AUSTRALIAN ENERGY MARKET COMMISSION

RULE

Rule determination

National Electricity Amendment (Amendment of the Market Price Cap, Cumulative Price Threshold and Administered Price Cap) Rule

Proponent

Reliability Panel

7 December 2023

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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 made a more preferable final rule (final rule) to amend the existing market price settings in the national electricity market (NEM). The final rule is the same as our draft rule. It 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 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 (CIS) and state-based jurisdictional schemes.[1] The investment incentives created by jurisdictional schemes and the CIS complement rather than replace the need for market price settings that are sufficient to achieve the reliability standard over the long term. The revised 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, the final rule, CIS and jurisdictional schemes will work together to help decarbonise the NEM by providing the flexible supply needed to support reliability given increasing levels of wind and solar generation.

5 In making this final rule the Commission has considered the expansion of the CIS announced on 23 November 2023.[2] The Commission retains its view that the long-term interests of consumers are best served by progressively increasing the MPC and CPT to the level necessary to support long-term reliability outcomes. The Commission considers the expanded CIS remains fundamentally complementary with efficient market price settings.[3]

6 In making the final 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 final 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.

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

The NEM is undergoing significant change

8 The NEM is going through unprecedented change as aging 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 60% of coal-fired generation will exit the market by 2030, while grid-scale wind and solar will almost triple and

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.

2 On 23 November 2023, the Australian Government announced an expansion of the Capacity Investment Scheme (CIS) to target 9 GW of dispatchable capacity and 23 GW of variable zero-emission capacity nationally - for a total of 32 GW nationally.

3 In fact, this is an explicit feature of the CIS because one of its design objectives is to ensure that new capacity enters Australian energy markets with limited to no impact on electricity market functions and associated rules.

storage capacity will increase by over seven-fold.[4]

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 coal-fired generation.[5] Further reliability risks following the closure of coal-fired generation have also been forecast by AEMO in its 2023 Electricity Statement of Opportunities (ESOO). 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.[6]

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

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

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 extremely high prices in the wholesale electricity market and is currently set at the equivalent of 7.5 hours of market prices at the MPC. Once the CPT has been reached, the APC caps the price in the wholesale electricity market, thereby limiting the associated financial risk. 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 final rule the:[7]

- MPC will progressively increase from $18,600/MWh on 1 July 2025 to $22,800/MWh on 1 July 2027, and
- 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.

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 final 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 reliance on AEMO's intervention and compensation processes.

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

5 AEMO, NEM market-suspension and operational challenges in June 2022, August 2022, p. 12

6 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

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

16 The fine rule's changes to the market price settings from 1 July 2025, in 2022 dollars, are set out in the table below.

Table 1: Changes to the MPC, CPT and APC under the final 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 final rule will improve reliability and reduce costs for consumers

17 The changes to the MPC and CPT in the final rule, in partnership with jurisdictional schemes, will help to support a mix of supply options, including storage, demand response, and gas generation. This mix of options will provide the flexible supply needed to reinforce increasing levels of wind and solar generation and support better reliability than would be the case 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-run marginal costs of 77% of thermal generators. Maintaining the APC at $600/MWh will encourage hydro, 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 final 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, relative to outcomes under the existing MPC and CPT.[8] 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 final rule for consumers in terms of improved reliability and lower long-term costs outweigh this relatively small short-term cost increase. We also note the additional investment supported by the Commonwealth's government's recently announced expanded CIS may reduce the 2028 consumer cost impact below the modelled level.

We have considered the national electricity objective and stakeholder feedback in making our final rule

21 In making our final 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 final rule meets the assessment criteria in these ways:

8 This increase will occur progressively between 1 July 2025 to 30 June 2028.

1. **Delivering efficient levels of reliability** — the final rule will deliver efficient long-term levels of reliability that correspond to consumer willingness to pay.
2. **Maximising outcomes for consumers** — the final rule appropriately balances costs and benefits for consumers by minimising the costs of achieving efficient levels of reliability.
3. **Enhancing market efficiency** — the final rule will enhance market efficiency across operational and investment timeframes through competition, rather than directions and obligations.
4. **Principles of good regulatory practice** — the final 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 final rule will promote the long-term decarbonisation of the NEM to contribute to achieving government emissions reduction targets.

22 We have also considered stakeholder feedback, including submissions in response to the rule change consultation paper and draft determination and discussions with a wide range of stakeholders. We note while most stakeholders supported increasing 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 The Commission understood and gave particular consideration to the concerns raised by consumer bodies in making this rule. In making our draft rule, the Commission investigated each consumer advocate concern with additional short and long-term analyses to quantify the cost and reliability impact of increasing the MPC and CPT relative to maintaining existing arrangements. Submissions to the draft determination appreciated this work which demonstrated the long-term benefits for consumers from the rule change.

24 Overall, after carefully considering stakeholder feedback and our assessment criteria, we consider the final rule, which is the same as 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.

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1 The Commission has made a final determination

The Australian Energy Market Commission (AEMC or Commission) has made a more preferable final rule (final rule) to increase the market price cap (MPC), cumulative price threshold (CPT), and maintain the administered price cap (APC).

