AEMC

RULE

Australian Energy Market Commission

DRAFT RULE DETERMINATION

NATIONAL ELECTRICITY AMENDMENT (AMENDMENT OF THE MARKET PRICE CAP, CUMULATIVE PRICE THRESHOLD AND ADMINISTERED PRICE CAP) RULE

PROPONENT
Reliability Panel

14 SEPTEMBER 2023

INQUIRIES

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Reference: ERC0353

ABOUT THE AEMC

The AEMC reports to the energy ministers. We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the energy ministers.

ACKNOWLEDGEMENT OF COUNTRY

The AEMC acknowledges and shows respect for the traditional custodians of the many different lands across Australia on which we all live and work. We pay respect to all Elders past and present and the continuing connection of Aboriginal and Torres Strait Islander peoples to Country. The AEMC office is located on the land traditionally owned by the Gadigal people of the Eora nation.

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SUMMARY

1 The Australian Energy Market Commission (AEMC or Commission) has decided to make a more preferable draft rule (draft rule) to amend the existing market price settings in the national electricity market (NEM). The draft rule will progressively increase the market price cap (MPC) and cumulative price threshold (CPT), and maintain the administered price cap (APC) at its current level from 1 July 2025 to 30 June 2028.

2 These changes are needed as the existing market price settings are too low to support the supply of electricity when we need it most, during times:

- when there is a shortage of supply to meet demand, in the case of the MPC and CPT
- of extended very high prices, in the case of the APC.

3 These changes will help to keep the electricity system reliable for households and businesses as further pressure is placed on the system as we transition to net zero.

4 These changes also work with other mechanisms to support the energy transition, including the Commonwealth Government's Capacity Investment Scheme and State-based jurisdictional schemes.[1] The draft MPC and CPT, in partnership with these schemes, will help to support investment in a mix of supply options, including storage, demand response and gas generation. Together this will help decarbonise the NEM by providing the flexible supply needed to support reliability given increasing levels of wind and solar generation.

5 In making the draft rule, the Commission has focused on addressing reliability risks at the lowest possible cost to households and businesses, particularly in light of current cost of living concerns. The draft rule will result in some relatively small short-term cost increases for consumers, but the Commission considers these costs will be outweighed by improvements in reliability and lower costs for consumers over the long term.

6 The draft rule has been made in response to a rule change proposal submitted by the Reliability Panel, following its 2022 reliability standard and settings review.

7 We are seeking feedback on our draft determination and draft rule by **26 October 2023**.

The NEM is undergoing significant change

8 The NEM is going through unprecedented change as ageing coal fired generation retires and is being replaced by renewable energy and storage during the transition towards net zero. In its 2022 Integrated System Plan the Australian Energy Market Operator (AEMO) forecast that by 2030, 60% of coal fired generation will exit the market, while grid scale wind and solar will almost triple and storage capacity will increase by over seven-fold.

9 Ageing coal fired generation is already exiting the market faster than anticipated, which is placing increasing pressure on the electricity system. Significant reliability risks arose in June 2022 when the market was suspended due in part to the increasing unreliability of ageing

1 The Commission notes that the CIS and some jurisdictional schemes remain in development. The Commission has used the information available at the time of publication to assess interactions with the market price settings.

coal fired generation. Further reliability risks following the closure of coal fired generation have also been forecast by AEMO in its 2023 Electricity Statement of Opportunities. The ESOO finds that reliability risks are increasing with unserved energy in NSW and Victoria now forecast to be above the reliability standard during the period relevant to this rule change.[2]

Changes to the market price settings are needed to support the energy transition

10 To support more generation, demand response and storage entering the system to meet our electricity needs as the system transitions, the Commission has made a draft rule to increase the MPC and CPT and maintain the current APC.

11 The MPC is the price ceiling in the wholesale electricity market and is currently set at $16,600/MWh. It is generally only reached when there is a shortage of supply to meet demand and serves as a price signal for more generation to enter the system. The CPT is a trigger point to end a sustained seven-day period of extreme high prices in the wholesale electricity market and is currently set at the equivalent of 7.5 hours at the MPC. The APC caps the price in the wholesale electricity market, and the associated financial risk, once the CPT has been reached. The APC is currently set at $600/MWh but is scheduled to revert to $300/MWh on 1 July 2025.

12 These price settings have no impact on wholesale electricity prices over 99% of the time. But, they have a significant impact in encouraging more supply into the system when we need it most, during times when there is a shortage of supply to meet demand, and during times of extended very high prices.

13 Under the draft rule:

- the MPC will progressively increase from $18,600/MWh on 1 July 2025 to $22,800/MWh on 1 July 2027; and
- the CPT will progressively increase from $1,674,000/MWh (or 7.5 hours at the MPC) on 1 July 2025 to $2,325,600/MWh (or 8.5 hours at the MPC) on 1 July 2027.[3]

14 These changes are consistent with those proposed by the Reliability Panel in its rule change proposal and will help to support the necessary investment to maintain reliability as the NEM transitions.

15 The draft rule also maintains the APC at $600/MWh. This differs from the Reliability Panel's rule change proposal to set the APC at $500/MWh from 1 July 2025. We have made a more preferable rule to maintain the APC at $600/MWh as it will improve reliability for consumers during administered price periods by encouraging more generation and storage to operate. This will also reduce the reliance on AEMO's intervention and compensation processes.

16 Details of the changes to the market price settings from 1 July 2025, in 2022 dollars, under

2 AEMO's 2023 ESOO central scenario forecast unserved energy will be above the reliability standard in NSW for the entire rule change period, and above the reliability standard in Victoria in 2026-27. Further information is available at: https://aemo.com.au/en/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-and-reliability/nem-electricity-statement-of-opportunities-esoo

3 Note these figures are in 2022 dollars, the MPC and CPT are annually indexed by CPI to maintain their real value over time.

the draft rule are set out in the table below.

Table 1: **Changes to the MPC, CPT and APC under the draft rule**

MARKET PRICE SETTINGS	1 JULY 2025	1 JULY 2026	1 JULY 2027
MPC	$18,600/MWh	$20,700/MWh	$22,800/MWh
CPT	$1,674,000/MWh	$1,987,200/MWh	$2,325,600/MWh
CPT hours at MPC	7.5	8	8.5
APC	$600/MWh	$600/MWh	$600/MWh

The draft rule will improve reliability and reduce costs for consumers

17 The draft rule's changes to the MPC and CPT, in partnership with jurisdictional schemes, will help to support a mix of supply options, including storage, demand response and gas generation, which together will provide the flexible supply needed to reinforce increasing levels of wind and solar generation. The mix of supply options encouraged by the draft rule MPC and CPT will therefore support higher reliability levels than under existing settings.

18 Reliability outcomes will also be improved during administered price periods, with analysis by the Commission indicating that an APC of $600/MWh will cover the short-run marginal costs of 85% of thermal generators. In contrast, an APC of $500/MWh, as proposed by the Reliability Panel, would only cover the short-rum marginal costs of 77% of thermal generators. Maintaining the APC at $600/MWh will encourage hydro and battery storage, and existing thermal generation to operate during times of extended very high prices, reducing the risk of outages for consumers.

19 Over the long term, we have modelled that the draft rule's increases in the MPC and CPT will reduce costs to consumers compared to if the current settings were maintained. These lower consumer costs arise due to higher levels of investment in generation and storage. This will increase competition in the NEM and enable more supply to be available when households and businesses need it, reducing wholesale electricity prices for consumers over the long term.

20 Over the period to 2028, the changes in the market price settings are modelled to increase retail electricity prices by 2.7% on average across all regions of the NEM. This is broadly consistent with the modelling undertaken by the Reliability Panel in its 2022 Reliability Standard and Settings review. We understand the current cost of living concerns that households and businesses across Australia are facing and note that any further increases in electricity prices will be difficult for many to manage. However, we consider the long-term benefits of the draft rule for consumers in terms of improved reliability and lower long-term costs outweigh this relatively small short-term cost increase.

We have considered the national electricity objective and stakeholder feedback in marking our draft rule

21 In making our draft rule, we have considered the national electricity objective (NEO) as well as five assessment criteria that reflect the key potential impacts of the rule change proposal. We consider the draft rule meets the assessment criteria in these ways:

1. **Delivering efficient levels of reliability** — the draft rule will deliver efficient long-term levels of reliability that correspond to consumer willingness to pay.
2. **Maximising outcomes for consumers** — the draft rule appropriately balance costs and benefits for consumers by minimising the costs of achieving efficient levels of reliability.
3. **Enhancing market efficiency** — the draft rule will enhance market efficiency across operational and investment timeframes through competition, rather than directions and obligations.
4. **Principles of good regulatory practice** — the draft rule will support good regulatory practice by promoting predictability and stability in the regulatory framework, interacting constructively with other reforms underway, and appropriately balancing systemic financial risk and market efficiency considerations.
5. **Emission reduction** — the draft rule will, on balance, promote the long-term decarbonisation of the NEM as it will encourage investment in supply options to support higher levels of renewable generation.

22 We have also considered stakeholder feedback, including submissions in response to the rule change consultation paper and discussions with a wide range of stakeholders. We note while most stakeholders supported the Reliability Panel's proposed increases in the MPC and CPT, some consumer bodies and advocates raised concerns about the costs of these changes and whether these increases were needed to support new investment. There were also mixed stakeholder views on the appropriate level of the APC.

23 Overall, after carefully considering stakeholder feedback and our assessment criteria, we consider the draft rule will better contribute to the NEO and best promote the long-term interests of consumers, compared to other options, including retaining the existing price settings.

HOW TO MAKE A SUBMISSION

We encourage you to make a submission

Stakeholders can help shape the solution by participating in the rule change process. Engaging with stakeholders helps us understand the potential impacts of our decisions and contributes to well-informed, high-quality rule changes.

How to make a written submission

Format: We have published a template for submissions with this report but you can also use your own format (for example a letter).

Due date: Written submissions responding to this draft determination and rule must be lodged with Commission by **26 October 2023**.

How to make a submission: Go to the Commission's website, www.aemc.gov.au, find the "lodge a submission" function under the "Contact Us" tab, and select the project reference code ERC0353**.**[4]

Tips for making submissions on rule change requests are available on our website.[5]

Publication: The Commission publishes submissions on its website. However, we will not publish parts of a submission that we agree are confidential, or that we consider inappropriate (for example offensive or defamatory content, or content that is likely to infringe intellectual property rights).[6]

Next steps and opportunities for engagement

There are other opportunities for you to engage with us, such as one-on-one discussions or industry briefing sessions.

You can also request the Commission to hold a public hearing in relation to this draft rule determination.[7]

Due date: Requests for a hearing must be lodged with the Commission by **21 September 2023**.

How to request a hearing: Go to the Commission's website, www.aemc.gov.au, find the "lodge a submission" function under the "Contact Us" tab, and select the project reference code **ERC0353.** Specify in the comment field that you are requesting a hearing rather than making a submission.[8]

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4 If you are not able to lodge a submission online, please contact us and we will provide instructions for alternative methods to lodge the submission

5 See: https://www.aemc.gov.au/our-work/changing-energy-rules-unique-process/making-rule-change-request/our-work-3

6 Further information about publication of submissions and our privacy policy can be found here: https://www.aemc.gov.au/contact-us/lodge-submission

7 NEL s 101(1a).

8 If you are not able to lodge a request online, please contact us and we will provide instructions for alternative methods to lodge the request.

For more information, you can contact us

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1 WE HAVE MADE A DRAFT RULE THAT AMENDS THE MARKET PRICE SETTINGS

The Australian Energy Market Commission (AEMC or Commission) has made a more preferable draft rule (draft rule) to increase the market price cap (MPC), cumulative price threshold (CPT), and maintain the administered price cap (APC), three of the four market price settings in the NEM.

The Commission has made this draft determination in response to a rule change request from the Reliability Panel (Panel) following its 2022 reliability standard and settings review (RSS review). The Commission's draft determination applies to the period 1 July 2025 to 30 June 2028 (the rule change period).[9]

The Commission considers its draft rule supports power system reliability while minimising consumer costs. It will encourage investment in generation and demand response to support reliability as thermal generators retire and the NEM shifts to high penetrations of intermittent renewable generation. The Commission's draft rule is expected to work alongside jurisdictional reliability schemes to lead to the best reliability outcomes for consumers throughout the transition. We are seeking feedback on this draft rule.

This chapter includes the following:

- Section 1.1: the Commission has made a draft rule that increases the MPC, CPT and APC
- Section 1.2: the draft rule will support reliability as the NEM transitions to renewable energy
- Section 1.3: the draft rule minimises consumer costs while supporting reliability
- Section 1.4: the draft rule works together with jurisdictional schemes to deliver reliability in a transitioning power system
- Section 1.5: the draft rule on the APC supports market stability, efficiency, and reliability in emergency circumstances
- Section 1.6: the Commission's decision has been shaped by stakeholder feedback.

1.1 The Commission has made a draft rule that increases the MPC, CPT, and APC

The Commission's draft determination is to increase the MPC, CPT, and APC. It considers this increase is in the long-term interest of consumers. The Commission's determination is described in section 1.1.1 to section 1.1.3 below.

9 The rule change period corresponds to the periods specified in clause 3.9.3A(d)(2) of the NER and amended in the Extension of time and reduction in scope of the 2022 reliability standard and settings review rule change. Further information can be found at: https://www.aemc.gov.au/rule-changes/extension-time-and-reduction-scope-2022-reliability-standard-and-settings-review.

1.1.1 The draft rule increases the MPC and CPT

The Commission has elected to set the MPC and CPT as recommended by the Reliability Panel. While the values for the MPC and CPT are the same as those proposed in Panel's rule change request, they have been updated from 2021 dollars to 2022 dollars.[10]

The Commission's draft rule progressively adjusts the MPC (in 2022 dollars) from $18,600/MWh at 1 July 2025 to $22,800/MWh by 1 July 2027. Over the same period, the CPT will increase from $1,674,000/MWh to $2,325,600/MWh. From 1 July 2027 the CPT will correspond to 8.5 hours of market prices at the MPC. Table 1.1 presents the draft rule MPC and CPT in each year of the rule change period.

Table 1.1: **Draft rule MPC-CPT pathway**

2022 DOLLARS	1 JULY 2025	1 JULY 2026	1 JULY 2027
MPC	$18,600/MWh	$20,700/MWh	$22,800/MWh
CPT	$1,674,000/MWh	$1,987,200/MWh	$2,325,600/MWh
CPT hours at MPC	7.5	8	8.5

1.1.2 The Commission's draft determination on the APC

The Commission's draft rule maintains the APC at $600/MWh for the rule change period 1 July 2025 to 30 June 2028.[11]

The Commission elected to make a more preferable rule to set the APC at $600/MWh, rather than the Panel's recommendation to set the APC at $500/MWh, as it was satisfied that its more preferable rule will, or is likely to, better contribute to the achievement of the National Electricity Objective (NEO).[12]

The Commission considered $600/MWh would better contribute to the achievement of the NEO as $500/MWh would not appropriately balance systemic financial risks with efficient market outcomes during an APP.

1.1.3 The Commission's draft determination retains the current Market Floor Price

Consistent with the Panel's final RSS review recommendation, the Commission's draft determination is to leave the market floor price (MFP) at its current level of -$1000/MWh.

The Commission notes the Panel's findings on the MFP and Telstra's submission that the MFP should be an inverse of the MPC. However, we consider that there are a range of options for

10 This does not change the real value of the MPC and CPT over the rule change period, as the MPC and CPT are annually indexed by inflation. The Panel's recommended MPC and CPT were indexed by ABS 2022 June quarter all components CPI of 6.1% to adjust the Panel's recommended MPC and CPT to 2022 dollars.

11 The current APC was set in the Amending the Administered Price Cap rule change (APC rule change). This rule change increased the APC from $300/MWh to $600/MWh until 30 July 2025.

12 Clause 91A of the NEL allows the AEMC to make a more preferred Rule (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.

a future MFP that may better support operational and investment outcomes over the transition.

The Commission considers a significant level of additional modelling, analysis, and consultation is required prior to amending the MFP. The Commission understands the Panel will be further considering the MFP in its next RSS review which is scheduled to commence in 2025. At this stage, we consider that keeping the current MFP at -$1,000/MWh is a no regrets approach while other work is underway.

1.2 The draft rule will support NEM reliability as the power system transitions

The draft rule is necessary to support reliability in a changing NEM. It does this by progressively re-aligning the MPC and CPT to the level needed for new entrant investment. The Commission's modelling has confirmed the Panel's finding of a misalignment between the current MPC and CPT and what is required to support reliability as the NEM transitions.

