concern that the reasons advanced by the Proponent for maintaining the current values are not sufficiently robust (pp. 2-3).	These comments have been noted, although the Commission considers the review of the current levels of the MPC and CPT to be outside of the scope of this draft Rule determination.
Indexation of the MPC and CPT		
Australian Energy Regulator	Support in principle for the MPC to be increased in line with producer costs (p. 3).	The Commission agrees that indexation of the MPC is appropriate. The Commission's reasons are discussed in further detail in chapter 5 of this draft Rule determination. However, for the reasons given in chapter 6 of this draft Rule determination, the Commission considers that the CPI is a more suitable index than the Stage 2 PPI.
Australian Energy Regulator	The decision to increase the MPC should recognise the effect of increasing the potential impact of an exercise of market power (p. 3).	These comments have been noted, although the Commission considers this issue to be outside of the scope of this draft Rule determination.
Australian Energy Regulator	There is a fundamental need to draw a distinction between market settings that create incentives to invest in generation capacity and those designed to cap market risk (p. 1).	Although the various Reliability Settings each have a different emphasis, they are also linked; therefore while the Commission concurs that specific consideration should be given to the CPT, it cannot be considered in complete isolation from the MPC.

Stakeholder	Issue	AEMC Response
Australian Energy Regulator	The Rule change request does not properly justify the indexation of the CPT; the CPT should be considered in its own right and not be treated as an adjunct to the MPC (p. 2).	Further to the above comments, the Commission considers that where the MPC is adjusted by indexation, a similar increase to the CPT is justified to ensure that it is not inadvertently triggered more frequently by higher spot prices.
Department of Primary Industries (Victoria)	Support for the annual indexation of MPC and CPT (p. 1).	The Commission agrees that indexation of the MPC and CPT is appropriate. The Commission's reasons are discussed in further detail in chapter 5 of this draft Rule determination.
Department for Transport, Energy and Infrastructure (SA)	Support for the annual indexation of MPC and CPT. Benefits of this include (p. 1): • ensuring the real value of the Reliability Settings are maintained over time; • reducing the risk of under investment in generation.	The Commission agrees that indexation of the MPC and CPT is appropriate. The Commission's reasons are discussed in further detail in chapter 5 of this draft Rule determination.
National Generators Forum	Annual indexation of MPC will have beneficial impact on (pp. 2-3): • investor certainty; • ability to sustain the time value of money; • ability to capture generation cost increases; • delivering the reliability standard in peakier demand conditions.	The Commission agrees that indexation of the MPC and CPT is appropriate. The Commission's reasons are discussed in further detail in chapter 5 of this draft Rule determination.
Origin Energy Limited	Support for the annual indexation of MPC and CPT (p. 1).	The Commission agrees that indexation of the MPC and CPT is appropriate. The Commission's reasons are discussed in further detail in chapter 5 of this draft Rule determination.

Stakeholder	Issue	AEMC Response
Selection of appropriate index		
Department for Transport, Energy and Infrastructure (SA)	Support the indexation of the MPC and CPT on the basis of the Intermediate (stage 2) Producer Price Index (p. 1).	For the reasons given in chapter 6 of this draft Rule determination, the Commission considers that the CPI is a more suitable index than the Stage 2 PPI.
National Generators Forum	The selection criteria set out by the Panel are appropriate, as is the selection of the Producer Price index (pp. 4-5).	For the reasons given in chapter 6 of this draft Rule determination, the Commission considers that the CPI is a more suitable index than the Stage 2 PPI. While the Commission considered that the criteria identified by the Proponent to be appropriate, it considered that stability should also be added to this list.
National Generators Forum	Notwithstanding the above, it is appropriate for the AEMC to consult with the ABS and seek their view on the appropriateness of the PPI as an index to be used in the energy industry (p. 5).	The Commission has undertaken work to identify and evaluate a suitable index. While the ABS provides public access and assistance in relation to a range of indexes, they do not provide advice or recommendations in relation to the selection of an index for a specific purpose.
Origin Energy Limited	Support the use of the Intermediate (stage 2) Producer Price Index as the appropriate index (p. 2)	For the reasons given in chapter 6 of this draft Rule determination, the Commission considers that the CPI is a more suitable index than the Stage 2 PPI.
Ratchet and rounding provisions		
National Generators Forum	The effective ratcheting of the index strikes the right balance between certainty for investors and cost reflectivity; support for the proposed arrangements would be withdrawn if this feature was removed (p. 4).	The Commission agrees that a ratchet provision would improve certainty for investors, but for the reasons set out in chapter 7 of this draft Rule determination does not consider that indexation (including the operation of the ratchet provision) should be allowed to operate indefinitely without some form of regular review to ensure proper cost reflectivity is maintained.