The Commission has made this final 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 final rule will apply to the period 1 July 2025 to 30 June 2028 (the rule change period).[9]

The Commission considers the final rule supports power system reliability while minimising consumer costs. It will encourage investment in generation, storage, and demand response to support reliability as thermal generators retire and the NEM shifts to high penetrations of intermittent renewable generation. The Commission's final rule will work alongside jurisdictional reliability schemes to deliver the best reliability and cost outcomes for consumers throughout the transition.

This chapter includes the following:

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

1.1 Our final determination will increase the MPC, CPT and maintain the APC

The Commission's determination of the MPC, CPT, and APC is described in section 1.1.1 to section 1.1.3 below.

1.1.1 The final rule increases the MPC and CPT

The Commission's final rule sets the MPC and CPT consistent with the levels recommended by the Reliability Panel in its rule change request.[10] The amended MPC and CPT values are the same as those proposed in the Panel's rule change request but have been updated from 2021 dollars to 2022 dollars and rounded to the nearest $100.[11] [12]

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.

10 Reliability Panel, Rule Change Request to amend the Market Price Cap, Cumulative Price Threshold and Administered Price Cap from 1 July 2025 to 30 June 2028, 16 November 2022.

11 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.

12 Clauses 3.9.4(e)(1) and 3.14.1(f)(1) of the NER require the MPC and CPT to be rounded to the nearest 100 dollars.

The final 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, corresponding to an increase from 7.5 hours of market prices at the MPC to 8.5 hours of market prices at the MPC. Table 1.1 presents the final rule MPC and CPT in each year of the rule change period.

Table 1.1: MPC and 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 final rule maintains the APC at its current level

The Commission's final rule maintains the APC at $600/MWh for the rule change period 1 July 2025 to 30 June 2028. The Commission has elected to make a more preferable rule to maintain the APC at $600/MWh, instead of at the Panel's recommended $500/MWh. The Commission is satisfied that its more preferable rule will, or is likely to, better contribute to the achievement of the National Electricity Objective (NEO).[13]

The current $600/MWh APC was set in the Amending the Administered Price Cap rule change (APC rule change) on 17 November 2022. The APC rule change was made in response to the market suspension in June 2022 and temporarily increased the APC from $300/MWh to $600/MWh until 30 June 2025.[14] In the absence of this final determination the APC would have reverted to $300/MWh over the rule change period.

The Commission considers $600/MWh would better contribute to the achievement of the NEO than $300/MWh or $500/MWh as these would not appropriately balance systemic financial risks with efficient market outcomes during an administered price period (APP). Further analysis is provided in Chapter 4.

1.1.3 Our final determination retains the current Market Floor Price

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

The Commission is aware of a range of reform options that may be considered for the MFP as the power system transitions. The Panel will be further considering the MFP in its next RSS review which is scheduled to commence in 2025. In this final determination, we consider that keeping the current MFP of -$1,000/MWh is a no-regrets approach while this work is underway.

1.2 Our final determination will support NEM reliability as the power system transitions

The final 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 over the long-term.

13 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.

14 Further information can be found on the APC rule change project page: https://www.aemc.gov.au/rule-changes/amending-administered-price-cap

The NEM is going through a transition to lower emission generation as aging 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 15 GW retiring by 2040.[15] In its 2022 Integrated System Plan (ISP), the Australian Energy Market Operator (AEMO) forecast that 60% of coal-fired generation will exit the market by 2030, while grid-scale wind and solar will almost triple.[16]

A very large amount of new investment in dispatchable generation, storage, and demand response will be required to maintain reliability given the amount of intermittent renewable energy capacity that is required to achieve net zero emissions.[17] AEMO's ISP identifies a need for approximately 46 GW/640 GWh of dispatchable storage capacity, 7 GW of existing dispatchable hydro, and 10 GW of gas-fired generation by 2050 to efficiently operate and firm a largely renewable NEM.[18]

The final rule will support the mix of new entrant technologies that are needed during the transition. These technologies include storage, demand response, and gas generation, which will provide flexible generation to address variability in renewable energy generation levels. These technologies will also assist in managing reliability during extended periods of low wind and solar generation.

The final rule proposes a sufficient MPC and CPT to support investment in new entrant open cycle gas turbine (OCGT) generators in combination with additional price-responsive 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 consumers' willingness to pay.

The final rule also supports new entrant battery investments. While not sufficient for batteries, and other storage technologies, to fully cover their investment costs from the energy market revenue alone, the final rule MPC and CPT shrinks the gap between the 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 final rule's higher MPC and CPT will substantially support new storage developments.

1.3 The final 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 a reliable electricity system and affordable electricity prices.

The final rule balances the need for additional generation and storage investment with minimising consumer costs. The Commission's modelling indicates a short-term increase in consumer bill costs of 2.7 percent by 2028, relative to outcomes under the existing MPC and CPT.[19] However, this short-term increase is necessary to support reliability and will contribute to lower electricity costs over the long-term.

Lower long-term electricity price reductions occur due to the additional competition created by more generators entering the market to compete against each other to supply electricity. The Commission's necessary increase in the MPC and CPT will drive this additional competition.