The NEM is going through a transition to lower emissions generation as ageing thermal generators retire and are replaced by variable renewable generation such as wind and solar power. To illustrate the scale of the change, around 7.5 GW of dispatchable capacity is expected to retire by 2030 with an additional 15GW retiring by 2040.[13] In its 2022 Integrated System Plan the Australian Energy Market Operator (AEMO) forecast that by 2030, 60% of coal-fired generation will exit the market, while grid-scale wind and solar will almost triple and storage capacity will increase by over seven-fold.[14]

The draft rule supports investments in a mix of new entrant technologies that are needed during the transition to higher penetrations of renewable energy. These technologies include storage, demand response and gas generation, providing flexible generation to address variability in renewable energy generation levels. These technologies will also assist in managing longer periods of low wind and solar generation.

These new entrant technologies support reliability by operating during supply scarcity conditions where there is a shortage of available capacity to meet consumer demand. Historically, supply scarcity events have occurred when thermal generators break down during high-demand periods, such as during hot summer afternoons. As the levels of variable renewable generation in the NEM increases, it is expected that supply scarcity periods may occur during periods of low wind and solar availability. High wholesale market prices during these infrequent times of scarcity provide a strong signal for infrequently used existing generation capacity, and new entrant generators, to be developed and available to meet consumer demand.

The draft rule proposes an MPC and CPT sufficient to support investment in new entrant open cycle gas turbine (OCGT) generators in combination with additional price-responsive

13 AEMC Reliability Panel, annual market performance report, p. 27

14 AEMO, 2022 integrated system plan, June 2022, p. 48.

demand. The Commission has confirmed the Panel's findings that these technologies are the lowest-cost options that can provide reliable outcomes in line with consumer expectations.

An MPC and CPT at this level also support new entrant battery investments. While not sufficient to allow batteries to earn revenues sufficient to fully cover their investment costs from the energy market alone, the draft rule shrinks the gap between market revenues available to new entrant batteries and their costs. Together with the jurisdictional schemes that are specifically targeting storage, the Commission expects that the higher MPC and CPT will substantially support new storage developments.

1.3 The draft rule minimises consumer costs while supporting reliability

The Commission understands the impacts that rising electricity prices are having on Australian households and businesses, and is strongly focused on providing a framework for reliable electricity system and affordable electricity prices.

The draft rule balances the need for additional generation to support reliability with minimising consumer costs. While the Commission's modelling indicates a short-term increase in consumer bill costs of approximately 2.7 per cent by 2028, relative to outcomes under the existing MPC-CPT, this short-term increase is necessary to support reliability and will also contribute to lower long-term electricity costs.

Lower long-term electricity prices occur due to the additional competition as more generators enter the market and compete against one another to supply electricity. The Commission's necessary increase in the MPC and CPT will drive this additional competition, reducing prices. Consumers will also benefit from avoiding the costs of an unreliable power system in the long-term due to more generation entering the market.

The draft rule minimises consumer cost impacts as a result of this necessary change because the increase in the MPC and CPT is:

- based on the lowest cost set of technologies, being OCGT and demand response, which are technically able to meet reliability needs
- made in accordance with NEM's reliability standard, which is the level of reliability that represents the best trade-off between reliability of supply and the cost of new generation for consumers.

The draft rule also minimises the impact of consumer cost increases through a progressive transition in the MPC and CPT over the three-year rule change period. This progressive increase spreads the impact on consumer bills over time rather than all being accrued immediately.

1.4 The draft rule works together with jurisdictional schemes to deliver reliability in a transitioning power system

The Commission considers that the best consumer outcomes can be achieved where the market settings work in combination with the support provided by jurisdictional reliability schemes.

Various state governments and the Commonwealth are developing schemes to support new investment in the NEM. Given the relevance of these schemes to the Commission's analysis, the Commission engaged Houston Kemp Economists to investigate these schemes and how they would interact with the existing market settings. This report is published on our website.[15]

Working together, the MPC and CPT in the draft rule and the jurisdictional schemes will deliver investment in the mix of different technologies needed to support reliability in a high variable renewable NEM. Generally, jurisdictional schemes have eligibility criteria that are focused on supporting zero-emission generation and storage projects. These schemes provide additional support for higher-cost storage assets by covering the gap between the expected market revenues earned by new batteries and battery costs. By supporting battery investment in this manner, jurisdictional schemes complement the draft rule MPC and CPT, which is high enough to support new OCGT and demand response.

The market price settings and jurisdictional schemes also work together to support new entrant investment in different ways. The MPC and CPT are designed to provide overall revenue sufficiency for the lowest-cost new entrant technologies. In contrast, jurisdictional schemes have been designed to help address any disincentives for investment given high levels of future market price uncertainty. Generally, the schemes do this by protecting new generation projects from the downside risk of low future wholesale electricity prices. Jurisdictional schemes therefore support generation investment that might otherwise be inappropriately delayed by wholesale market price uncertainty as a consequence of the energy transition.

Based on this advice and further analysis, the Commission does not consider that the presence of jurisdictional schemes removes the need for an MPC and CPT which is high enough to support necessary investment. The Commission considers the NEM should remain a nationally consistent market framework with market price signals that are sufficient to continue to drive the necessary investment as the NEM transitions.

1.5 The draft rule on the administered price cap supports market stability, efficiency, and reliability in emergency circumstances.

The draft rule on the APC supports reliability while balancing systemic financial risks with efficient market outcomes during emergency circumstances. The draft rule achieves these objectives as it:

- Removes financial risk associated with the very high MPC in extreme circumstances when the CPT is triggered, and market participants are likely to be experiencing significant financial stress.
- Supports reliability by being set at a level that provides sufficient financial incentives for thermal generation to continue generating and for ongoing battery participation.

15 For more information see https://www.aemc.gov.au/rule-changes/amendment-market-price-cap-cumulative-price-threshold-and-administered-price-cap.

- Supports efficient outcomes as it is set to allow the market to operate normally to the extent possible without reliance on AEMO intervention and compensation processes.

The Commission considers maintaining the APC at $600/MWh over the rule change period better advances the interests of consumers compared to the Panel's recommended $500/MWh APC. The APC is a nominal value that is not indexed by inflation. This means that the APC has its real value eroded by inflation over time. The Commission's analysis found a $500/MWh APC, as recommended by the Panel, would still lead to excessive risks of thermal generator withdrawal and AEMO intervention if there was an administered pricing period (APP) during the rule change period due to the effects of inflation.

The Commission considers its draft rule to be as low as possible while still being set at a level that is likely to be effective. A $600/MWh APC will be sufficient to cover all but a limited number of very high-cost generators under emergency circumstances in 2028. The Commission's analysis also indicated that a $600/MWh APC will allow for greater price volatility to more effectively signal storage charging and discharging required to support reliability during an APP.

The Commission did not consider a lower APC in combination with a systemic reliance on compensation and AEMO intervention during an APP would better advance the long-term interests of consumers as:

- a low APC would be more likely to lead to future market suspension events
- the costs of higher uncertain compensation payments would be passed through following the event and cannot be proactively managed by consumers through standard hedging practices.

The Commission understands the Panel is currently considering the form of the APC as part of its form of reliability standard review.[16] The Commission has therefore deferred any consideration of indexation or other changes to the APC.

1.6 Stakeholder feedback shaped our decision

The Commission's decision has been shaped by stakeholder submissions in response to the rule change consultation paper. It has also been informed by discussions with a wide range of industry stakeholders and consumer advocates. Further detail on the rule-making process is included in Appendix D.

Key stakeholder positions are summarised below and discussed in context throughout the remainder of this determination.

1.6.1 Stakeholders generally agreed with the need for more investment to support the transition

Stakeholders saw a need for further investment to support reliability as thermal generation retires and is replaced by high penetrations of intermittent renewable generation.[17]Several

16 https://www.aemc.gov.au/market-reviews-advice/review-form-reliability-standard-and-apc.

17 Submissions to the consultation paper: AGL, p. 1; AEC, p. 2; AEMO, p. 1; AFMA, p. 1; Australian Aluminum Council, p. 1; EnergyAustalia, p. 2; SA Department of Energy and Mining, p. 1; Hydro Tasmania, p. 1; Origin, p. 1; Shell, p. 4; Snowy, p. 1; Engie, p. 1.

stakeholders particularly noted the significance of the transition and that the nature of reliability is changing with a need for additional investment in firming resources to manage renewable intermittency.[18]

In contrast, the Public Interest Advocacy Centre (PIAC) considered there is insufficient evidence to suggest that the reliability standard is likely to be breached during the review period and therefore changes to the reliability settings are not needed.[19] PIAC also considered there was insufficient evidence that consumers would value any resulting increase in reliability sufficiently to support paying the increased costs involved.[20]

1.6.2 The majority of stakeholders supported the Panel's MPC and CPT recommendation

Of the 17 submissions that were made, 11 stakeholders supported the Panel's proposed MPC and CPT.[21] Four were opposed,[22]and two were non-committal or discussed other issues.[23]

While there was clear majority support, stakeholder views were split with market participants, and other stakeholders, supporting the rule change, while consumer advocates were generally opposed.

Stakeholders supported the Panel's recommendation on the basis that:

- It is efficient and would be the lowest cost approach to supporting reliability during the transition as it utilised market incentives, and targeted the reliability standard.[24]
- It would support the investment needed to minimise the need for intervention involving out-of-market mechanisms which are generally higher cost.[25]
- It would support contract market operation and investment given the business case for flexible assets necessary to support reliability during the transition depends heavily on signals from forward cap markets.[26]
- It would provide incentives for existing generation operation and maintenance such that they are available to support reliability during periods of supply scarcity.[27]
- The progressive adjustment supports certainty and market stability as market participants have transparency and certainty over the path of adjustment.[28]

18 Submissions to the consultation paper: Origin Energy, p. 1; Shell, p. 1; Snowy Hydro, p. 2.
19 Submissions to the consultation paper: PIAC, p. 5.
20 Ibid.
21 Submissions to the consultation paper: Engie, p. 1; AGL, p. 1; AEC, p. 2; AEMO, p. 1; AFMA, p. 1; SA Department of Energy and Mining, p. 1; Shell, p. 2; EnergyAustralia, p. 1; Hydro Tasmania, p. 1; Snowy Hydro, p. 1; Origin Energy, p. 1.
22 Submissions to the consultation paper: ECA, p. 1; Australian Aluminium Council, p. 1; PIAC, p. 1; EUAA, p. 1.
23 Submissions to the consultation paper: St Vincent DePaul, p. 1; Telstra, pp. 1-2.
24 Submissions to the consultation paper: EnergyAustralia, p, 1; Snowy Hydro, p. 2; Origin Energy, p. 2; Shell, p. 3; Hydro Tasmania, p. 2.
25 Submissions to the consultation paper: EnergyAustralia, p. 1; Snowy Hydro, p. 3; Shell p. 2.
26 Submissions to the consultation paper: AFMA, p. 1; Snowy Hydro, p. 1; EnergyAustralia, p. 5; Shell, p. 3; Hydro Tasmania, p. 3.
27 Submissions to the consultation paper: EnergyAustralia, p. 1; Origin Energy, p. 1; Snowy Hydro, p. 5.
28 Submissions to the consultation paper: Engie, p. 1; EnergyAustralia, p. 2; Hydro Tasmania, p. 3; AEMO p. 2.

- It balances the roles of the CPT and MPC and provides for enhanced market support for long-duration storage investments as the CPT is 8.5 hours of MPC rather than the historic ratio of 7.5 hours.[29]

1.6.3 Consumer advocates were significantly concerned about the cost impact of the Panel's recommendation

Consumer advocates identified a range of concerns around the consumer cost impact arising from the Panel's recommendations. These included:

- Industry competitiveness impacts. The Australian Aluminium Council was concerned with cost impacts as electricity typically accounts for around 30-40% of their costs, which they were unable to pass on to their customers as Aluminium is a globally traded commodity.[30]
- The cost of living pressures being experienced by consumers given high inflation and interest rate rises. Energy Consumers Australia questioned whether the proposed rule change was the lowest-cost option given the implementation of Commonwealth gas market price caps and jurisdictional and Commonwealth reliability support programs.[31]
- Whether an increase in the MPC and CPT would be effective at stimulating necessary investment or was the most effective option available to satisfy needs.[32]

However, in contrast to consumer advocate concerns, some stakeholders indicated that the costs of change may be lower than the cost of retaining the existing settings.[33]

1.6.4 There were polar views on whether the jurisdictional and commonwealth reliability schemes replaced the need for an increase in the MPC and CPT

The role of, and interactions with, jurisdictional support schemes was a central issue in stakeholder submissions to the consultation paper.

Some consumer bodies and advocates considered that increases to market settings like the MPC and CPT were unjustified as jurisdictional schemes could incentivise new investment in the market. [34] These groups argued that jurisdictional schemes have lowered new entry costs and therefore the revenue that is required from the MPC and CPT.[35]

In contrast, those supporting the Panel's recommendation didn't consider the jurisdictional schemes to either remove the need for higher market price settings or be inconsistent with higher settings.[36] These views included:

29 Submissions to the consultation paper: AEMO, p. 2; Hydro Tasmania, p. 3; Engie p. 2.
30 Submission to the consultation paper: Australian Aluminium Council, p. 2.
31 Submission to the consultation paper: ECA, pp. 1-4.
32 Submission to the consultation paper: PIAC, p. 9.
33 Submissions to the consultation paper: Snowy Hydro, p. 2; EnergyAustralia, p. 3; Hydro Tasmania, p. 4; AGL p. 1.
34 Submissions to the consultation paper: Australian Aluminium Council, p. 2; ECA, p. 3; PIAC, p. 8; EUAA, p. 1.
35 Submission to the consultation paper: PIAC, p. 10.
36 Submissions to the consultation paper: Origin Energy, p. 1; AEMO, p. 2; Hydro Tasmania, p. 2; AEMO, p. 2; Shell, p. 2; EnergyAustralia, p. 3; AGL p. 1.

- That there is still a need for higher market price settings even with jurisdictional schemes given the incentives created by the market price settings in operational time frames are not provided by jurisdictional investment schemes.[37]
- Jurisdictional schemes will result in higher costs for consumers given their eligibility requirements which exclude gas as the lowest cost marginal new entrant.[38]
- The market price settings and jurisdictional schemes are complementary and consumers will not pay twice for the same reliability should the market price settings be increased. [39]
- Jurisdictional schemes are less economically efficient than the market price settings and bring distortionary effects to markets.[40]

1.6.5 Stakeholders had mixed views on the level of the APC

There was no support for the Panel's recommended APC of $500/MWh. At a high level, stakeholders were generally divided into two groups:

- Those that supported the APC remaining at $600/MWh for the review period.[41]
- Those that did not support the APC changing from $300/MWh, or believed further analysis was necessary to make this conclusion.[42]

Some specific points raised by stakeholders supporting an APC of $600/MWh included:

- Regulatory predictability and stability are promoted by maintaining the APC at $600/MWh.[43]
- An APC of $600/MWh will more likely facilitate a dynamic market for storage participation during an APP.[44]
- An APC of $600/MWh will minimize the need to AEMO to direct participants during an APP.[45]
- The reasons for temporarily increasing the APC from $300/MWh to $600/MWh persist.[46]

Some stakeholders suggested that the APC should be indexed, either by inflation or another mechanism.[47]

Some specific points raised by stakeholders against increasing the APC to $600/MWh included:

37 Submission to the consultation paper: Origin Energy, p. 1.
38 Submission to the consultation paper: AGL, p. 1.
39 Submissions to the consultation paper: AGL, p. 1; EnergyAustralia, p. 4.
40 Submission to the consultation paper: EnergyAustralia, p. 4.
41 Consultation paper submissions: AEC, pp. 2-3; AEMO, pp. 2-3; EnergyAustralia, p. 5; Origin, p. 3; South Australia Department for Energy and Mining, p. 2; Shell, p. 3-4; Engie, p. 2; Hydro Tasmania, p. 2.
42 EUAA, pp. 3-7; ECA, pp. 3-4; PIAC, p. 11.
43 Consultation paper submissions: AEC, p. 2; AEMO, p. 3; EnergyAustralia, p. 5; Shell Energy, p. 4; Engie, p. 2; Hydro Tasmania, p. 2.
44 Consultation paper submissions: AEC, p. 2; Origin, p. 3.
45 Consultation paper submissions: Origin, p. 3; Shell Energy, p. 4.
46 Consultation paper submissions: South Australia Department for Energy and Mining, p. 2.
47 Consultation paper submissions: AFMA, p. 2; Shell Energy, pp. 3-4; Snowy Hydro, pp. 3-4; Engie p. 2.