Stakeholder	Issue	AEMC Response
Origin Energy	Support the MPC and CPT values being rounded to the nearest $100/MWh and not decreasing from a previous year. This minimises operational complexity while improving certainty, transparency and predictability of the values for market participants (p. 1).	The Commission agrees that a ratchet provision would improve certainty for investors, but for the reasons set out in chapter 7 of this draft Rule determination does not consider that indexation (including the operation of the ratchet provision) should be allowed to operate indefinitely without some form of regular review to ensure proper cost reflectivity is maintained. The Commission however agrees that the rounding of the indexed values of the MPC and CPT is efficient.
Review process		
Australian Energy Regulator	Support the regular, thorough reviews of the Reliability Standard and Reliability Settings which should encompass the effectiveness of the reliability framework as well as the levels of the various parameters (p. 3).	The Commission agrees that there is merit in the retention of a regular, comprehensive review of the Reliability Standard and Reliability Settings. Reasons for this view are given in chapter 8 of this draft Rule determination.
Australian Energy Regulator	If the reviews are overly frequent they tend to become an administrative exercise rather than a careful consideration of the issues. Accordingly the AER considers that five years is a suitable interval between reviews, but reiterate that the function of the CPT warrants a separate review (p. 4).	The Commission agrees that the regularity of these comprehensive reviews must not be set so that it becomes nothing more than an administrative exercise and considers four years between reviews to be an appropriate interval, allowing sufficient time for any changes to take effect. The Commission considers that such a review provides sufficient opportunity for the Reliability Panel to assess the role of the CPT within the reliability framework. This is discussed in more detail in chapter 5 of this draft Rule determination.
Department of Primary Industries (Victoria)	Consider that the removal of the requirement for biennial reviews is contrary to the National Electricity Objective (p. 1).	The Commission agrees that retention of a regular, comprehensive review is necessary to evaluate the continued efficient operation of the reliability framework. The Commission's reasons are discussed in more detail in chapter 8 of this draft Rule determination.

Stakeholder	Issue	AEMC Response
Department of Primary Industries (Victoria)	Removal of the requirement for a thorough and transparent biennial review will merely serve to embed the existing MPC and CPT. Given the significant impact of the Reliability Standard and Reliability Settings on security of supply it is critical that there remains a structured and consultative process for their regular review (p. 3).	The four yearly review proposed by the Commission in this draft Rule determination will provide an opportunity to review the appropriate levels of the Reliability Standard and Reliability Settings on an ongoing basis. This is discussed in more detail in chapter 8 of this draft Rule determination.
Department of Primary Industries (Victoria)	Given the significant challenges currently facing the NEM it would be unwise to remove the requirement for a regular review (p. 4).	The Commission agrees that there is merit in the retention of a regular, comprehensive review of the Reliability Standard and Reliability Settings. Reasons for this view are given in chapter 8 of this draft Rule determination.
Department of Primary Industries (Victoria)	Removal of the requirement for a consultative biennial review would reduce the amount of information available to the market surrounding the factors used to underpin the Reliability Standard and Reliability Settings, which is contrary to the interests of transparency (p. 4).	The four yearly review proposed by the Commission in this draft Rule determination will be undertaken by the Reliability Panel in accordance with the consultation procedures set out in the Rules. This will provide stakeholders with a full opportunity to scrutinise and participate in the review process.
Department for Transport, Energy and Infrastructure (SA)	Simplified process of indexation as proposed removes the requirement for any review; there is sufficient provision for the AEMC to request a more detailed review to be undertaken if required (p. 1).	The Commission considers that there is merit in the retention of a regular, comprehensive review of the Reliability Standard and Reliability Settings. Reasons for this view are given in chapter 8 of this draft Rule determination.
National Generators Forum	The removal of the biennial review will provide greater regulatory certainty but the decision to remove the MFP from any review is a flaw (p. 5).	The Commission considers that there is merit in the retention of a regular, comprehensive review of the Reliability Standard and all of the Reliability Settings. Reasons for this view are given in chapter 8 of this draft Rule determination.