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

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

17 Government targets to achieve net zero emissions are set out in Table 1.1 in the Targets Statement, available here: https://www.aemc.gov.au/regulation/targets-statement-emissions

18 AEMO, 2022 Integrated System Plan - Final Report, Part B ISP Development Opportunities, p. 51.

19 This is the increase by 2028 averaged across all NEM regions.

Additionally, consumers will benefit from avoiding the costs of an unreliable power system in the long-term due to more generation entering the market. Further analysis is provided in Chapter 3.

The final rule minimises consumer cost impacts as a result of this necessary change, as 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 the NEM's reliability standard, which is the level of reliability that best trades-off reliability of supply and the cost of new generation for consumers.

The final rule further minimises the impact of consumer cost increases by progressively transitioning the MPC and CPT in 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 final rule works together with jurisdictional schemes to deliver reliability in a transitioning power system

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.

The Commission does not consider that the presence of jurisdictional schemes removes the need for an MPC and CPT which are high enough to support new entrant investment. The Commission further 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 with the final determination on our website.[20]

The MPC and CPT in the final rule work together with the jurisdictional schemes to 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 final 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 market 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. Therefore, jurisdictional schemes support generation investment that might otherwise be inappropriately delayed by wholesale market price uncertainty as a consequence of the energy transition.

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

Similar to how the market price settings and jurisdictional schemes support reliability in complementary ways, the combination of the two is not likely to result in consumers paying more for reliability. Where jurisdictional schemes award support through competitive tender processes, the revenue required from the jurisdictional scheme would be replaced by market-based revenue when the market price settings are amended. The CIS and NSW long-term energy service agreement (LTESA) schemes are specifically designed to work with market prices and NEM reliability frameworks. The CIS is designed to ensure that new capacity enters Australian energy markets with limited to no impact on electricity market functions and associated rules. The Commission notes the CIS consultation paper identified the Commission's market price settings rule change as applying to projects supported by the CIS.[21]

The Commission has considered the expansion of the CIS, announced on 23 November 2023, in making this final determination and rule.[22] While the quantum of investment supported by the CIS will increase, the Commission considers the expanded CIS will remain fundamentally complementary with efficient market price settings. In particular:

- The expanded CIS will involve six-monthly tenders through to 2027 while the final rule will progressively increase the MPC and CPT to reach the level necessary by 1 July 2027. This is in expectation of long-term reliability challenges and investment needs beyond 2028. The expanded CIS will play a beneficial role in supporting new investments as the market price settings progressively increase and ensuring capacity is available to address thermal retirements when they occur.
- The market price settings provide the same price signals for all candidate investment technologies as well as technologies currently in the market. The Commission considers the strong technologically-neutral signals enabled by the final rule will enhance investment, operations, and retirement decisions, supporting efficient outcomes for the wider market over the long term. The strong incentives for investment provided by the CIS in contrast will be limited to zero emissions generation and storage.

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

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

- removing the 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
- supporting reliability by being set at a level that provides sufficient financial incentives for thermal generation to continue generating and for ongoing battery participation
- supporting 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 to better advance the interests of consumers compared to the Panel's recommended APC of $500/MWh. 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 that there would

21 DCCEEW, CIS public consultation paper - August 2023, p. 6.

22 On 23 November 2023, the Australian Government announced an expansion of the Capacity Investment Scheme (CIS) to target 9 GW of dispatchable capacity and 23 GW of variable capacity nationally – for a total of 32 GW nationally.

be excessive risks of thermal generator withdrawal and AEMO intervention under a $500/MWh APC, as recommended by the Panel, if there was an APP during the rule change period.

The Commission considers its final rule to be as low as possible while still being set at a level that is likely to be effective. An APC at $600/MWh 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 an APC at $600/MWh will allow for greater price volatility to more effectively signal and enable the charging and discharging of storage required to support reliability during an APP.

The Commission does not consider a lower APC 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
- higher compensation payments would be passed through to consumers following an APP event and cannot be proactively managed through standard hedging practices.

The Commission understands the Panel is currently considering indexation of the APC as part of its form of reliability standard review.[23] The Commission has therefore deferred any consideration of indexation or other changes to the APC.

1.6 Stakeholder feedback has shaped our decision

The Commission's decision has been shaped by stakeholder submissions to our consultation paper and draft determination. 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 A.

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

1.6.1 Submissions to the consultation paper

The Commission's draft determination was informed by 17 submissions received to the consultation paper published on 11 May 2023.[24]

Of the 17 submissions that were made,[25]11 stakeholders supported the Panel's proposed MPC and CPT.[26] Four were opposed,[27]and two were non-committal or discussed other issues.[28]

While there was majority support, stakeholder views were split. Market participants and other stakeholders supported the rule change, while consumer advocates were generally opposed. Consumer advocates had a range of concerns about the cost impact arising from the Panel's recommendations. These included:

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

24 A full set of submissions are available on the project web page at: https://www.aemc.gov.au/rule-changes/amendment-market-price-cap-cumulative-price-threshold-and-administered-price-cap#:~:text=Rule%20Change%3A%20Open&text=sets%20the%20MPC%20and%20CPT,consistent%20with%20its%20current%20value.