- Outcomes from the APC compensation process administered by the AEMC do not suggest there was undue reliance on compensation during the events of June 2022.[48]
- The Commission needs to take into account the impact of the Federal government's gas price cap and Mandatory Gas Code.[49]
- Having a lower price cap and relying on the compensation process may result in better outcomes for consumers during APPs.[50]

48 Consultation paper submissions: EUAA, pp. 4-5.
49 Consultation paper submissions: EUAA, pp. 5-6, ECA, p. 3; PIAC, p. 7.
50 Consultation paper submissions: EUAA, p. 5; ECA, pp. 3-4.

2 THE DRAFT RULE WILL CONTRIBUTE TO THE ENERGY OBJECTIVES.

The Commission can only make a rule if it is satisfied it will or is likely to contribute to the achievement of the relevant energy objectives.[51]

For this rule change, the relevant energy objective is the national electricity objective (NEO):[52]

> 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:
>
> 1. price, quality, safety, reliability and security of supply of electricity; and
> 2. the reliability, safety and security of the national electricity system.

The Commission considers that existing market price settings are too low to encourage new investment to support reliability in the NEM as the power system transitions. The existing settings, therefore, do not promote the efficient operation of, and investment in, the power system. On this basis, the Commission has made a more preferable draft rule (draft rule) so that the market settings can better contribute to achieving the NEO.

Chapters 3 and 4 provide further information on the Commission's decisions and responses to stakeholder feedback.

2.1 Increasing the MPC, CPT, and APC advances the NEO when assessed against our criteria.

The Commission has considered the NEO and the issues raised in the rule change request and has assessed the draft rule against the five assessment criteria outlined below.

- **Delivering efficient levels of reliability:** The Commission has assessed whether this proposal will enable the reliable provision of energy to consumers at an efficient cost over the long term.
- **Maximizing outcomes for consumers**: The Commission has assessed whether this proposal appropriately balances the costs and benefits for consumers, particularly looking at the benefits of achieving reliability outcomes compared to the costs of increasing the reliability settings.
- **Enhancing market efficiency:** The Commission has considered:
  - Whether this proposal will promote efficiency, particularly across the investment and planning time frame. A key element of this is whether increasing the market price settings is likely to deliver the required investment.

51 NEL s 88(1).

52 NEL s 7. This is the NEO applying as of the date of this draft determination. In May 2023, energy ministers approved amendments to the national energy laws to include an emissions reduction component in the energy objectives. The legislative process is currently in train and is expected to conclude in late September 2023. If this law change takes effect before we publish the final determination for this rule change, we will adopt the new NEO for the final determination.

  - Whether this proposal will promote efficient outcomes through competition by providing incentives rather than directions and obligations.
- **Principles of good regulatory practice:** The Commission has considered:
  - Whether this proposal will promote predictability and stability in the regulatory framework for stakeholders.
  - Whether this proposal will interact constructively with other reforms underway.
  - Whether the proposal appropriately balances systemic final risk and market efficiency considerations.
- **Emission reduction:** The Commission has considered whether this proposal will efficiently enable the timely emissions reduction of the energy market.

These assessment criteria reflect the key potential impacts – costs and benefits – of the rule change request. Our reasons for choosing these criteria are set out in Chapter 3 of the consultation paper.

The Commission has carried out regulatory impact analysis to evaluate the impacts of the various policy options against the assessment criteria (other than the emissions criterion, which is discussed in sections 2.1.5 and 3.7). Appendix B outlines the methodology of the regulatory impact analysis.

The rest of this section explains why the draft rule best meets the current NEO and promotes the long-term interest of consumers assessed against the criteria, and will also contribute to achieving the proposed new NEO that includes emissions reduction considerations.

2.1.1 The Commission's draft rule will deliver efficient levels of reliability

The draft rule will deliver efficient long-term levels of reliability that correspond to consumer willingness to pay.

Increasing the MPC and CPT will deliver efficient levels of reliability

The Commission has confirmed the Panel's findings that the existing MPC and CPT were insufficient for the lowest-cost marginal new entrant to recover its costs. That is, the market will not provide sufficient revenue to support the new investment needed to achieve the reliability standard in the long-term.[53] In the absence of intervention, this will lead to higher levels of unserved energy and costs for consumers.

The MPC and CPT in the draft rule address this shortfall as they are set at a level that is sufficient to allow market prices to rise sufficiently to support the lowest cost new entrant investment consistent with achieving the reliability standard. The draft rule, which increases the MPC and CPT, is therefore consistent with delivering efficient long-term reliability outcomes in line with consumer willingness to pay.

53 The most efficient level of reliability, also known as the Reliability Standard, balances the costs of unserved energy against the investment and operating costs of power system resources, additional generation, and demand response. NEM's reliability standard is currently set at 0.002% of expected unserved energy in each NEM region in any financial year

Maintaining the APC will support efficient levels of reliability.

The APC in the draft rule to maintain the APC at $600/MWh will improve reliability outcomes during an APP. The maintained APC sets a price sufficient for all but a few peaking generators to recover their short-run marginal costs during an APP. This allows sufficient operational signals for generators to continue to participate in market dispatch independent of AEMO intervention.

The draft rule will also improve storage participation during APPs. This will better achieve efficient outcomes through competition by providing incentives for storage to continue to participate in the market during an APP.

An APC that does not allow the market to clear or provide sufficient signals for storage participation will ultimately increase uncertainty associated with intervention and the need for ex-post compensation. The Commission considers intervention, either through AEMO directions for reliability or market suspension, should remain a last resort. Reliance on compensation processes should also be limited to a small number of very high-cost generators in extreme circumstances. The ex-post determination of compensation is time-consuming and cumbersome as different aspects are determined by different market bodies and delays may make generator cash flows challenging.

2.1.2 The Commission's more preferable draft rule will maximise long-term benefits for consumers.

The draft rule appropriately balances costs and benefits for consumers by minimising the costs associated with achieving efficient levels of reliability.

Increasing the MPC and CPT will maximise long-term benefits for consumers.

The Commission's modelling results indicate a limited customer cost increase over the review period relative to outcomes under existing settings. While some limited short-term consumer cost increases are necessary and expected as the market price settings are re-aligned, over time, consumers will benefit as the long-term costs of electricity decrease relative to what they would have been in the rule change's absence.

The Commission engaged IES to extend the Panel's modelling work to identify long-term outcomes under the existing market price settings compared to those from the Panel's proposed rule change. This assessment reveals the following:

- Investment in new capacity under existing market price settings is lower relative to outcomes under the Panel's proposal.
- The lower level of investment leads to reliability outcomes worse than the reliability standard.
- Lower levels of investment to meet consumer demand results in higher average wholesale market prices despite the lower MPC.

These outcomes show long-term consumer benefits from the draft rule when considered on an energy-only market basis not considering jurisdictional scheme contributions to reliability.

The Commission is aware that the presence of jurisdictional schemes supports investment that should improve reliability relative to these outcomes.

The Commission engaged Houston Kemp Economists to provide detailed advice on the interaction between the market price settings and the jurisdictional schemes. The work from Houston Kemp indicated that the most beneficial outcomes for consumers and reliability occur under the Commission's draft rule to increase the MPC and CPT. Houston Kemp identified valuable roles for both higher market price settings and jurisdictional investment schemes. Its findings indicate that Commonwealth and jurisdictional schemes complement higher MPC and CPT and support reliability by addressing current market price uncertainties.

Maintaining the APC will maximise long-term benefits for consumers

The Commission's analysis indicated that for a retailer that has hedged approximately 70% or more of its load, an increase in the APC is unlikely to have a material effect on the cost of energy. Further to this, maintaining the APC is likely to reduce the amount of compensation costs passed to consumers that cannot be hedged.

The Commission considers that the reliability and efficiency benefits associated with maintaining the $600/MWh APC outweighs the impacts on consumer costs, which are expected to be small due to:

- the infrequency of APP events, and
- hedging arrangements that would minimise the impacts of high spot prices for consumers.

2.1.3 The Commission's draft rule will enhance market efficiency

The Commission's draft rule will enhance market efficiency across operational and investment time frames.

Increasing the MPC and CPT will enhance market efficiency

The draft rule will enhance investment efficiency by providing sufficient market revenue potential by allowing market prices to rise to a level sufficient to support the lowest cost reliability new entrant necessary to achieve the reliability standard. This will support market-driven investment and consumer costs consistent with their willingness to pay for reliability.[54]

The Commission's draft rule will enhance operational efficiency by increasing competition for dispatch and increase financial incentives:

- for generators, storage, and demand response to make themselves available during periods of supply scarcity thereby supporting reliability and maximising competition
- to physically maintain and operate existing plants thereby improving their availability when needed.

54 The reliability standard accounts for consumer willingness to pay as it uses the AER's Value of Customer Reliability (VCR) to determine the efficient level of reliability in the NEM. Further information on the VCR can be found at: https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/values-of-customer-reliability

Market price settings that support OCGT, demand response, and higher cost storage technologies (with jurisdictional scheme support) will also enhance efficiency by increasing the scope, and financial incentive for, market participants to develop innovative business models and contracting structures required to support reliability in a future high variable renewable NEM. Earlier deployment of storage and higher CER uptake will enhance the opportunity to trial new business models thereby accelerating the integration of these technologies into the market.

The higher APC will enhance market efficiency

The Commission's draft rule will improve market efficiency during an APP. The draft rule will give the market more headroom to cover high fuel costs and to self-ration its limited energy supply. This will enable thermal generation to operate in the market when needed most. It will also provide better incentives for hydro and battery storage plant to participate in the market through higher intra-day price spreads.

2.1.4 The Commission's draft rule applies the principles of good regulatory practice

The Commission's draft rule change supports good regulatory practice by:

- promoting stability and predictability in the regulatory framework
- interacting constructively with other reforms underway
- balancing systemic financial risk and efficiency considerations.

Increasing the MPC and CPT supports good regulatory practice

The draft rule's progressive increase in the MPC and CPT over the review period promotes stability and predictability. This progressive transition provides stakeholders with the maximum scope to plan and adjust to higher settings.

The draft rule works together with the jurisdictional reliability investment schemes to deliver the mix of technologies needed for the NEM in each region of the NEM.

It balances efficiency and systemic risk considerations by selecting:

- an MPC which is set at a level to allow the market to efficiently clear the vast majority of the time
- a CPT that limits total financial risk in extreme conditions to a level sufficient to minimise the risk of a cascading financial failure.[55]

Increasing the APC applies the principles of good regulatory practice

The draft rule's APC retains the level implemented in the *Amending the Administered Price Cap rule change* after the June 2022 APP and market suspension event. This level has been integrated into market participant hedging practices and provides stability and certainty for the market.

55 The Commission notes that the increase in financial risk under the draft rule will primarily be borne by retailers.

2.1.5 Increasing the MPC and CPT will contribute to decarbonisation in the NEM

The Commission considers the draft rule would contribute to achieving the proposed new NEO that includes emissions reduction considerations, as the draft rule should promote longer-term decarbonisation in the NEM. The higher MPC and CPT will encourage investment in new resources that support reliability by 'firming' renewable generation throughout the NEM's transition. This will support decarbonisation by supporting reliability for higher penetrations of zero-emission renewable generation than would otherwise be the case. The draft rule also supports decarbonisation in the NEM as it, together with jurisdictional schemes, supports incentives for long-duration storage investment with higher CPT. This change will support investments to assist in managing longer periods of low wind and solar generation.

In the short term, the draft rule may result in some additional emissions given the higher MPC and CPT will support new OCGT to be built that may not otherwise have been developed. The direct emissions associated with this investment are expected to be very low given these generators generally only operate during supply scarcity conditions when market prices are very high. As an example, peaking OCGT in the NEM generally operates less than five per cent of the time. Any incremental emissions are therefore likely to be very small in the NEM-wide context.

The higher MPC and CPT may provide some additional incentive to delay thermal generator retirement. However, the Commission notes that retirement decisions are multi-faceted, any impact on the operational life of the thermal fleet is uncertain and may be mitigated by their contract positions, end-of-life reliability and other structural concerns.

2.2 Application in the Northern Territory

In developing the draft rule, the Commission has considered the application to the Northern Territory according to the following questions:

- Should the NEO test include the Northern Territory electricity systems?
- Should the rule be different in the Northern Territory?

Parts of the NER, as amended from time to time, apply in the Northern Territory, subject to modifications set out in regulations made under the Northern Territory legislation adopting the NEL.[56]

The proposed draft rule relates to parts of the NER that do not apply in the Northern Territory, as it amends provisions in Chapter 3 of the NER which have not been adopted by the Northern Territory to date.[57]

See Appendix D for more detail on the legal requirements for a decision.

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56 *National Electricity (Northern Territory) (National Uniform Legislation) Act 2015* (**NT Act**). The regulations under the NT Act are the *National Electricity (Northern Territory) (National Uniform Legislation) (Modification) Regulations 2016*.

57 Under the NT Act and its regulations, only certain parts of the NER have been adopted in the Northern Territory. The version of the NER that applies in the Northern Territory is available on the AEMC website at: https://energy-rules.aemc.gov.au/ntner.

3 WE HAVE ASSESSED THE PANEL'S RECOMMENDED MPC AND CPT

BOX 1: THE COMMISSION'S DRAFT DETERMINATION IS FOR A PROGRESSIVE TRANSITION TO REACH AN MPC OF $22,800/MWH AND A CPT OF $2,325,600/MWH BY 1 JULY 2027.

The Commission assessed whether the long-term interests of consumers are best advanced by leaving the MPC and CPT at existing levels, adopting the Panel's recommendation, or making a more preferable MPC or CPT that is higher or lower than the Panel's recommendation.

The Commission considers the draft rule:

- is sufficient to support the lowest cost new entrant investment
- appropriately balances cost, market efficiency, and financial risk while also enhancing opportunities for long-duration storage
- is robust to future market uncertainty
- minimises short-term consumer cost impacts and provides long-term consumer cost benefits
- enhances contract market support for investment
- supports decarbonisation.

The NEM provides incentives for investment in new power system resources through scarcity pricing. Scarcity pricing occurs when there is a scarcity of available generators in the NEM to meet demand and expensive generators are needed which set the price at high levels that reflect their operating and investment costs. The MPC and CPT together define the limits of scarcity pricing, and the financial incentives available from the market to support investment.[58]

The MPC and CPT share a common purpose. Together the MPC and CPT are set at levels that are sufficiently high to allow market prices to rise to the level necessary to support the investment required to achieve reliable outcomes consistent with the reliability standard, but not too high to create systemic financial risks that may compromise the stability of the market.

58 The MPC places an upper limit on wholesale market prices that can be reached in any trading interval. The value of the MPC is specified in the NER and annually indexed with inflation. For the current financial year it is set at $16,600/MWh. The CPT is a threshold on the cumulative price for energy and frequency control ancillary services (FCAS) over a period of seven days. For the current financial year is it set at $1,494,000. This value represents the cumulative financial impact of 7.5 consecutive hours of market prices at the existing MPC.

3.1 The Commission utilised, updated, and extended the Panel's modelling and analysis

The Panel conducted extensive modelling to inform its 2022 RSS review recommendations. The Panel's work included detailed time-sequential Monte Carlo price-dispatch modelling of market outcomes over the review period and optimisation to identify candidate efficient MPC-CPT combinations. The Commission has leveraged these models and data sets in making our draft rule.

The Commission's rule change process has focused on updating, validating, and extending the Panel's analysis where practicable:

- The Commission utilised the Panel's price-dispatch modelling of supply and demand dynamics over the rule change period as the Commission considered this modelling fit for purpose. It was impractical for the Commission to re-do this large-scale, time- and resource-intensive modelling exercise given the time and resources available for the rule change.
- The Commission updated and extended IES's market price setting optimisation and cost assessment model that was developed for the Panel's RSS review. The optimisation model processes market price and unserved energy outcomes and solves for feasible MPC and CPT combinations consistent with achieving the reliability standard for candidate new entrant technologies.

IES's co-optimisation and cost assessment model was updated using the most current information available as of March 2023. Updates reflect the latest information available from AEMO's draft 2023 Inputs Assumptions and Scenarios report (ISAR), which specifies the inputs, assumptions and scenarios that AEMO proposes to use in its 2023-24 forecasting and planning activities, including the 2024 ISP.[59]

These updates included:

- increasing the new-entrant pre-tax real cost of capital from 5.5% to 7%;
- new entrant technology capital cost forecasts for the rule change period
- operating cost information including fuel costs.

The Commission extended the Panel's analysis to:

- perform additional sensitivity analysis to assess the robustness of the Panel's recommended MPC-CPT against key sources of uncertainty
- identify long-term consumer costs and benefits from the draft rule relative to outcomes if the existing price settings remain unchanged.
- more accurately assess short-term consumer cost impacts expected by 2028. IES's consumer cost model has been expanded to cover VIC, SA, Qld and Tasmania with price distributions benchmarked against historical outcomes
- assess the draft rule's impact on contract market outcomes.