Stakeholder	Issue	AEMC Response
National Generators Forum	The proposed timetable during the annual review process is not of material concern but proposed process can be improved by minor adjustments (p. 6).	The Commission has proposed a comprehensive four yearly review in place of the limited annual review as proposed by the Proponent. The reasons for this are provided in chapter 8 of this draft Rule determination.
National Generators Forum	Remain concerned that the timeframe may not leave much time for consultation, therefore publication of annual report could be extended to 15 May to provide sufficient time for consultation and also sufficient notice period for adjustment of the MPC and CPT (p. 6).	The Commission agrees that there are practical difficulties associated with the truncated review timetable as set out in the Rule change request. The Commission considers that the comprehensive review set out in the draft Rule will provide an opportunity for a robust assessment of the values and indexation of the MPC and CPT, including full stakeholder consultation. Further details of the draft Rule are provided in chapters 7 and 8 of this draft Rule determination.
National Generators Forum	Support the revised review arrangements as these do not subject the Reliability Standard and Reliability Settings to regular review and do not allow for consideration of other factors such as forecasts or use of the VCR. Would prefer this form of detailed review to be initiated by the AEMC or a market participant on an ad hoc basis (p. 6).	The Commission considers that there is merit in the retention of a regular, comprehensive review of the Reliability Standard and all of the Reliability Settings. The Commission agrees that the reliability framework is currently based on supply side considerations, but does not regard a consistency check of these values against factors such as the VCR as being inappropriate.
National Generators Forum	The annual review of the appropriateness of the indexed MPC and CPT values is a vital part of the revised arrangements since it ensures that the PPI is on track and is not diverging from the real capital costs of new entrant OCGT, and determines whether the required investment can be delivered (p. 7).	The Commission agrees that a review of the appropriateness of the indexed values is an important check however does not agree that the review arrangements as proposed in the Rule change request represents the most efficient outcome. The Commission has instead proposed an alternative review, the details of which are set out in chapter 8 of this draft Rule determination.

Stakeholder	Issue	AEMC Response
National Generators Forum	The annual review scope and process are not well defined. Would like to see greater clarity around the proposed process; the AEMC should consider what details are appropriate and whether an additional procedure document detailing broader process needs to be developed to sit alongside the Rules. For example there needs to be a clear threshold definition for 'no longer appropriate', particularly given the move to a more limited consultation process (p. 7).	The Commission agrees with this assessment and has proposed an alternative review, the details of which are set out in chapter 8 of this draft Rule determination.
National Generators Forum	While a significant systematic change in the NEM would need to occur in order for a conclusion that indexation is no longer appropriate, the short timeframe between publication and review provides little time for alternative values to be established. This requires a more prescriptive process to be developed (p. 7).	The Commission agrees that the review process set out in the Rule change request leads to some practical challenges in implementation and has therefore proposed an alternative review, the details of which are set out in chapter 8 of this draft Rule determination.
National Generators Forum	Proposal to obligate the Panel to determine and publish the indexed MPC and CPT in the proposed manner is efficient (p. 7).	The Commission considers that a Panel determination to carry out a relatively mechanistic calculation of the indexed values is unnecessary. In addition the Commission considers that the reference to 'determination' in the Rule change request is misleading, and might potentially lead to a misunderstanding of what the process actually requires. The Commission has therefore proposed an alternative process which is set out in chapter 7 of this draft Rule determination.
Origin Energy Limited	As the new arrangements represent a change in emphasis, direction and timing, further detail on the scope and process of the review is critical. The lack of detail makes it difficult to identify whether there are potential difficulties with the new review structure (p. 2).	The Commission agrees that the arrangements as set out in the Rule change request lack clarity. For the reasons set out in the relevant chapters of this draft Rule determination, the Commission has proposed an alternative process for indexation which is set out in chapter 7, and a four yearly comprehensive review, set out in chapter 8 of this draft Rule determination.

Stakeholder	Issue	AEMC Response
Origin Energy Limited	There is no default process should the Panel determine that the particular index or indexation in general is no longer appropriate, and little flexibility for the Panel to determine alternative MPC and CPT values under the proposed timetable. The Rule needs to anticipate and make provisions for this scenario (p. 2).	The Commission agrees that the arrangements as set out in the Rule change request lack clarity. The Commission has proposed an alternative process for review which is set out in chapter 8 of this draft Rule determination.