25 Submissions to the consultation paper: Australian Energy Council (AEC), The Australian Financial Markets Association (AFMA), AGL, Australian Aluminium Council, Australian Energy Markets Operator (AEMO), Shell Energy, Snowy Hydro, Engie, Public Interest Advocacy Centre (PIAC), Energy Users Association of Australia (EUAA), SA Department of energy and mining, St Vincent De-Paul, Origin Energy, Energy Consumers Australia (ECA), Hydro Tasmania, Telstra, EnergyAustralia.

26 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.

27 Submissions to the consultation paper: ECA, p. 1; Australian Aluminium Council, p. 1; PIAC, p. 1; EUAA, p. 1

28 Submissions to the consultation paper: St Vincent DePaul, p. 1; Telstra, pp. 1-2.

- 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.[29]
- 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.[30]
- 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.[31]

In making its draft rule, the Commission addressed each consumer advocate concern with additional short and long-term analyses to quantify the cost and reliability impact of increasing the MPC and CPT relative to maintaining existing arrangements. The Commission also engaged Houston Kemp Economists to assess the relationship between higher market price settings and jurisdictional and commonwealth reliability schemes.

1.6.2 Submissions to the draft determination and rule

Thirteen submissions to the draft determination were received.[32] A clear majority supported the Commission's draft rule to increase the MPC and CPT, and maintain the APC.

- All submissions supported the draft rule MPC and CPT except for the Public Interest Advocacy Center (PIAC) and private individual Russell Petch.
- Snowy Hydro opposed the draft rule's APC.

Issues raised by these stakeholders are summarised below. The Commission considered all stakeholder submissions carefully in making its final decision. Specific responses to each material issue are provided in relevant sections of this final determination. The Commission responds to all other issues raised in stakeholder submissions in Appendix E.

- Snowy Hydro supported the draft rule MPC and CPT. However, Snowy Hydro considered the APC should only be increased once existing contracts have been able to run off to avoid impacting the value of existing contracts. Snowy Hydro considered the APC should be progressively increased over the review period consistent with the change to the MPC.[33]
- PIAC identified a range of issues with the Commission's draft rule MPC and CPT. PIAC considered:[34]
  - There is insufficient evidence that consumers would value any resulting increase in reliability sufficiently to support paying the increased costs.
  - No reliability gap over the rule change period had been identified to justify an increase in the settings. PIAC noted that AEMO's ESOO did not show a reliability gap against the reliability standard over the rule change period once all expected government-supported investments were accounted for.

29 Submission to the consultation paper: Australian Aluminium Council, p. 2.

30 Submission to the consultation paper: ECA, pp. 1-4.

31 Submission to the consultation paper: PIAC, p. 9.

32 Submissions to the draft determination: Australian Energy Council (AEC), The Australian Financial Markets Association (AFMA), AGL, Australian Aluminium Council, Australian Energy Markets Operator (AEMO), Clean Energy Council (CEC), Clean Energy Investor Group, Energy Australia, Russell Petch - private individual, Shell Energy, Snowy Hydro, Engie, Public Interest Advocacy Centre (PIAC).

33 Snowy Hydro, submission to the draft determination, p. 3-4.

34 PIAC, submission to the draft determination, p. 5.

- The market price settings should be set explicitly recognising financial support from jurisdictional schemes. PIAC considered a lower MPC was warranted to account for the support provided by the CIS and other jurisdictional schemes.
- The market price settings are no longer fit for purpose and should be set on a regional and technology-specific basis.

The Commission has carefully considered Snowy Hydro, PIAC, and Russell Petch's concerns in making its final determination. Chapter 2 sets out the Commission's detailed response to PIAC's and Snowy Hydro's material concerns and proposals. Other issues raised are addressed in Appendix E.

2 The final rule will contribute to the energy objectives

2.1 The Commission must act in the long-term interests of energy consumers

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.[35]

For this rule change, the relevant energy objective is the national electricity objective (NEO):[36]

> to promote efficient investment in, and efficient operation and use of, electricity services for the long-term interests of consumers of electricity with respect to:
>
> (a) price, quality, safety, reliability and security of supply of electricity; and
>
> (b) the reliability, safety and security of the national electricity system; and
>
> (c) the achievement of targets set by a participating jurisdiction—
>
> (i) for reducing Australia's greenhouse gas emissions; or
>
> (ii) that are likely to contribute to reducing Australia's greenhouse gas emissions.

The Commission considers its final rule to advance the NEO as it promotes efficient investment in, and efficient operation and use of, electricity services for the long-term interests of consumers of electricity. The Commission has made a more preferable final rule that better contributes to achieving the NEO than the rule change proposed by the Reliability Panel.

This chapter sets out the Commission's reasons for this view and responds to several issues raised by stakeholders in response to the Commission's draft determination.

2.2 Increasing the MPC, CPT, and maintaining APC advances the NEO when assessed against our criteria

The Commission has considered the issues raised in the rule change request and stakeholder submissions against the five assessment criteria outlined below in making its final rule.