59 Further information on the ISAR can be found at: https://aemo.com.au/en/consultations/current-and-closed-consultations/2023-inputs-assumptions-and-scenarios-consultation.

Further details of IES's assessment and modelling for the review can be found in its modelling report, published alongside this draft determination. [60]

3.2 The Commission confirmed the existing MPC and CPT are insufficient to support the lowest cost new entrant investment

The Commission confirmed the Panel's RSS review findings that:

- the existing MPC and CPT are too low for market prices to support the lowest-cost marginal new entrant
- OCGTs in combination with demand-response remain the lowest cost option to achieve the reliability standard over the rule change period.

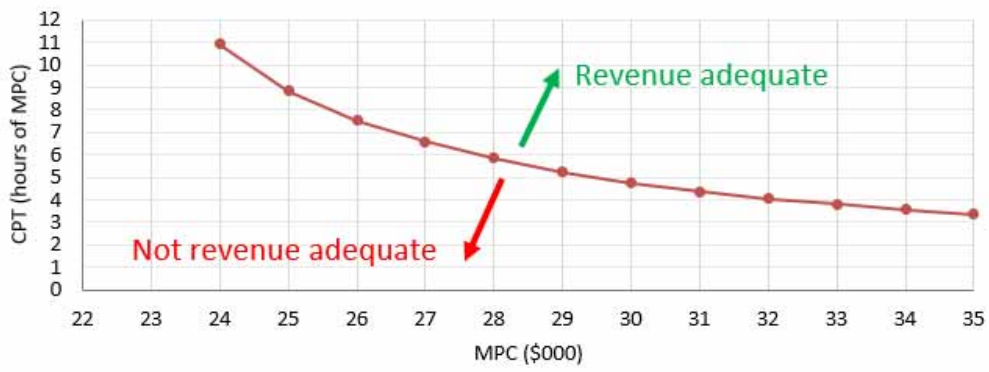
Further information on these assessments can be found in IES's modelling report.

BOX 2: INTRODUCING EFFICIENT MPC-CPT FRONTIERS

IES's optimisation model identifies the efficient MPC-CPT frontier for each candidate new entrant technology. This efficient frontier describes the set of MPC-CPT combinations that minimise total market costs while also providing sufficient market revenue to cover new entrant capital and operating costs.

Figure 3.1 illustrates this concept by showing an efficient MPC-CPT frontier for a hypothetical marginal new entrant. MPC-CPT combinations above the frontier (indicated by the green arrow) provide market revenue that exceeds the amount required for the new entrant technology and therefore market costs that exceed the efficient level. Conversely, settings that lie below this frontier (red arrow) do not provide sufficient market revenue potential to support investment and involve total market costs below the efficient level. The efficient set of MPC-CPT combinations for Commission consideration therefore lie on the frontier. Further information on assessing efficient MPC-CPT frontiers can be found in IES modelling report.

Figure 3.1: Hypothetical efficient MPC-CPT frontier



Source: AEMC-IES

60 IES's draft modelling report can be found at: https://www.aemc.gov.au/rule-changes/amendment-market-price-cap-cumulative-price-threshold-and-administered-price-cap

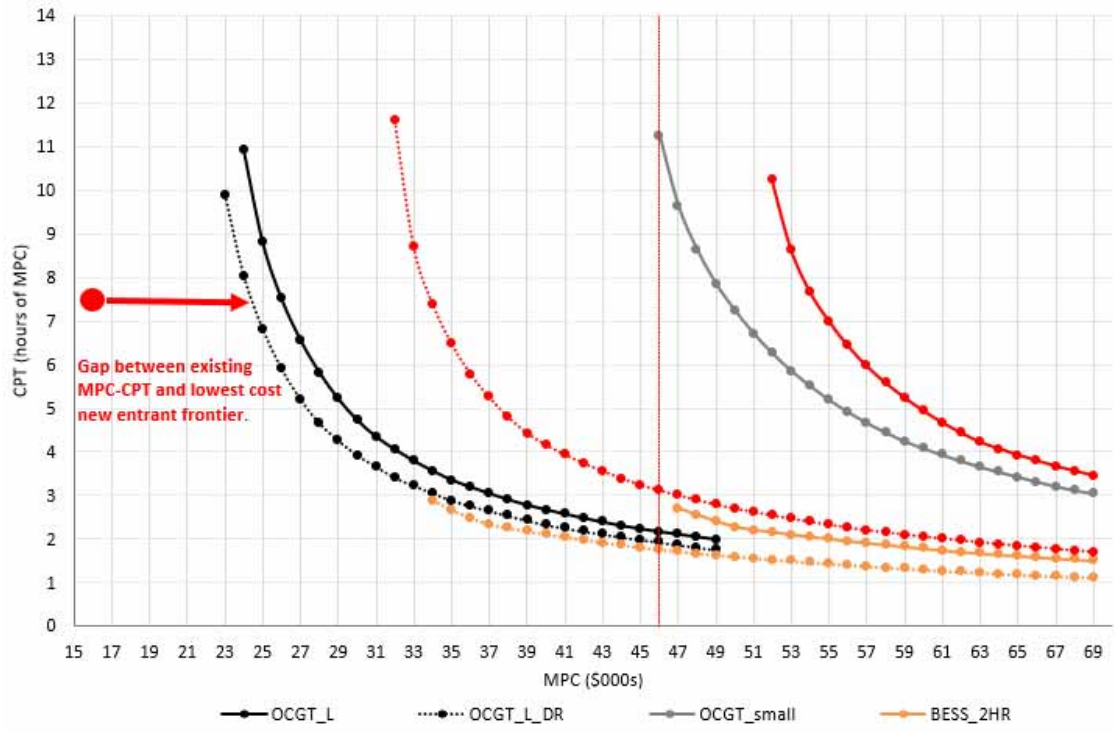
3.2.1 Confirming the gap between the existing MPC-CPT and the level required to support the lowest cost new entrant investment

The Commission has confirmed the gap between existing settings and those required for market prices to support the lowest cost marginal new entrant by considering the relative positions of the updated MPC-CPT frontier for each candidate new entrant technology. The gap between the existing MPC-CPT and the lowest cost new entrant efficient frontier is indicated in Figure 3.2 below.

This confirms the Panel's RSS review finding that retaining the existing MPC and CPT over the review period from 1 July 2025 to 30 June 2028 would:

- provide insufficient market revenue potential for any marginal new entrant technology, and therefore
- not support the investment needed to achieve the reliability standard.

Figure 3.2: Updated efficient frontiers for candidate new entrant technologies



Source: IES-AEMC

To minimise cost impacts, over the rule change period, the Panel recommended an MPC-CPT corresponding to the lowest-cost new entrant technology in NSW.[61] The Panel identified a large OCGT in combination with demand response as the lowest cost option for delivering

61 NSW was selected as it was the jurisdiction with the most pressing reliability concerns over the review period.

reliability consistent with the reliability standard. The Panel's approach to accounting for demand response in the new entrant portfolio is summarised in Box 3.

Based on the updated assumptions the Commission has confirmed this recommendation.[62] Figure 3.2 shows that the MPC-CPT required by two and four-hour batteries remains significantly above the OCGT-demand response frontier.

The Commission observes the cost difference between OCGT and battery technologies has increased since the Panel's 2021 review.[63] While the technology cost modelling used in AEMO's 2023 ISAR continues to show significant battery cost decreases in the longer term, these declines are expected to occur post-2028 and outside the rule change period.[64]

The Commission also tested the potential for FCAS revenues to reduce the MPC-CPT required for battery new entry. The Panel's RSS review incorporated FY2021 FCAS prices. The Commission modelling incorporated more recent experience and included the significant lift in FCAS prices seen in FY2022.[65] The outcome of this assessment is shown in the BESS_2HR_F50 and BESS_4HR_F50 frontiers (dashed) in Figure 3.2 which remain well above the OCGT + demand response frontier. While this assumption improves the revenue situation for this technology, it supports the Commission's view that FCAS revenue potential will not lead to two or four-hour batteries becoming the lowest-cost new entrant technologies over the review period.

BOX 3: APPROACH TO INCLUDING NEW ENTRANT DEMAND RESPONSE (DR).

The Panel's final recommendation reflects the costs of new entrant OCGT with additional price-responsive demand response.

The Panel has utilised AEMO's step change ISP demand response participation curves to estimate the MW volume of demand response that would enter in response to an increase in the MPC for this purpose. This approach simulates the effect of extending the step change demand response participation curve on the required MPC.

IES assessed the effect on the required MPC by modelling this new entrant demand response as independent zero fixed cost 'generators' that enter for progressively higher MPCs. Further information on the approach to modelling demand response is provided in the RSS review final report and the IES RSS review modelling report.

62 Costs associated with NSW were assessed as Victorian new entry costs are significantly higher.

63 The Commission understands this reflects changes in battery technology costs due to increases in the cost of constituent minerals, in particular lithium.

64 For further information see: https://www.csiro.au/en/research/technology-space/energy/energy-data-modelling/gencost.

65 The energy and FCAS revenue categories have also been de-rated by 50% to account for availability with 2022 FCAS prices used to assess revenue.

3.3 The draft rule balances cost, market efficiency, and financial risk and enhances opportunities for long-duration storage

The Commission's draft rule accepts the Panel's recommendation to increase the CPT from the equivalent of 7.5 hours at the MPC to 8.5 hours.

All MPC-CPT combinations on the efficient frontier provide for market prices consistent with revenue adequacy for a new entrant technology. However, the particular combination, and location on the frontier, affects the balance of consumer cost impacts, market risks, and investment incentives.

The Commission understands the Panel recommended increasing the CPT relative to the MPC, as it wished to minimise the MPC, given consumer cost impacts, subject to maintaining a CPT that limited total financial risk to acceptable levels, while still supporting new entrant investment. The Panel was also motivated to enhance market incentives for investment in longer-duration storage, given the potential for emerging reliability risks from extended low VRE generation events ('dark doldrums').

The Commission notes the following trade-offs in considering the Panel's recommendation to shift the MPC-CPT from its historic relationship:

- **Minimising the MPC by increasing the CPT moves higher on the efficient frontier** – this shift increases incentives for investments that can provide a prolonged response during extended periods of supply scarcity. Minimising the MPC with a higher CPT however, reduces market efficiency by limiting the market's ability to efficiently clear during extreme supply scarcity events and increases the total financial risk borne by the market, primarily retailers, during emergency conditions.[66] Investment risk also increases as revenues from less frequent supply scarcity events are relied upon to provide revenue adequacy.
- **Minimising the CPT by increasing the MPC moves lower on the efficient frontier** – this shift reduces the total financial risk faced by the market during emergency conditions and improves dispatch efficiency by enhancing the market's ability to efficiently clear during supply scarcity conditions. Uncertainty, however, increases given the higher probability of the CPT being triggered and the increasing frequency of resulting APP events. This reduces incentives for investments that can provide a prolonged response during extended periods of supply scarcity.

The Commission considers the increase in the MPC under the draft rule will still provide scope for the market to efficiently clear in the overwhelming majority of cases. Further, the proposed increase in the MPC-CPT relationship, to a CPT which is equivalent to 8.5 hours at MPC, will not result in unacceptable levels of investment or systemic financial risk.

66 The market does not efficiently clear when the MPC prevents the market price from fully reflecting the intersection of supply and demand based on the cost of the new entrant and the value customers place on reliability. A market that clears efficiently should always clear below the market price cap.

The Commission notes the Panel's extensive stakeholder engagement on the issue of systemic risk management in forming its view. The Commission also notes the Panel's approach to managing the potential for systemic risk from a higher MPC-CPT by:[67]

- retaining the historical approach to minimising systemic risk which is to limit the MPC-CPT to the level required to provide for the lowest cost marginal new entrant option only.
- limiting the increase in the CPT in this review period. The Panel has balanced its intentions to encourage longer storage duration with the potential increase in financial risk faced by market participants.[68] The Panel considers its final recommendation for a CPT that corresponds to 8.5 hours of market prices at the recommended MPC balances these considerations.
- The progressive annual increase in the MPC-CPT over the review period will maximise the opportunity for market participants, in particular retailers and other customers, to adjust to higher levels of financial risk thereby minimising any potential financial impact from a single large increase.

3.4 The draft rule is robust to future market uncertainty

The Commission has confirmed that the Panel's recommended MPC-CPT is robust to reasonable market uncertainty over the rule change period.

The Commission and IES conducted a sensitivity analysis to consider the impact of key parameter uncertainty on the lowest cost OCGT and demand response MPC-CPT frontier in light of market and economic uncertainty over the rule change period. This sensitivity analysis considered outcomes given uncertainty in the following key parameters:

- **Non-reliability period market revenue -** The revenue earned by a new entrant outside reliability periods reduces the MPC-CPT that is required for the new entrant to recover its costs during reliability periods.[69] Non-reliability period revenue is highly variable depending on market conditions. Non-reliability period revenue uncertainty has been assessed from market price outcomes consistent with the 80th and 20th percentile of annual outcomes over the last 5 years.
- **New entrant cost of capital** - New entrant costs are CAPEX dominated given low operational capacity factors. This makes the MPC-CPT very sensitive to changes in the cost of capital. The pre-tax real cost of capital has been assessed for 5.5% (consistent with the 2021 ISP and RSS review) which may reflect subdued future economic conditions and a return to low-interest rate conditions over the rule change period. A 7% cost of capital (consistent with AEMO's upcoming ISP) may reflect more robust future economic outcomes.[70]

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67 The primary systemic risk mechanism identified by the Panel was associated with a cascading financial failure arising the RoLR scheme in response to a large retailer failure. The Panel considered Commission and government moves to address these RoLR scheme risks provided scope for an increase in total financial risk exposure from extreme events without increasing systemic financial risk.

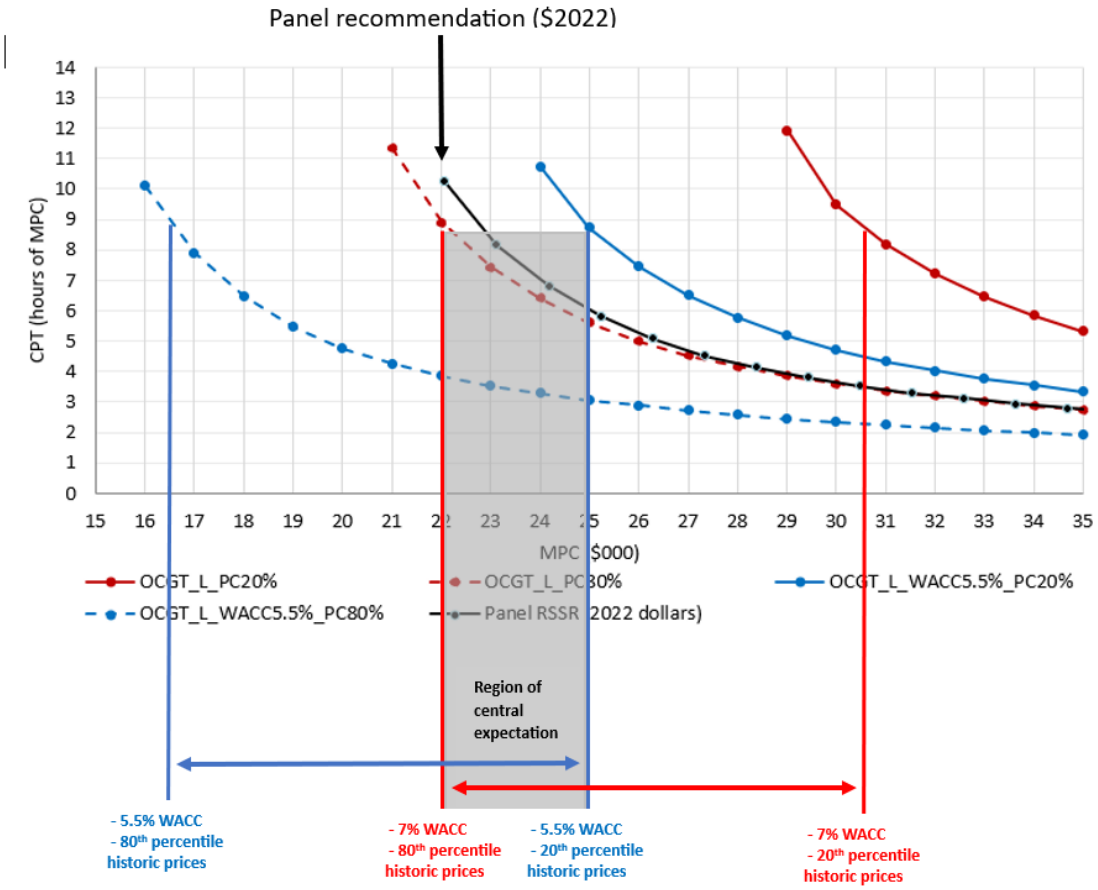
68 The Commission notes that an increase in financial risk can be effectively managed through financial hedging.