- **Delivering efficient levels of reliability:** The Commission has considered whether its final rule will enable the reliable provision of energy to consumers at an efficient cost over the long term.
- **Maximising outcomes for consumers**: The Commission has considered whether its final rule appropriately balances costs and benefits for consumers, particularly looking at the benefits of achieving reliable outcomes compared to the costs of increasing the reliability settings.
- **Enhancing market efficiency:** The Commission has considered whether its final rule will promote:
  - efficiency, particularly across the investment and planning time frame. A key element of this is that increasing the market price settings is likely to deliver the required investment.
  - efficient outcomes through competition by providing incentives rather than relying on directions and obligations.

35 NEL s 88(1).

36 The NEO was updated on 21 September 2023 with the introduction of the Statutes Amendment (National Energy Laws) (Emissions Reduction Objectives) Act 2023. We have applied the updated NEO in this final determination, in accordance with that Act and our emissions guidance. This is a change from the draft determination which referenced the old NEO.

- **Principles of good regulatory practice:** The Commission has considered whether its final rule:
  - will promote predictability and stability in the regulatory framework for stakeholders.
  - will interact constructively with other reforms underway.
  - appropriately balances systemic final risk and market efficiency considerations.
- **Emissions reduction:** The Commission has considered whether this final rule will efficiently contribute to achieving government targets for reducing, or that are likely to reduce, Australia's greenhouse gas emissions. [37]

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.[38]

The Commission has carried out a regulatory impact analysis to evaluate the impacts of the various policy options against the assessment criteria. Appendix B outlines the methodology of the regulatory impact analysis.

The rest of this section explains why the final rule best meets the NEO, including the recent amendment that includes emissions reduction considerations and promotes the long-term interest of consumers assessed against the criteria.

2.2.1 The Commission's final rule will deliver efficient levels of reliability

The final 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 to support the investment required to achieve efficient levels of reliability. That is, the market will not provide sufficient revenue to support the new investment needed to achieve the reliability standard in the long-term unless the MPC and CPT are increased. In the absence of intervention, this will lead to higher levels of unserved energy and costs for consumers. Chapter 3 presents the analysis that demonstrates the gap between existing settings and those required to deliver efficient levels of reliability.

The MPC and CPT in the final rule address the identified 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 reliability standard balances the costs of unserved energy against the investment and operating costs of power system resources, additional generation, and demand response. The NEM's reliability standard is currently set at 0.002% expected unserved energy in each NEM region in any financial year. This is the level of unserved energy that efficiently minimises the total cost of system operation and investment.[39]

The Commission has considered PIAC's submission to the draft determination that questions whether increasing the market price settings will deliver efficient levels of reliability. PIAC:

37 Note that this criterion has changed from the draft determination, to reflect the recent change to the NEO to include emission reduction targets.

38 The consultation paper of this rule change can be found here.

39 The Panel reviews the reliability standard in its RSS review held every four years and in 2022 confirmed that 0.002% expected unserved energy remains the efficient level of reliability. For further information see Chapter 5 of the RSS review final report which can be found at: https://www.aemc.gov.au/sites/default/files/2022-09/2022%20RSS%20Review%20Final%20Report%20%281%29.pdf

- questioned whether the rule change will bring about an increase in reliability that exceeds what consumers are willing to pay for.[40]
- considered no reliability gap over the rule change period had been identified to justify an increase in the settings.[41]

The NEM's reliability framework, and the Commission's final rule, is designed to provide a level of reliability consistent with consumer willingness to pay. The Panel used the AER's value of customer reliability (VCR) to account for consumer unserved energy costs when determining the reliability standard.[42] The final rule MPC and CPT have been specifically identified as the level required to achieve the reliability standard and minimise long term costs for consumers. The final rule MPC is also below the VCR in each region of the NEM. The final rule settings therefore reflect customer willingness to pay for reliability consistent with promoting efficient investment in, and efficient operation and use of, electricity services for the long-term interests of consumers of electricity.

The Commission understands the Panel's RSS review reliability modelling indicated no reliability gap was expected over the rule change period to 30 June 2028. The Commission is however cognisant of the very significant levels of investment that are required to maintain reliability as the power system transitions and considers the MPC and CPT needs to increase over the rule change period to support this investment by the time it is needed.

The Commission's final rule is for a gradual adjustment in the settings to reach the levels necessary by the end of the rule change period. A gradual adjustment uses the policy flexibility provided by the forecast absence of a reliability gap during the rule change period to realign the MPC and CPT to the necessary levels. Waiting until a material reliability gap is confirmed will require a large disruptive increase in the MPC and CPT which would not provide sufficient time to support efficient investment decision-making. The Commission considers such an outcome is not consistent with promoting efficient investment in the long-term interests of consumers and would lead to higher costs than under the final rule.

Maintaining the APC will support efficient levels of reliability

The final rule's $600/MWh APC will improve reliability outcomes during an APP. This APC is sufficient for all but a few peaking generators to recover their short-run marginal costs during an APP. This provides sufficient operational signals for generators to continue to participate in market dispatch independent of AEMO intervention.