69 reliability periods are taken to be the 7-day period around each instance of unserved energy in IES's time series price-dispatch modelling.

70 Cost of capital are pre-tax real figures.

The efficient MPC-CPT frontiers from the four sensitivity cases are shown in Figure 3.3. The cross-over region between these cases indicates a 'region of central expectation' within which a candidate MPC-CPT may be considered reasonably robust to the assessed uncertainties. This region is indicated by the grey zone in Figure 3.3 along with the Panel's recommendation, indexed to 2022 dollars.

Figure 3.3: Panel recommendation tested against key uncertainties



Source: IES - AEMC

The Commission notes the Panel's recommendation is within the candidate MPC-CPT region but biased towards the low bound. The Commission has considered the benefits and drawbacks of an MPC-CPT close to the low bound.

- Biasing the draft rule at the lower end of the candidate range provides new entrant revenue sufficiency and is robust to uncertainty. It also minimises the magnitude of cost impacts during the review period, recognises the value of demand response, and minimises the increase in financial risk to retailers relative to an MPC-CPT which is biased at the upper end of the range.

- However, a draft rule that is biased at the lower end of the candidate range increases the gap between market revenue and the level required to support higher-cost technologies like storage. Reliance on jurisdictional scheme support for these technologies is, therefore, higher under the draft rule than would be the case if the draft rule was biased to the high end of the candidate range.

The draft rule is consistent with new entrant non-reliability revenues at the 80th percentile of historical outcomes and a 7% pre-tax real cost of capital. The Commission considers this reasonable as:

- Revenue over the rule change period will reflect generally tighter market conditions, given expected reliability outcomes, which will support higher market prices and new entrant revenues relative to historical outcomes.
- A 7% pre-tax real cost of capital reasonably balances the range in future economic conditions and reflects AEMO's 2023 ISP cost of capital.

On balance, the Commission considers a bias towards the low end of the candidate range acceptable. This is particularly due to the market confidence and certainty benefits from accepting the Panel's recommended MPC-CPT given the Panel's extensive assessment and consultation undertaken in the RSS review.

3.5 The draft rule minimises short-term consumer cost impacts and provides long-term consumer cost benefits

The Commission has assessed the consumer cost impact and benefits of the draft rule, in light of current energy cost increases. Our assessment shows that the draft rule minimises consumer cost impacts over the review period and provides long-term consumer benefits relative to maintaining existing arrangements. Importantly, our assessment shows that over the long-term, consumers would likely face higher costs if we kept the existing lower MPC and CPT. This is a result of likely lower levels of investment and therefore higher USE outcomes.

This section presents results from the following two assessments:

- An assessment of consumer cost impacts over the review period to 2028 which are based on forecasts of actual reliability outcomes during this period. This assessment updates, refines, and extends the consumer cost assessment approach used by the Panel.
- An assessment of longer-term cost benefits associated with the rule change relative to maintaining existing MPC-CPT. This is a long-term equilibrium assessment that uses information from the Panel's RSS review reliability standard modelling to estimate equilibrium levels of investment, unserved energy, and consumer bill costs under the existing MPC-CPT relative to the draft rule MPC-CPT.

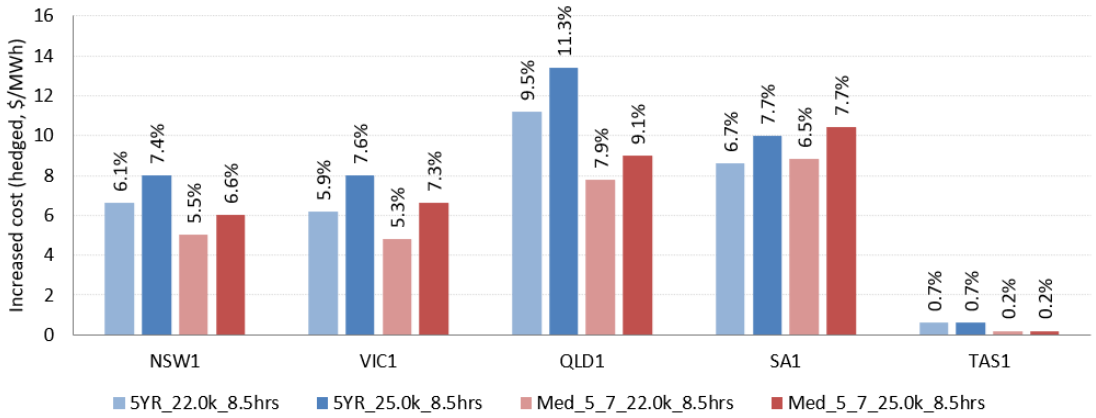
3.5.1 The draft rule will cause a limited increase in consumer bill costs over the review period

The Commission used IES's wholesale cost model to evaluate the electricity wholesale and hedging cost increases that arise due to the draft rule.[71] This section summarises these findings, additional information is available in IES's modelling report. The Commission considers that the increase in wholesale and hedging costs is likely to be only a minor contributor to electricity price changes over the review period compared to potential changes in international fuel prices, network charges and other costs.

The Commission has updated and extended IES's modelling approach to:

- to cover each region of the NEM
- use a more representative retailer demand profile for settlement outcomes
- re-profile the market price traces to align volatility and price levels with market expectations over the rule change period.[72]

Figure 3.4: Increase in wholesale hedging and energy settlement costs - 2028



Source: IES - AEMC

To provide a comprehensive understanding of possible price outcomes price impact outcomes were:

- Calibrated and scaled to reflect average 2018-2022 price volatility (labelled 5YR) and median 5 year from the last 7 (labelled 'med_5_7'). The median 5 year from last 7 removes the outlier effect of 2022, which is present in the 5-year average, to provide a more representative outcome.
- Assessed for the MPC bounds of the candidate range, being 22k and 25k with a CPT of 8.5 hours at MPC as identified in the previous section.

71 IES's consumer cost assessment model considers increases in energy settlement and hedging costs of a prudent retailer which selects the hedging level that minimises the variance in cost outcomes.

72 The base case RSS review price traces, reflecting the most likely reliability outcome over the review period, were re-profiled to align with a representative price duration curve shape and market price level expectations. The re-profiling of prices aims to reshape the price duration curve (PDC) and ensure that both energy and cap settlement prices align with representative levels. The re-profiling process also addressed low-modelled price volatility, in RSS review modelling, in regions outside Vic and NSW over the review period.

A complete description of this assessment, including the re-profiling process, is provided in IES's modelling report.

The results from this process show an average increase in consumer costs across all mainland NEM regions in 2028 would be a combination of an uplift of $7.3/MWh in energy costs with $2.6/MWh related to contract premiums for the higher MPC and CPT settings. An average uplift of $7.3/MWh in wholesale electricity costs in 2028 corresponds to a 2.7% increase in average consumer bills after accounting for network and other bill cost components.[73] This outcome is slightly lower than, but broadly consistent with the Panel's assessment RSS review assessment for NSW.

3.5.2 The draft rule will minimise consumer costs and unserved energy over the long-term

The Commission has identified that the draft rule will likely deliver benefits consistent with the long-term interests of consumers relative to retaining existing MPC-CPT.[74]

IES modelled the long-term impact of the higher market price settings on investment, reliability, and market prices to inform the Commission's understanding of the benefits of the rule change against the status quo.[75]

On an energy-only basis, IES identified:

- existing market price settings result in less new entrant OCGT investment relative to the draft rule
- reduced available capacity as a result of lower new entrant investment leads to more unserved energy, exceeding the reliability standard
- the tighter market results in higher consumer costs despite the lower MPC and CPT

Over the long-term, under existing arrangements, the average level of unserved energy is around 0.004% — double the current 0.002% reliability standard. The higher level of unserved energy adds $4.5/MWh (0.45c/kWh) to the overall cost to the residential customer. The overall cost increase associated with existing arrangements, including the cost of additional unserved energy, when compared to the draft rule MPC-CPT, is $9/MWh or 7.5% higher. These outcomes are shown in Figure 3.5 below against outcomes under the draft rule.[76]

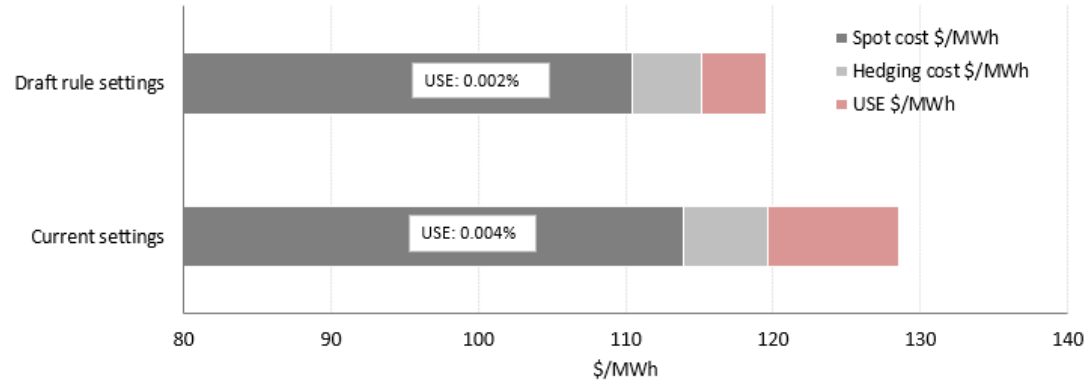
73 The Commission based this assessment on the base year 2021 AEMC retail price trends report bill cost components. AEMC, 2021 retail price trends - final report, p. 4.

74 The long term in this instance relates to investment time horizon beyond 2028.

75 Further information on IES's modelling process is available in IES's modelling report.

76 This assessment is limited to the wholesale energy cost component of the electricity charge to consumers as this is the element that is influenced by the rule change.

Figure 3.5: Long term energy only benefits assessment



Source: IES - AEMC

3.5.3 The most beneficial interaction with jurisdictional reliability schemes occurs given higher market price settings

The Commission notes stakeholders were particularly interested in the role of jurisdictional schemes and their interaction with the market price settings. Consumer advocates considered that the market price settings should be left at current levels with jurisdictional schemes supporting additional investment.

The Commission acknowledges the potential for investments supported by jurisdictional schemes to address some or all of the reliability shortfall identified in the assessment which retained the existing market price settings. However, the advice to the Commission from Houston Kemp indicates that the long-term costs of addressing reliability through jurisdictional reliability schemes are likely to be higher than via higher market price settings.

While jurisdictional scheme-supported investments will likely reduce market costs and unserved energy, relative to the case above, consumers will bear additional, higher costs, via the cost recovery mechanism used by the relevant jurisdiction.[77] This is due to the jurisdictional schemes focusing on supporting investment in higher-cost technologies, such as energy storage while the market price settings are set consistent with lowest-cost technologies.

Houston Kemp further considered that increasing the market price settings relative to leaving them at current levels will:

- promote the achievement of the reliability standard at lower total system costs than the counterfactual scenario, leading to better outcomes for consumers
- will maximise the likelihood that the market-based investment signals will be effective for delivering investment to meet the reliability standard

77 NSW LTESA costs are recovered via distribution network charges and Commonwealth CIS costs are recovered via general taxation.

- reduce the risk of overbuilding reliability-related capacity as there is less reliance on administrative decision-making to deliver investment
- will prevent consumers from paying twice by reducing the strike price of the successful bids for revenue support awarded through competitive jurisdictional scheme auctions relative to the case under existing market price settings.

Houston Kemp's findings further support the Commission's view that the draft rule will deliver long-term consumer benefits, consistent with advancing the NEO, relative to retaining the existing MPC-CPT.

3.6 The draft rule enhances contract market support for investment

The Commission has identified that the draft rule will lead to contract market outcomes that support new entrant investment decisions.

Wholesale electricity market hedging contracts, including swaps and caps, provide a mechanism for retailers and generators to manage their exposure to spot prices. This provides revenue certainty for generators and assists new investment financeability by reducing risks to the debt and equity holders. The trading of cap contracts is particularly important for investments in new entrant generators designed to operate relatively infrequently during supply scarcity events.

Cap contract prices provide some insights into the level of market support for investments in new reliability plant. Cap contract prices reflect expectations on the probability and frequency of MPC events and the financial risks that these events place on retailers. Cap prices below the level required to support new entrant investment either indicate an expectation of limited high market price events or an MPC set too low.

The Commission particularly notes Snowy Hydro's submission to the consultation paper which observed:

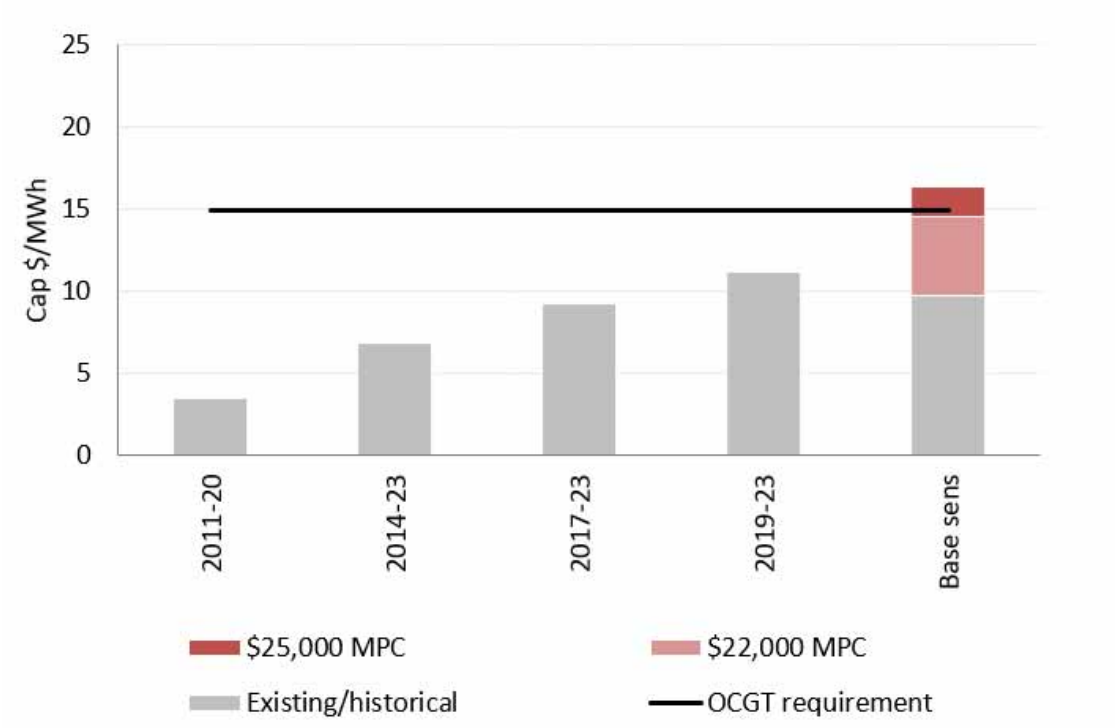
Pricing outcomes for capacity hedging instruments support the need to increase the levels of MPC and CPT. In an efficient market, the price of a $500 Cap, which serves as a proxy for capacity cover in the NEM, should converge at or near the new entrant price (NEP), which represents the cost of self-insurance by Market Customers (ie. the cost building dispatchable capacity). However, until recently in most NEM jurisdictions, the traded price of Cap contracts was well below the NEP. Cap contract premiums are still below NEP in Victoria.[78]

The adequacy of the existing MPC can be assessed against the level required for market prices to support a new entrant OCGT in NSW, as the region with the greatest reliability risk during the rule change period. The adequacy of the draft rule's efficacy can be assessed in the same way.

IES modelled the expected change in cap settlement prices under both existing arrangements and under higher market price settings. Figure 3.6 shows IES's assessment along with historic average cap outcomes over time horizons from 10 years (2011-20) to 5 years (2018-2022) against the level required for OCGT new entry.

78 Snowy Hydro, submission to the consultation paper, p. 1.

Figure 3.6: NSW cap settlement vs OCGT new entrant revenue requirement



Source: IES - AEMC

The Commission observed that:

1. Historic cap settlement prices are well below the level required to support new entrant investment OCGT on the timeframes considered. This likely reflects historic reliability outcomes in NSW which have been within the reliability standard and the level of the MPC.
2. Outcomes under the draft rule indicate a $22,800/MWh MPC is sufficient for new entrant OCGT in NSW.