The final 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

40 PIAC, submission to the draft determination, p. 6.

41 Ibid.

42 Further information on the VCR can be found at: https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/values-of-customer-reliability

aspects are determined by different market bodies and delays may make generator cash flows challenging.

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

The final 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 indicates a limited customer cost increase over the review period to 2028 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, the review's modelling also found that consumers will benefit over time as the long-term costs of electricity decrease relative to what they would have been with the existing settings.

The Commission engaged IES to extend the Panel's modelling work to identify long-term outcomes under the existing market price settings compared to a set of options being considered by the Commission. This assessment is presented in Chapter 3 and reveals that:

- investment in new capacity under existing market price settings is lower relative to outcomes under the final rule
- the lower level of investment leads to reliability outcomes worse than the reliability standard
- lower levels of investment results in higher average wholesale market prices over the long term despite the lower MPC.

These outcomes show long-term consumer benefits from the final rule when considered on an energy-only market basis without 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.

As noted in Chapter 1, 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 final rule to increase the MPC and CPT. Houston Kemp identified valuable roles for higher market price settings and jurisdictional investment schemes. Its findings indicate that Commonwealth and jurisdictional schemes complement a higher MPC and CPT and support reliability by addressing current market price uncertainties.

The Commission does not consider that the expansion announced to the CIS on 23 November 2023 changes these outcomes. The expanded CIS will play a beneficial role in supporting new investments as the market price settings progressively increase by ensuring capacity is available to address thermal retirements when they occur. The design of the CIS remains fundamentally complementary to market price settings and seeks to ensure that new capacity enters Australian energy markets with limited to no impact on electricity market functions and associated rules.[43] The Commission therefore retains its view that the most beneficial outcomes for consumers and reliability occur under the Commission's final rule to increase the MPC and CPT.

The Commission notes PIAC's submission to the draft determination which proposed lower market price settings that explicitly incorporate support from jurisdictional schemes.[44] PIAC considered that while jurisdictional schemes 'address a separate and distinct risk to the market

43 DCCEEW, CIS public consultation paper - August 2023, p. 6.

44 PIAC, submission to the draft determination, p. 8-9.

price settings', they still work to marginally remove investor risk and so reduce the need for investment signals derived from the spot price. On that basis, PIAC considered the price caps should be reduced to reflect the value of risk being transferred to commonwealth and state-based schemes.

The Commission has made its final rule based on Houston Kemp's advice that the design of the CIS and jurisdictional schemes are complementary to existing market arrangements. Therefore, the most beneficial outcomes for consumers arise from market price settings that are sufficient to support investment in the lowest cost marginal new entrant technologies required to achieve the reliability standard. In coming to this view the Commission identified:

- The final rule's MPC and CPT are set at the lowest possible level to support the least cost OCGT and demand response marginal new entry required to achieve the reliability standard. PIAC's proposal to reduce the MPC and CPT to recognise any value provided through jurisdictional schemes would lead to settings that are too low to support investment in least-cost technologies. Such an outcome would increase consumer costs by limiting new entry to the higher-cost dispatchable technology options that are supported by the CIS and most jurisdictional schemes. The Commission does not therefore consider this would promote efficient investment and operational outcomes in the long-term interests of consumers.
- The Commission considers a single NEM-wide set of arrangements will deliver the most efficient outcomes in the long-term interest of consumers. PIAC's proposal would see a reliance on jurisdictional schemes that vary across the different regions of the NEM. Relying on varying, and possibly time-limited jurisdictional schemes for reliability in the NEM may undermine investor confidence and certainty necessary to support the investment required to maintain reliability over the transition.

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
- hedging arrangements that would minimise the impacts of high spot prices for consumers.

2.2.3 The Commission's final rule will enhance market efficiency

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

Increasing the MPC and CPT will enhance market efficiency

The final rule will enhance investment efficiency in the NEM. This will be achieved by allowing market prices to rise to a level sufficient to support the lowest cost new entrant necessary to achieve the reliability standard.

The Commission's final rule will enhance operational efficiency by increasing competition for dispatch and increasing 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.

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.

In coming to this view, the Commission has considered PIAC's view the market price settings were no longer fit for purpose and it would be more efficient to set the MPC and CPT on a regional and technology-specific basis:[45] The Commission is unable to consider a structural change to the form of the market price settings as proposed by PIAC in this rule change as the Panel's rule change request was limited to the level of the existing market price settings. The Commission identifies the change proposed by PIAC to be a large departure from the issues raised in the rule change request and would be a major shift in the NEM which would require extensive consideration through a separate rule change request.

The higher APC will enhance market efficiency

The Commission's final rule will improve market efficiency during an APP. An APC at $600/MWh will give the market more headroom to cover high fuel costs and to self-ration 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.

2.2.4 The Commission's final rule applies the principles of good regulatory practice

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

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

Increasing the MPC and CPT supports good regulatory practice

The final rule promotes stability and predictability by progressively increasing the MPC and CPT over the review period. This progressive transition provides stakeholders with the maximum scope to plan and adjust to the higher settings.