In addition, the Commission observes the historical trend of low cap values aligns with the lack of historic market-supported peaking capacity investment in the NEM. However, we also note that reliability may have been less of an issue over this timeframe. The current MPC-CPT levels do not provide adequate incentives for prospective investment in peaking capacity. Raising the MPC to $22,800/MWh will raise spot volatility, cap values and contract prices to levels commensurate with the cost of building additional OCGT capacity consistent with achieving the reliability standard.

3.7 On balance, the draft rule supports NEM decarbonisation

In light of the upcoming change to the NEO to include emissions reduction considerations, the Commission has considered the draft rule's direct and indirect emission implications and concluded that the draft rule will, on balance, support NEM decarbonisation.

The draft rule to increase the MPC-CPT may affect NEM emissions as follows:

- a marginal increase from new entrant OCGT emissions given additional investment stimulated by a higher MPC-CPT
- investment in additional firming generation is likely to facilitate higher penetrations of intermittent renewable generation advancing decarbonisation
- it potentially influences the timing of thermal generation retirement.

The Commission has identified that direct emissions associated with OCGT reliability new entrants are limited given the low-capacity factors of such generators. Typically, these generators would operate under five per cent of the time and would provide less than 0.1% of the energy in the NEM. These emissions are immaterial in the NEM-wide context compared to other uncertainties.

The most significant emission impact from the draft rule will be associated with the indirect emission reductions associated with supporting the transition to an intermittent variable renewable-based system. The higher market price settings will encourage investment in the firming generation necessary for the NEM's transition to be successfully achieved.

There may be emission implications associated with the incentives applying to the timing of thermal generator retirement. A higher market price cap may encourage thermal generators to delay retirement if there is additional market revenue available from market dispatch. However, retirement timing decisions are multi-faceted with the materiality of higher revenues driven by the higher market price caps is highly speculative and could be mitigated by the contract positions of those thermal generator portfolios and end of life reliability concerns.

4 WE HAVE ASSESSED THE PANEL'S RECOMMENDATION ON THE APC

BOX 4: THE COMMISSION'S DRAFT DETERMINATION IS TO SET THE ADMINISTERED PRICE CAP (APC) AT $600/MWH FOR THE PERIOD 1 JULY 2025 TO 30 JUNE 2028.

In the consultation paper, the Commission noted that it intended to primarily consider whether the long-term interests of consumers are best advanced by:

- setting the APC at $500/MWh, consistent with the Panel's recommendation, or
- setting the APC at $600/MWh, consistent with its current level as set in the Amending the administered price cap rule.

Based on the analysis presented in this chapter, the Commission considers:

- The more preferable draft rule (draft rule) is sufficient, given the expected effects of inflation over the rule change period.
- The draft rule will limit the extent of AEMO intervention and compensation requirements during APP events.
- The draft rule provides more room for price volatility needed to encourage storage participation during an APP.
- The draft rule effectively manages systemic financial risk.
- Consumers are unlikely to be materially affected by the draft rule.

The Commission has also considered the potential impact of the Commonwealth's Mandatory gas code of conduct and does not consider the code removes the risk of high gas prices during APP events. The Commission considers the value of the APC should be set on an appropriately conservative basis as the APC applies during emergency events when the market is likely stressed.

The Commission considers the APC in the draft rule is likely to:

- promote efficient outcomes through competition by providing incentives for participants to continue to engage with normal market dispatch processes, rather than by relying on directions or interventions from AEMO,
- balance systemic financial risks and market efficiency considerations, and
- promote predictability and stability for market participants.

The APC is a tool to stabilise the market through periods of significant and extended price volatility. It works by capping prices paid to market participants, and it is applicable when volatile or high prices reach the CPT as defined by the Rules. The APC acts to reduce risk and financial distress to market participants by limiting their exposure to extended periods of very high prices. However, at the same time, the APC needs to provide sufficient spot revenues for

generators to cover their short-term costs and encourage them to supply energy during the administered price period (APP).

This chapter sets out the Commission's assessment of the Panel's recommended APC. It provides details supporting the Commission's draft determination to make a more preferable draft rule to set the APC at $600/MWh over the rule change period rather than the Panel's recommended $500/MWh.

4.1 The Commission utilised the Panel's RSS review modelling and APC rule change analysis in making its decision.

The Commission notes that considerable analysis has been completed on the appropriate level of the APC. The Commission built on the work completed by the Panel in the 2022 RSS review,[79] as well as the analysis performed for the *Amending the administered price cap rule change*.[80]

The Commission has utilised the analysis completed for these projects to extend consideration of the appropriate level of the APC. The Commission particularly:

- utilised the APC rule change assessment of generator SRMC coverage and consumer cost impacts, and
- the Panel's RSS review modelling of price outcomes during APP events.

4.2 The draft rule will limit the extent of AEMO intervention and compensation requirements during APP events.

An APC of $600/MWh will cover the costs of a larger proportion of the generation fleet during an APP than an APC of $500/MWh. Under the NER, generators operating during an APP that have operating costs in excess of the APC are entitled to compensation. A higher APC:

- reduces the number of participants with costs exceeding the APC
- decreases the level of reliance those generators have on compensation
- decreases the level of intervention that may be necessary by AEMO during APPs.

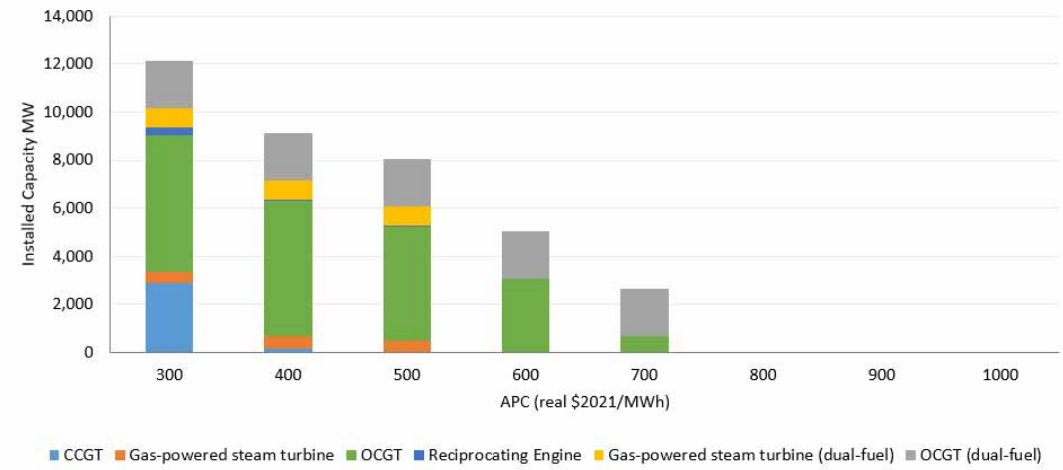
The Commission's analysis indicated a significant amount of additional thermal generation capacity with a short-run marginal cost (SRMC) between $500/MWh and $600/MWh in high fuel price scenarios.[81] Figure 4.1 shows the total installed thermal capacity that would require compensation during an APP event consistent with the June 2022 market suspension. The Commission's analysis indicated that an APC of $600/MWh would limit the amount of thermal generation capacity requiring compensation to approximately five gigawatts.

79 Reliability Panel, *2022 Reliability standard and settings review*, Ch. 7, https://www.aemc.gov.au/market-reviews-advice/2022-reliability-standard-and-settings-review

80 AEMC, *Amending the administered price cap,* https://www.aemc.gov.au/rule-changes/amending-administered-price-cap

81 AEMC, *Amending the administered price cap,* https://www.aemc.gov.au/rule-changes/amending-administered-price-cap.

Figure 4.1: Supply stack thermal generation above $300/MWh - high price scenario



Source: AEMC analysis, Amending the administered price cap rule change.
Note: This is the Commission's most recent analysis of this issue.

The Commission, therefore, considers that an APC of $600/MWh would better promote efficient outcomes through competition by providing incentives rather than directions or obligations. This is because it would promote better market participation during an APP, reducing the need for AEMO intervention.

4.3 The draft rule is sufficient given the expected effects of inflation over the rule change period.

The APC is a nominal figure which is not annually indexed by inflation and therefore, inflation will erode the APC's real value over the review period. [82]

An APC of $600/MWh will therefore retain a higher real value throughout the review period than the Panel's recommended $500/MWh APC. The Commission has considered which option is more likely to facilitate normal market functions during a possible future APP.

The impact of inflation was assessed by calculating the real value of the APC in 2028 (in 2022 dollars) using a range of expected inflation outcomes based on the RBA's inflation target range of 2-3%, and a high inflation scenario with an inflation rate of 3.5%.[83]

Table 4.1 compares the real value of a $500/MWh or $600/MWh APC in 2028 given three potential inflation outcomes. This, alongside the analysis in section 4.3 above, indicates that there is likely to be significant capacity that would not be covered by a $500/MWh APC over the review period relative to an APC of $600/MWh. This is because the $500/MWh APC decreases towards $400/MWh over the review period, leading to more than eight gigawatts

82 Unlike the MPC and CPT, which are annually indexed by inflation to retain their real value.

83 RBA, Australia's Inflation Target, https://www.rba.gov.au/education/resources/explainers/australias-inflation-target.html#:~:text=Australia's%20inflation%20target%20is%20to,Consumer%20Price%20Index%20(CPI).

of capacity requiring compensation. Although the $600/MWh APC decreases towards $500/MWh, there is a significant amount of additional capacity with costs between $500/MWh and $600/MWh.

Table 4.1: **The impact of inflation on the real value of the APC over time**

SCENARIO (BASED ON RBA TARGET BAND OF 2-3%)	AVERAGE ANNUAL INFLATION	2028 APC OF $500/MWH IN 2022 DOLLARS	2028 APC OF $600/MWH IN 2022 DOLLARS
Low inflation	2%	$453/MWh	$534/MWh
Moderate inflation	3%	$431/MWh	$518/MWh
High inflation	3.5%	$421/MWh	$505/MWh

Source: AEMC analysis

4.4 The Commission does not consider the mandatory gas code removes high gas price risk during APP events.

The Commission notes stakeholder views that the Commonwealth's gas price cap and mandatory gas code may prevent outcomes seen in June 2022 from occurring again.[84] Despite the mandatory gas code and the gas price cap, the possibility of similar events occurring is not entirely removed.

Setting the APC on the basis of the Commonwealth's mandatory gas code cap, rather than $40/GJ DWGM and STTM price caps may not reflect actual costs during an APP and creates risk of:

- generator withdrawal, and
- reliance on compensation and AEMO directions rather than the market operating to dispatch plant in the most efficient manner.

The Commission notes that the counterfactual is that these events do not occur, and there is no administered pricing period. In this case, the APC level is irrelevant as it will not be used.

The Commission considers that the APC should be set on an appropriately conservative basis consistent with the APC's role to manage systemic financial risk during emergency events. The Commission has therefore decided to account for possible worst-case scenarios similar to the June 2022 event when setting the APC, despite the mandatory gas price cap.

BOX 5: INTRODUCING THE MANDATORY GAS CODE

The Australian government implemented a mandatory gas code of conduct in December 2022. The mandatory code includes elements such as:

84 Consultation paper submissions: EUAA, pp. 5-6; ECA, p. 3; PIAC, p.7.

- A price cap, initially set at $12/GJ, designed to anchor wholesale contract negotiations between gas producers and buyers.
- An exemptions framework to encourage producers to commit more gas to the east coast gas market in the short term and facilitate new gas investment to meet ongoing demand in the medium term.
- Transparency obligations to increase visibility of the amount of uncontracted gas to be produced, and when producers will bring that gas to the domestic market.
- Conduct provisions aimed at reducing bargaining power imbalances between producers and gas buyers and establishing minimum conduct and process standards for commercial negotiations.

The price cap does not apply to:

- Pre-matched trades and broker-matched trades or offers on the gas supply hub or offers to supply gas within three days.
- Transactions in the Victorian DWGM or the Sydney, Adelaide, or Brisbane STTM.

The price cap is subject to review and may be updated by the ACCC every two years.

Source: DCCEEW, Fact sheet: Design of the gas market code, https://www.energy.gov.au/sites/default/files/2023-07/Fact%20sheet%20-%20Design%20of%20the%20Gas%20Market%20Code.docx

The Commission does not consider the Commonwealth's mandatory gas code sufficiently addresses the impact of high future gas prices on the NEM during emergency conditions as:

Spot-gas exposed generators can still be exposed to $40/GJ gas prices during emergency events

The Commonwealth's $12/GJ mandatory gas code price cap does not apply to STTM or DWGM spot gas transactions. Extreme gas prices may be experienced by peaking gas generators reliant on spot gas purchases.

Data from AEMO's Quarterly Energy Dynamics report from Q2 2022 shows that during Q2 2022, there was a 28% increase in demand from gas-fired generation through the DWGM and STTM relative to Q2 2021. Although the Commission notes that June 2022 was an outlier, the point remains that there is significant demand for gas from gas-powered generators through the DWGM and STTM.[85]

In addition to this, publicly available information on AEMO's assessment of additional compensation to generators during the June event makes multiple references to gas generators seeking compensation for fuel costs based on the prevailing spot gas prices.[86]

The Commonwealth's mandatory code does not therefore completely remove the risk that conditions similar to June 2022 could re-appear over the review period (out to June 2028).

85 AEMO, *Quarterly Energy Dynamics Q2 2022,* https://aemo.com.au/-/media/files/major-publications/qed/2022/qed-q2-2022.pdf

86 IES, *Final report additional compensation,* p. 6, Synergies, *Final report additional compensation,* p. 21, 28, 41. https://aemo.com.au/en/energy-systems/electricity/national-electricity-market-nem/nem-events-and-reports/market-event-reports/additional-compensation-to-generators-during-billing-weeks-25-to-26-2022

Initial analysis indicates a shift away from non-exempt gas trading to exempt gas trading

The AER's Wholesale markets quarterly report for Q2 2023 presented early analysis on the impact of the code on gas trading and supply.[87]Some trends observed in the report indicate that introducing the code may have implications for participant behaviour in the gas market, which would lead to increased reliance on spot trading, which is exempt from the price cap.

The AER identified:

- Declining levels of forward trade through the Gas Supply Hub that were subject to the mandatory code gas cap.[88]
- Increasing levels of Gas Supply Hub trade that is exempt from the mandatory code gas cap. Over the year, the AER observed that the percentage of trade through the Gas Supply Hub to which the price cap does not apply consistently exceeded 80%.[89]

The Commission notes that the AER's findings are based on early analysis. There have been specific domestic factors that might explain at least some part of the proportional increase in shorter-term trading compared to longer-term contracting.[90] The point remains that the proportion of gas sales that have been exempt from the mandatory gas code cap illustrates the potential for very high gas prices to apply during APP events irrespective of the cap.

4.5 The draft rule provides sufficient signals for storage participation during an APP

The Commission considered the impact of the APC on the storage participation during an APP.

The Commission[91] and the Panel[92] have previously indicated that the role of storage is becoming an important consideration when setting the APC. As more storage enters the market, consideration needs to be given to the operating dynamics of these technologies and how this may interact with the APC.

AEMO noted that a $300/MWh APC was a possible contributing factor leading to the reduction in battery storage participation during the 2022 June market suspension event. In its Quarterly Energy Dynamics report for quarter two 2022, AEMO noted that:[93]

87 AER, *Wholesale markets quarterly - Q2 2023,* https://www.aer.gov.au/wholesale-markets/performance-reporting/wholesale-markets-quarterly-q2-2023.

88 This indicates a substantial volume of forward trade, which suggests participants sought lock in gas supply approaching winter. Less contracted gas suggests there may be greater reliance on spot market trade to meet demand over winter.

89 Over Q2, most gas trade on the Gas Supply Hub was exempt from the $12 per GJ price cap due to: trade being for delivery within three days and therefore being exempt; or trading participants being exempt either by type (i.e. not being Producers) or through being granted exemptions.

90 For example, in March, growth in near-term trading appeared to be driven by increased short-term gas availability during unplanned LNG outages. In addition over May, when prices in downstream markets — which are exclusively near-term — reached $30 per GJ, producers faced financial incentives to sell into these markets at prices above $12 per GJ.

91 AEMC, *Amending the administered price cap,* consultation paper, p. 17.

92 Reliability Panel, *2022 Reliability standard and settings review*, final report, page 95, section 7.4.4

93 AEMO, *Quarterly Energy Dynamics Q2 2022,* https://aemo.com.au/-/media/files/major-publications/qed/2022/qed-q2-2022.pdf?la=en

- Applying the administered price caps followed by market suspension in the NEM had an observable impact on battery operation.
- There was a noticeable decline in battery charge/discharge cycling after the APP commenced in Queensland on 12 June 2022.
- There was a further decline in battery availability on 15 June 2022 following the market suspension.