The final 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.[46]

45 PIAC, submission to the draft determination, p. 5.

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

Increasing the APC applies the principles of good regulatory practice

The final 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.

In coming to this view, the Commission has considered Snowy Hydro's submission which proposed the APC should only be:[47]

- increased once existing contracts have been able to run off in recognition of the need for adequate notice of the change and the financial impact on energy limited plant, and
- progressively increased over the rule change period consistent with the change to the MPC.

The Commission notes that close to 3 years will have elapsed since the Amending the Administered Price Cap rule increased the APC to $600/MWh and this final rule comes into effect.[48] The Commission considers three years to be a sufficient time for market participants to adjust their contracting positions and strategies prior to the rule's commencement.

The Commission particularly considers maintaining the APC at $600/MWh would enhance stability, confidence, and certainty in the market. Allowing the APC to reset to $300/MWh and progressively increasing it in line with the MPC over the rule change period as proposed would:

- create excessive market uncertainty for those participants who have adjusted their contracting strategies to a $600/MWh APC, and
- expose the market to an unacceptable level of risk associated with an APC that will remain materially too low for a period as it increases in line with the MPC.

The Commission considers the certainty and predictability of maintaining the APC at $600/MWh is consistent with the principles of good regulatory practice and promotes the NEO.

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

The Commission considers the final rule will contribute to achieving the NEO through likely reducing emissions, as the final 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 final 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.

The final rule is consistent with promoting the achievement of targets set by jurisdictional and Commonwealth governments for reducing Australia's greenhouse gas emissions. The Commission considers the final rule works collaboratively with jurisdictional reliability and energy schemes to deliver the firming generation needed to support reliability in a decarbonised NEM. The Commission has formed its view considering:[49]

47 Snowy Hydro, submission to the draft determination, p. 4.

48 The APC rule change came into effect on 17 November 2022.

49 The Commonwealth and jurisdictional schemes considered by the Commission are consistent with the government schemes listed in Table 2.1 of the Targets Statement which can be found here:https://www.aemc.gov.au/sites/default/files/2023-09/AEMC%20Emissions%20targets%20statement%20-%20final%20guide%20September%202023.pdf

- Houston Kemp's comprehensive review of the jurisdictional schemes in place or proposed to apply in New South Wales (NSW), Victoria and Queensland. We have also considered the Capacity Investment Scheme (CIS), proposed to be implemented by the Commonwealth.
- The Reliability Panel's market modelling, which was utilised by the Commission in this rule change, incorporated the NSW Electricity Infrastructure Roadmap, Victorian Renewable Energy Target, Tasmanian Renewable energy target, and Queensland renewable energy target investments.

In the short term, the final 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 limited 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 percent 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.

2.3 Application in the Northern Territory

In developing the final 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.[50]

The final 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.[51]

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

50 *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*.

51 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 The final rule will progressively increase the MPC and CPT

Box 1: The Commission's final 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 final rule:

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

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 and expensive generators, that do not operate very often, are needed to meet demand. The MPC and CPT together define the limits of scarcity pricing, and the financial incentives available from the market to support investment.[52]

The MPC and CPT share a common purpose. Together they 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.

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.[53] The Panel's work included detailed time-sequential Monte Carlo price-dispatch modelling of market outcomes over the rule change period and optimisation to identify candidate efficient MPC-CPT combinations. The Commission has leveraged these models and data sets in making our final rule.

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

52 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.

53 Full details of the Panel's modelling can be found in the accompanying IES modelling report. Further details can be found at: https://www.aemc.gov.au/market-reviews-advice/2022-reliability-standard-and-settings-review

- 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 also 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.
- 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 for candidate new entrant technologies consistent with achieving the reliability standard.

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 (IASR), which specifies the inputs, assumptions and scenarios that AEMO proposes to use in its 2023-24 forecasting and planning activities, including the 2024 ISP.[54]

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 final rule relative to outcomes if the 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 Victoria, South Australia, Queensland and Tasmania with price distributions benchmarked against historical outcomes
- assess the final rule's impact on contract market outcomes.

Further details of IES's assessment and modelling for the rule change can be found in its modelling report published alongside the draft determination.[55]

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

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 new entrants to achieve the reliability standard over the rule change period.

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

54 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.

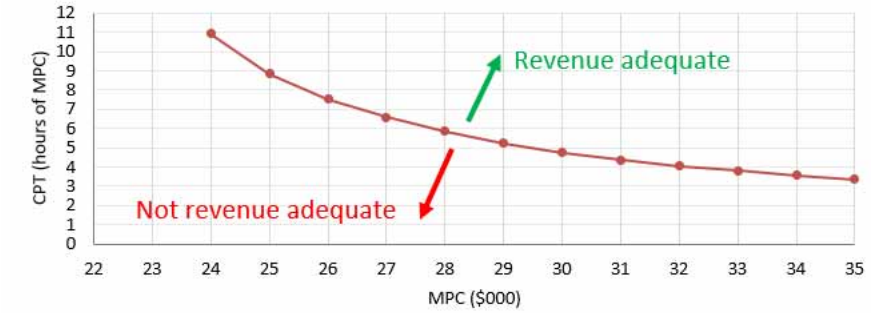
55 IES's draft modelling report can be found at: https://www.aemc.gov.au/rule-changes/amendment-market-price-cap-cumulative-price-threshold-and-administered-price-cap