The Commission assessed the likely energy arbitrage outcomes for batteries under an APC of $500/MWh and $600/MWh by using IES's RSS review APP event modelling. The Commission found the $600/MWh was consistent with sufficient intra-day market price spreads to facilitate storage charging and discharging.[94]

The Commission considers an APC of $600/MWh is likely to provide improved incentives for storage participation during APPs in the review period relative to an APC of $500/MWh. This will better achieve efficient outcomes through competition by encouraging storage to continue participating in the market during an APP.

The Commission notes that as storage plays an increasingly important role in the market moving forward, it will be important to consider the operating dynamics of these different technologies. The Commission recommends that the Panel considers the interactions between the settings, including the APC, and storage technologies in the 2025 RSS review.

4.6 The draft rule is consistent with an APC that effectively manages systemic financial risk

When recommending the APC, the Panel considered the trade-off between mitigating systemic financial risks for the electricity industry during extreme market events, and encouraging market participants to supply electricity during APPs.

The APC acts to reduce risk and financial distress to market participants by limiting their spot exposure during emergency periods of market stress. The draft rule APC reduces the financial exposure from the MPC of $22,800/MWh in 2028 to $600/MWh. This is a $22,200/MWh reduction or more than 97%. The APC therefore, prioritises market stability by removing scarcity pricing and the investment signals it provides for short periods during infrequent emergency events.

The Commission notes that an APC of $500/MWh, as recommended by the Panel, will provide an additional reduction in financial exposure of less than 0.4% relative to the draft rule APC of $600/MWh. The Commission did not consider this additional reduction to, on balance, advance the long-term interests of consumers given the implications previously noted of:

- reducing incentives and signals for beneficial storage participation during APP events
- increasing the potential for generator withdrawal, reliance on compensation, and AEMO intervention during future APP events.

94 Over periods of 30 minutes, 2 hours and 4 hours, our analysis indicates an APC of $600/MWh provides approximately an additional $30-50/MWh to the intra-day price spread relative to an APC of $500/MWh.

The Commission considers that increasing the APC to $600/MWh is unlikely to impact systemic financial risks in the NEM significantly and notes that stakeholders did not raise concerns regarding systemic risk in response to the consultation paper.

4.7 At a given level of hedging consumers are no worse off during an APP with a higher APC

The Commission completed analysis in the Amending the administered price cap rule change to understand the impact of increasing the APC on retailers, and by implication consumer costs.[95]The Commission's analysis indicated that:[96]

- A higher APC may increase costs for unhedged retailers during an APP given higher spot price outcomes.
- A higher APC may decrease costs for hedged retailers during an APP, given that as the APC increases, a retailers hedge payout increases, while compensation costs also decrease.

The Commission notes however that the level of the APC is not a significant consideration for total consumer costs across the review period. The infrequency of APC events and the small difference between $500/MWh and $600/MWh (when compared to an MPC of up to $22,800/MWh) makes the probability-weighted impact of additional market costs during APP events immaterial for investment and consumer cost considerations.

The Commission therefore considers that cost impacts for hedged participants are not expected to be significant due to setting the APC at $600/MWh.

The Commission considers the most beneficial consumer cost outcomes are expected to arise from APP related costs being internalised in standard, ongoing, market hedging arrangements rather than being passed through via compensation payments following an APP event.

95 AEMC, *Amending the administered price cap,* final report, Appendix C.3.

96 The Commission noted that there are a number of factors that need to be accounted for to understand the level of hedging required for a retailer to be better off under a higher APC. This includes the price at which the contracts are struck. Under the assumption of contracts struck at $200/MWh, the hedged retailer was better than the unhedged retailer off with approximately 70% of their load hedged.

A RULE MAKING PROCESS

A standard rule change request includes the following stages:

- a proponent submits a rule change request
- the Commission initiates the rule change process by publishing a consultation paper and seeking stakeholder feedback
- stakeholders lodge submissions on the consultation paper and engage through other channels to make their views known to the AEMC project team
- the Commission publishes a draft determination and draft rule (if made)
    - stakeholders lodge submissions on the draft determination and engage through other channels to make their views known to the AEMC project team
- the Commission publishes a final determination and final rule.

You can find more information on the rule change process in *The Rule change process – a guide for stakeholders.*[97]

A.1 The Reliability Panel proposed a rule to amend the MPC, CPT, and APC to the level recommended in the RSS review

On 16 November 2022, the Reliability Panel submitted a rule change request to amend the NER clauses that address the MPC, the CPT, and the APC, collectively known as the market price settings.[98]

The Panel's rule change request was to amend the market price settings to the levels recommended in the 2022 RSS review final report. The Panel recommended a progressive adjustment to the MPC and CPT to $21,800/MWh and $2,193,000 (in 2021 dollars) over the period 1 July 2025 to 30 June 2028. The proposed schedule of adjustments is set out in Table 1.1 below.

Table A.1: Recommended progressive annual changes to MPC, CPT, and APC

2021 DOLLARS	1 JULY 2025	1 JULY 2026	1 JULY 2027
MPC	$17,500/MWh	$19,500/MWh	$21,500/MWh
CPT	$1,575,000	$1,872,000	$2,193,000
CPT in hours at MPC	7.5	8	8.5
APC*	$500/MWh		

Source: Reliability Panel
Note: These figures are in 2021 dollars and the MPC and CPT that apply in a particular year are indexed by inflation.

97 *AEMC, The rule change process: a guide for stakeholders, June 2017, available here: https://www.aemc.gov.au/sites/default/files/2018-09/A-guide-to-the-rule-change-process-200617.PDF*

98 The AEMC notes that the Market Floor Price (MFP) is also part of the market price settings. The Panel did not propose any changes to the MFP, and therefore it is not part of the Panel's rule change request.

The Panel requested the rule change be fast-tracked as it considered that the rule change request met the requirements for a fast-tracked rule change, given that the Panel:[99]

- is an electricity market regulatory body under section 87 of the NEL, and
- undertook the 2022 RSS Review in accordance with the rules consultation procedures under rule 8.9 of the NER.

The Commission considered the Panel's request for a fast-track process but has elected to use the standard rule change process, which includes publication and feedback on a consultation paper. The Commission's reasons for this decision are set out in Chapter 3 of the rule change consultation paper.

A.2 The Panel's proposal addressed the RSS review findings that the market price settings are too low to support the investment needed during the transition.

The majority of the Panel considered that the current level of the MPC and CPT needed to be increased as they currently would not support the investment required to achieve the reliability standard. The Panel also considered that the current level of the APC should be increased to reduce reliance on the compensation regime and reduce additional pass-through costs to consumers.

The Panel therefore considered that retaining the existing MPC of $15,100/MWh and CPT of $1,359,100 for the review period from 1 July 2025 to 30 June 2028 would:

- not support the investment needed to achieve the reliability standard, particularly given the degree of thermal generation retirement expected following the review period, and
- not achieve sufficient revenue for any marginal new entrant technology in NSW or VIC.

The Panel considered retaining the existing APC of $300/MWh for the review period from 1 July 2025 to 30 June 2028 would result in the following key issues:

- possible future administered price periods caused by high fuel costs may result in insignificant generating capacity being withdrawn and potential market suspension similar to the events in June 2022
- there is an increased risk of undue reliance on the administered pricing compensation process when taking into account the misalignment between the unchanged APC of $300/MWh and the increasing consumer price index, as well as Australia's exposure to volatile international coal and gas prices
- storage units may not be incentivised to participate during a future administered price period if there is limited price movement to signal charging and discharging, and
- the risk of increased consumer costs from large compensation payments may be higher if there is undue reliance on the compensation process, and retailers cannot hedge against compensation costs which also introduces uncertainty

99 Section 96A of the NEL defines the relevant requirements for a rule change to be fast-tracked.

A.3 The Panel proposed to address these issues by progressively increasing the market price settings over the period 1 July 2025 to 30 June 2028.

The Panel recommended increasing the MPC and CPT to align with the level required to support investment consistent with the reliability standard.

According to IES modelling outcomes, the proposed increase is the minimum level required to support investment in generation, storage, and demand response to avoid exceeding the reliability standard in light of thermal generator retirements after 30 June 2028.

The proposal addresses the issues in the following ways:

- IES modelling outcomes demonstrate a material benefit compared to the current incentives for investment
- gradual changes in the MPC will minimise impact while also achieving the necessary levels identified by IES modelling results to produce outcomes consistent with the reliability standard
- the value of increasing demand response participation was taken into account to the greatest extent possible
- incentives for storage investment will be incrementally improved
- contract market impacts and systemic risk will be minimised, and
- impact on electricity costs will be minimised to the level required to support reliability.

The Panel considered consumer concerns about possible and future increasing electricity costs. The Panel's final recommendation sought to limit end-user bill impacts to the minimum level possible while still supporting future outcomes consistent with the reliability standard. High-level analysis for the review indicated consumer bill cost increases to be around 3 per cent (in real terms), spread over a three-year period from 1 July 2025 to 30 June 2028.

The majority of the Panel considered the final recommendation was justified given the value of the benefit realised by consumers from enhanced future reliability outcomes as indicated by the detailed modelling. It is worth noting that two Panel members representing consumers did not consider an increase to the MPC or CPT was needed, on the basis that they considered the:

- reliability standard is unlikely to be exceeded during the review period
- financial risks for some retailers and spot-exposed customers may be too high
- the modelling assumed limited volumes of demand response would be available under the existing price cap which does not reflect anticipated changes to the Wholesale Demand Response Mechanism, and
- the modelling did not include revenue from jurisdictional schemes, such as the NSW Electricity Infrastructure Roadmap in calculating the MPC and CPT required to support marginal new entrants

A.4 The process to date

On 11 May 2023, the Commission published a notice advising of the initiation of the rule-making process and consultation in respect of the rule change request.[100] A consultation paper identifying specific issues for consultation was also published. Submissions closed on 22 June 2023.

The Commission received 17 submissions as part of the first round of consultation. The Commission considered all issues raised by stakeholders in submissions. Issues raised in submissions are discussed and responded to throughout this draft rule determination.

100 This notice was published under s. 95 of the NEL.

B REGULATORY IMPACT ANALYSIS

The Commission has carried out regulatory impact analysis to make its draft determination and more preferable draft rule (draft rule). This section summarises outcomes for key stakeholder groups. Further information is available in Chapters 3 and 4, and IES's modelling report.

B.1 Our regulatory impact analysis methodology

We considered a range of policy options

The Commission compared a range of viable policy options that are within our statutory powers. The Commission analysed the rule proposed in the rule change request; a business-as-usual scenario where we do not make a rule; and a more preferable rule involving a different MPC, CPT, and APC from existing settings; or the settings recommended by the Panel.

The Commission considered:

- a counterfactual of retaining existing market price settings over the review period and over the long term
- the Panel's proposed MPC, CPT, and APC
- whether a higher or lower MPC-CPT should be selected within a candidate region identified as being robust to uncertainty.

On the APC, the Commission considered:

- the feasibility of retaining a $300/MWh APC
- the Panel's recommended $500/MWh APC
- retaining a $600/MWh APC

We assessed the benefits and costs of each policy option

The Commission's regulatory impact analysis for this rule change used qualitative and quantitative methodologies. It involved identifying the stakeholders impacted and assessing the benefits and costs of policy options. The depth of analysis was commensurate with the potential impacts. Where commensurate and feasible, the Commission has quantified the impacts. The Commission focused on the types of impacts within the scope of the current NEO.[101]

B.2 Detailed estimates of the MPC-CPT costs and benefits

The Commission has identified the rule change as impacting:

- Consumers through changes in bill costs and the costs of unserved energy
- Retailers through changes in energy settlement and hedging costs

101 As the current NEO does not include emissions, the analysis outlined below does not include emissions. However, the Commission notes the upcoming change to the NEO to include emissions, and considers the draft rule would contribute to the new NEO for the reasons set out in sections 2.1 and 3.7

The Commission assessed impacts on the following two timeframes:

- An assessment of impacts over the review period to 2028 which are based on forecasts of actual reliability outcomes during this period.
- An assessment of longer-term cost benefits associated with the rule change relative to maintaining existing MPC-CPT. This is a long-term equilibrium assessment of equilibrium levels of investment, unserved energy, and consumer bill costs under the existing MPC-CPT relative to the draft rule MPC-CPT.

The Commission's detailed estimates of costs and benefits for different stakeholder groups are set out below. Detailed results are available in IES's modelling report.

B.2.1 Consumer costs

Consumers will be affected by the rule in the following ways, through the:

- level of reliability and cost of unserved energy experienced in the form of foregone access to the benefit of consuming energy services
- bill costs borne in respect of electricity supply.

The Commission identified a small increase in consumer costs in 2028 with significant long-term cost and reliability benefits. There are no unserved energy cost impacts associated with 2028 forecast outcomes as the rule change was assessed against the counterfactual of outcomes under existing settings at the same forecast level of reliability.

Assessment results are presented in Chapter 3 and summarised in Table B.1 below.

Table B.1: Consumer cost impacts relative to outcomes under existing settings

	BILL COST INCREASES ($/MWH)	UNSERVED ENERGY COST INCREASES ($/MWH)
2028 Forecast (NEM average)	$7.3/MWh	N/A
Long term equilibrium	-$4.50/MWh	-$4.53/MWh

Source: IES-AEMC

B.2.2 Retailer costs

Retailers face hedging and settlement cost impacts from the proposed rule.

- The draft rule increases the potential for overall higher, and more volatile market prices. This increases the level of financial risk which needs to be hedged.
- The higher MPC and CPT increase market prices during periods of supply scarcity thereby increasing total average prices.

The Commission has modelled the change in electricity settlement and hedging costs for a prudent retailer under the draft rule relative to existing arrangements.

The Commission identified an increase in wholesale electricity settlement and hedging costs for a prudent retailer in 2028 relative to outcomes under existing settings. A decline in total wholesale electricity settlement and hedging costs is observed in the long term attributable to a more competitive market given the additional investment that occurs under the draft rule.

Table B.2: Retailer impacts relative to outcomes under existing settings

	WHOLESALE ELECTRICITY SETTLEMENT ($/MWH)	HEDGING ($/MWH)
2028 Forecast (NEM average)	$4.7/MWh	$2.6/MWh
Long term equilibrium	-$3.50/MWh	-$1/MWh

Source: IES-AEMC

B.3 Assessment of APC costs and benefits

The Commission has identified that in its choice of APC, it must appropriately balance the benefits of improved market and reliability outcomes during an APP with any additional costs to consumers associated with a change in the APC.

The Commission considers that on balance, the APC of $600/MWh strikes the best balance between these concerns. This is because:

- According to analysis completed in the *Amending the administered price cap* rule change, there would be a significant amount of additional generation capacity that would have its SRMC covered by an APC of $600/MWh relative to $500/MWh. This would maintain the incentive for more generation to participate in the market during an APP, and therefore reduce reliance on AEMO directions and intervention during an APP. The Commission considers there are reliability benefits associated with this improved level of market participation.
- The Commission's analysis during this rule change indicates that an APC of $600/MWh is likely to provide a stronger incentive for storage participation in the market during an APP. Similarly to the point above, the Commission considers there are reliability benefits associated with this improved level of participation.
- According to analysis completed in the *Amending the administered price cap* rule change, at a given level of hedging, consumers are likely to be better off with a higher APC and lower compensation costs. This is because any costs that are captured by existing contracting arrangements are internalised in these arrangements. In addition, given the low likelihood of APPs more generally, the total consumer cost impact over the review period from an APC of $600/MWh are not expected to be significant.

Therefore, on balance the Commission considers that the reliability benefits associated with an APC of $600/MWh outweigh any associated costs.

C NEM RELIABILITY FRAMEWORKS OVERVIEW

C.1 Reliability in the National Electricity Market

A reliable power system has enough generation, demand response, and network capacity to supply consumers with the energy that they demand with a very high degree of confidence.

C.1.1 The objectives of the reliability framework

The core objective of the existing reliability framework in the NEM is to deliver efficient reliability outcomes through market mechanisms to the largest extent possible. In an energy-only market these mechanisms centre on pricing arrangements to provide financial incentives for participants (generators, retailers, aggregators and customers) to make investment, retirement and operational decisions that support reliability.[102]

The NEM provides incentives for investment in new power system resources through scarcity pricing. During periods of supply scarcity relative to demand, spot prices in the NEM can be very high. These high prices provide operational signals for additional generation and demand response to make itself available for dispatch. It also indicates a need for future investment in new resources.

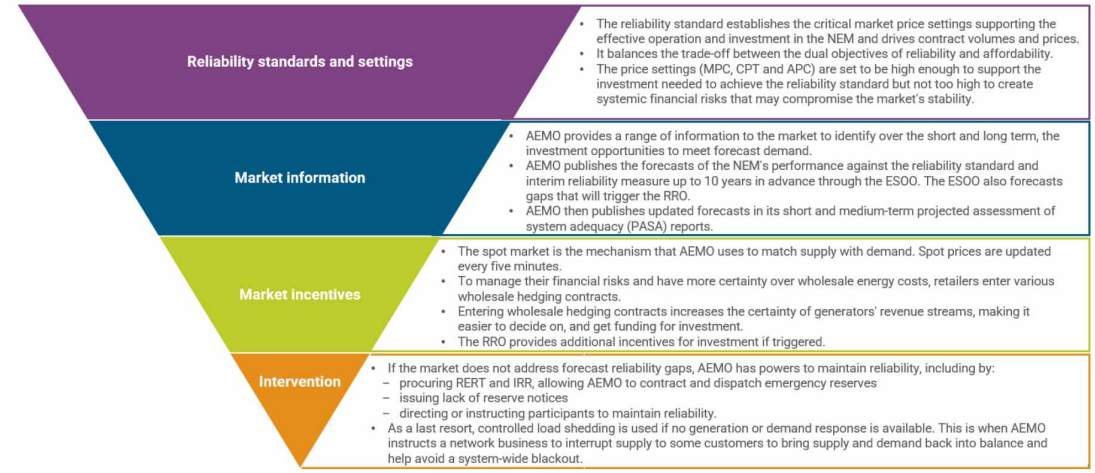
The market price settings, which are the subject of this rule change, define the limits of scarcity pricing, and the financial incentives available from the market to support investment. They are set at a level consistent with the NEM's reliability standard. The reliability standard (the standard) in the NEM is a measure that expresses the efficient level of unserved energy (USE). USE occurs when there is a shortage of available generation and network capacity to meet end-user demand and customer load shedding is required.[103]

The efficient level of USE balances the trade-off between the cost of investing in power system resources and the value that customers associate with a more reliable power system.

102 In addition, AEMO provides information to participants on projections and forecasts relevant to reliability outcomes and also has tools that it can use to intervene, when needed, to maintain power system reliability consistent with relevant standards.

103 It is not in the long-term interests of consumers to have no USE. Such an approach would be inefficient as the investment and operating costs of supplying energy at certain times would exceed the value placed on it by consumers. The reliability standard is therefore the level of USE that seeks to minimise total system costs considering power system capacity investment and operating costs, as well as the cost of any USE that would be borne by consumers. The standard currently targets a maximum expected USE in a region of 0.002% of the total energy demand in that region for a given year.

Figure C.1: The NEM's reliability framework



Source: AEMC

C.1.2 Role of the market price settings in the NEM's reliability framework

The market price settings limit the scope for the market price to rise and fall and therefore set the revenue potential available to support investment.

- The MPC places an upper limit on wholesale market prices that can be reached in any trading interval. The value of the MPC is specified in the NER and annual indexed with inflation.
- The CPT is a threshold on the cumulative price for energy and frequency control ancillary services (FCAS) over a period of seven days beyond which an administered price period (APP) commences and the APC is applied.

The MPC and CPT share a common purpose. They protect the long-term integrity of the market by limiting financial exposure to unbounded high prices. Together the MPC and CPT are set at levels that are sufficiently high to support the investment required to achieve reliable outcomes consistent with the standard, but not too high to create systemic financial risks that may compromise the stability of the market.

The APC is the maximum market price ($/MWh value) paid to participants that can be reached in any trading interval during an administered price period (APP). An APP occurs after the sum of the trading interval prices over 7 days cumulates to a level that exceeds the cumulative price threshold (CPT). The value of the APC is specified in the NER and is set at $600/MWh until 1 July 2025.[104]

104 The APC was changed on 1 December 2022 in the AEMC's Amending the Administered Price Cap rule change. The AEMC elected to amend the APC on an interim basis in response to the APP and market suspension event that occurred in July 2022. Prior to 1 December 2022, at the completion of the Panel's RSS review, the APC was $300/MWh. For more information on the Amending the Administered Price Cap rule change: https://www.aemc.gov.au/rule-changes/amending-administered-price-cap

C.2 The NEM's transition to high renewable generation requires market price settings sufficient to encourage investment

The Panel's RSS review and this rule change are occurring in the context of a period of physical and regulatory transition in the NEM.

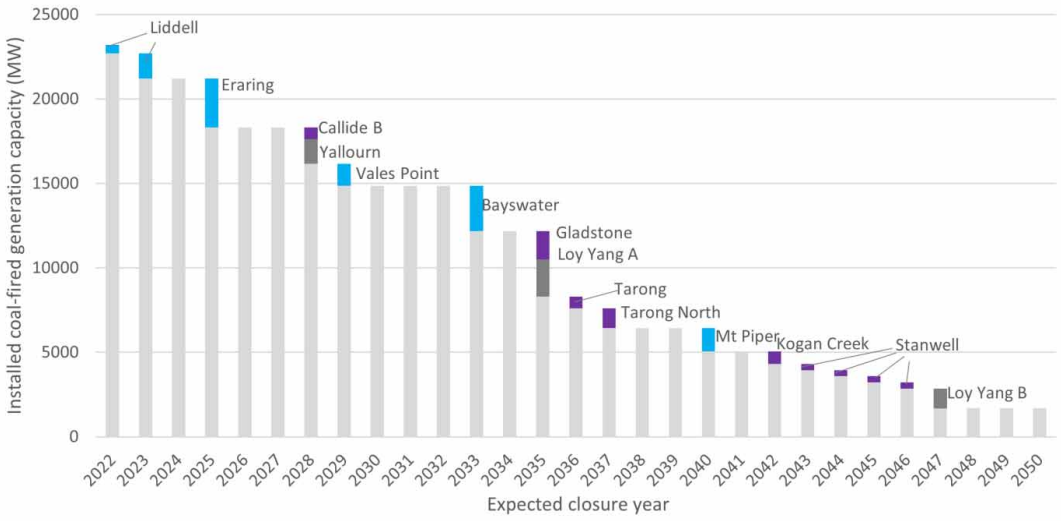
C.2.1 The NEM is undergoing a transition requiring new investment to replace retiring generation

The NEM's reliability performance to date reflects the historic investments made in thermal coal-fired power stations that still form the bulk of the NEM generating fleet. Some of these thermal generators are approaching the end of their technical lives. Operation of remaining coal plant continues to be challenging due to the changing operating environment, particular the impact of solar generation in the middle of the day.

Future reliability performance relies on new investment to replace the energy delivered by retiring generators and to meet load growth within the operating requirements of the NEM. To illustrate the scale of the change, the currently announced thermal generator retirement timetable is shown in Figure A.2. It indicates that 7,650 MW of dispatchable capacity is expected to retire by 2030 with 15,065 MW by 2040.

The market price settings will need to be set at a level that provides the right mix of dispatchable generation in the right NEM regions to maintain reliability in the context of generator retirements and the physical transition between thermal coal and high variable renewable generation.

Figure C.2: Announced coal fired generation retirement dates



Source: AEMO - Generating unit expected closure year - March 2023

C.2.2 The NEM's reliability policy environment is changing with the implementation of jurisdictional reliability schemes

State Governments have become more active in supporting new-generation investment to maintain reliability given thermal generator retirements. Generally, jurisdictional schemes provide some revenue certainty to support new investments and may supplement the amount of revenue required from market outcomes.

Jurisdictional reliability support schemes include:

- The NSW Electricity Infrastructure roadmap, aims to deliver at least 12 GW of new renewable electricity generation and 2 GW of long-duration storage.[105]
- The Victorian renewable energy target is to achieve 50% of electricity generated from renewable sources by 2030.[106]
- The QLD renewable energy target includes capacity targets: 25 GW VRE (22 GW new) by 2035 including 7 GW pumped hydro, 3 GW low emissions gas generation, and 11 GW rooftop solar, 6 GW home and business batteries.[107]
- Tasmanian Renewable Energy Action Plan to produce 200% renewable energy by 2040 double existing renewable capacity to 8GW by 2035.[108]
- The SA renewable energy target is to achieve 100% net renewables by 2030.[109]

The Commonwealth government is currently designing a Capacity Investment Scheme (CIS).[110] The CIS is a Commonwealth revenue underwriting scheme intended to be available to all jurisdictions to support the entry of zero emissions dispatchable generation and storage technologies.[111]

The NEM's current reliability framework does not take into account schemes such as these. The market price settings alone are intended to deliver efficient reliability outcomes. Jurisdictional investment schemes and market price incentives will complement each other in the short term to deliver reliability outcomes in the NEM.

This rule change is part of a larger reliability work program currently being conducted by the AEMC and others to manage reliability risk over the short, medium and long-term:

Projects managing reliability risk over the short term:

105 Further information is available at:https://www.energy.nsw.gov.au/nsw-plans-and-progress/major-state-projects/electricity-infrastructure-roadmap

106 For more information see: https://www.energy.vic.gov.au/renewable-energy/victorian-renewable-energy-and-storage-targets#:~:text=Our%20renewable%20energy%20targets,-Victoria's%20current%20renewable&text=25%25%20by%202020%20(achieved),50%25%20by%202030.

107 For more information,see https://www.qld.gov.au/about/newsroom/queensland-energy-and-jobs-plan.

108 For more information, see: https://recfit.tas.gov.au/renewables/tasmanian_renewable_energy_action_plan#:~:text=This%20ambitious%20goal%20aims%20to,as%20we%20do%20in%202022.

109 for more information, see https://www.energymining.sa.gov.au/industry/modern-energy/leading-the-green-economyand https://www.safa.sa.gov.au/environmental-s-governance/energy

110 For more information see: https://minister.dcceew.gov.au/bowen/media-releases/capacity-investment-scheme-power-australian-energy-market-transformation

111 The CIS design process has yet to be finalised. Further information is available at: https://www.energy.gov.au/news-media/news/capacity-investment-scheme-power-australian-energy-market-transformation

- Energy Ministers agreeing to extend the interim reliability reserve (IRR) to 31 March 2028.[112]
- The AEMC's draft recommendation to extend the application of the interim reliability measure (IRM) to the RRO.[113]
- The AEMC's consideration of the operating reserves rule change requests.[114]

Projects managing reliability risk over the medium term:

- This rule change.
- The AEMC's review of the operation of the retailer reliability obligation (RRO).[115]
- The extension of the T-3 Ministerial lever for the RRO to all NEM regions.[116]

Projects managing reliability risk over the long-term

- Work underway through the Energy Ministers Meeting on managing risks of the disorderly exit of coal generation.
- The Commonwealth Government's CIS.
- The Panel's review of the form of the reliability standard.

112 National Electricity Amendment (Interim Reliability Reserve) Rule 2022.
113 found here
114 found here
115 found here
116 ESB, *T3 Trigger for the RRO — Draft Bill*, 20 July 2022

D LEGAL REQUIREMENTS TO MAKE A RULE

This appendix sets out the relevant legal requirements under the NEL for the Commission to make a draft rule determination.

D.1 Draft rule determination and more preferable draft rule

In accordance with section 99 of the NEL, the Commission has made this draft rule determination for a more preferable draft rule in relation to the rule proposed by Reliability Panel.

- The Commission has elected to make the Panel's recommended rule change in respect of the MPC and CPT over the review period.
- The Commission has elected to make a more preferable draft rule in respect of the APC.

The Commission's reasons for making this draft rule determination are set out in chapter 2.

A copy of the more preferable draft rule is attached to and published with this draft determination. Its key features are described in chapter 2.

D.2 Power to make the rule

The Commission is satisfied that the more preferable draft rule falls within the subject matter about which the Commission may make rules.

The more preferable draft rule falls within s. 34 of the NEL as it relates to regulating the operation of the national electricity market for the purposes of the safety, security and reliability of that system (34(1)(a)(i),(ii)).

D.3 Making a more preferable rule

Under s. 91A of the NEL, the Commission may make a rule that is different (including materially different) to a proposed rule (a more preferable rule) if it is satisfied that, having regard to the issue or issues raised in the rule change request, the more preferable rule will or is likely to better contribute to the achievement of the NEO. In this instance, the Commission has made a more preferable rule. The reasons are summarised in chapter 2.

D.4 Commission's considerations

In assessing the rule change request the Commission considered:

- its powers under the NEL to make the more preferable draft rule
- the rule change request
- submissions received during first round consultation
- the Commission's analysis as to the ways in which the more preferable draft rule will or is likely to contribute to the achievement of the NEO
- the application of the more preferable draft rule to the Northern Territory.

There is no relevant Ministerial Council on Energy (MCE) statement of policy principles for this rule change request.[117]

D.5 Making electricity rules in the Northern Territory

Test for scope of "national electricity system" in the NEO

Under the NT Act, the Commission must regard the reference in the NEO to the "national electricity system" as a reference to whichever of the following the Commission considers appropriate in the circumstances having regard to the nature, scope or operation of the proposed rule:[118]

1. the national electricity system
2. one or more, or all, of the local electricity systems[119]
3. all of the electricity systems referred to above.

Test for differential rule

Under the NT Act, the Commission may make a differential rule if it is satisfied that, having regard to any relevant MCE statement of policy principles, a differential rule will, or is likely to, better contribute to the achievement of the NEO than a uniform rule.[120] A differential rule is a rule that:

- varies in its term as between:
  - the national electricity systems, and
  - one or more, or all, of the local electricity systems, or
- does not have effect with respect to one or more of those systems

but is not a jurisdictional derogation, participant derogation or rule that has effect with respect to an adoptive jurisdiction for the purpose of s. 91(8) of the NEL.

A uniform rule is a rule that does not vary in its terms between the national electricity system and one or more, or all, of the local electricity systems, and has effect with respect to all of those systems.[121]

The Commission's draft determinations in relation to the application of the more preferable draft rule to the Northern Territory is set out in chapter 2.

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117 Under s. 33 of the NEL and s. 73 of the NGL the AEMC must have regard to any relevant MCE statement of policy principles in making a rule. The MCE is referenced in the AEMC's governing legislation and is a legally enduring body comprising the Federal, State and Territory Ministers responsible for energy. On 1 July 2011, the MCE was amalgamated with the Ministerial Council on Mineral and Petroleum Resources. In December 2013, it became known as the Council of Australian Government (COAG) Energy Council. In May 2020, the Energy National Cabinet Reform Committee and the Energy Ministers' Meeting were established to replace the former COAG Energy Council.

118 Clause 14A of Schedule 1 to the NT Act, inserting section 88(2a) into the NEL as it applies in the Northern Territory.

119 These are specified Northern Territory systems, listed in schedule 2 of the NT Act.

120 Clause 14B of Schedule 1 to the NT Act, inserting section 88AA into the NEL as it applies in the Northern Territory.

121 Clause 14 of Schedule 1 to the NT Act, inserting the definitions of "differential Rule" and "uniform Rule" into section 87 of the NEL as it applies in the Northern Territory.

D.6 Civil penalty provisions and conduct provisions

The Commission cannot create new civil penalty provisions or conduct provisions. However, it may recommend to the Energy Ministers' Meeting that new or existing provisions of the NER be classified as civil penalty provisions or conduct provisions.

The more preferable draft rule does not amend any clauses that are currently classified as civil penalty provisions or conduct provisions under the National Electricity (South Australia) Regulations.

The Commission does not propose to recommend to the Energy Ministers' Meeting that any of the proposed amendments made by the more preferable draft rule be classified as civil penalty provisions or conduct provisions.

D.7 Review of operation of the rule

The more preferable draft rule does not require the Commission to conduct a formal review of the operation of the rule. The Commission may however self-initiate a review of the operation of the rule at any time if it considers such a review would be appropriate, pursuant to section 45 of the NEL.

ABBREVIATIONS AND DEFINED TERMS

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
APC	Administered Price Cap
APP	Administered Price Period
BESS	Battery Energy Storage System
CAPEX	Capital Expenditure
CER	Consumer Energy Resources
CIS	Capacity Investment Scheme
Commission	See AEMC
CPT	Cumulative Price Threshold
ESOO	Electricity Statement of Opportunities
IES	Intelligent Energy Systems
ISAR	Inputs Scenarios and Assumptions Report
ISP	Integrated System Plan
LTESA	Long Term Energy Service Agreement
MFP	Market Floor Price
MPC	Market Price Cap
NEL	National Electricity Law
NEO	National Electricity Objective
NER	National Electricity Rules
NERL	National Energy Retail Law
NERO	National Energy Retail Objective
NERR	National Energy Retail Rules
NGL	National Gas Law
NGO	National Gas Objective
NGR	National Gas Rules
NT Act	National Electricity (Northern Territory) (National Uniform Legislation) Act 2015
OCGT	Open Cycle Gas Turbine
OPEX	Operational expenditure
Panel	AEMC Reliability Panel
Proponent	The individual / organisation who submitted the rule change request to the Commission
RSS review	Reliability Standard and Settings review