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 therefore lies 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

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

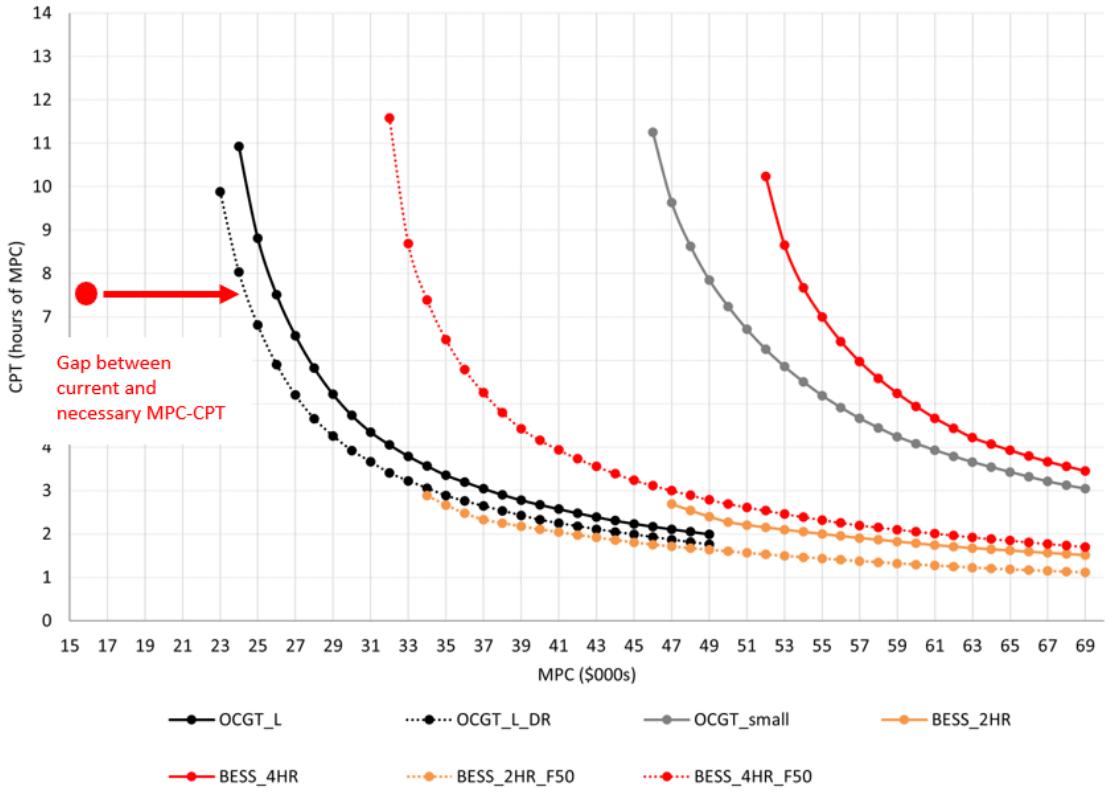
The Commission has confirmed the gap between the existing settings and those required for market prices to support the lowest cost marginal new entrant required to achieve the reliability standard level of 0.002% expected unserved energy.

The Commission considered the relative position of the updated MPC-CPT frontiers for each candidate new entrant technology to confirm this gap. The gap between the existing MPC-CPT and the lowest-cost new entrant efficient frontier for the base case updated assessment is identified in Figure 3.2 below.

These results confirm 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: Gap between current and necessary settings for candidate new entrant technologies



Source: IES - AEMC
Note: Efficient frontiers reflect the updated base case frontiers for each candidate technology.

The Panel recommended an MPC-CPT corresponding to the lowest-cost new entrant technology in NSW to minimise cost impacts over the rule change period.[56] The Panel identified a large OCGT in combination with demand response as the lowest cost option for delivering 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. Figure 1.2 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.[57] 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.[58]

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 which were significantly lower than 2022 FCAS prices. To test the impact of higher FCAS prices and revenues on the MPC-CPT required to support a marginal new entrant battery, the Commission modelled the significant lift in FCAS prices seen in FY2022 as an additional sensitivity.[59]

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

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

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

59 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.

The outcome of this FCAS sensitivity assessment is shown in Figure 3.2 as the BESS_2HR_F50 and BESS_4HR_F50 frontiers (dashed) which remain well above the OCGT and demand response frontier. While the higher FCAS prices seen in 2022 improve the revenue situation for battery technologies, outcomes support the Commission's view that FCAS revenue potential will not lead to two or four-hour batteries becoming the lowest-cost new entrant technologies in this rule change period.

Box 3: Approach to including new entrant demand response (DR).

Increasing the MPC and CPT also increases the incentives for DR to reduce consumption during supply scarcity conditions. The Commission's final rule incorporates the economic value of the expected increase in DR associated with the higher MPC. The final rule was therefore set based on a portfolio of OCGT and DR.

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

3.3 The final 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:

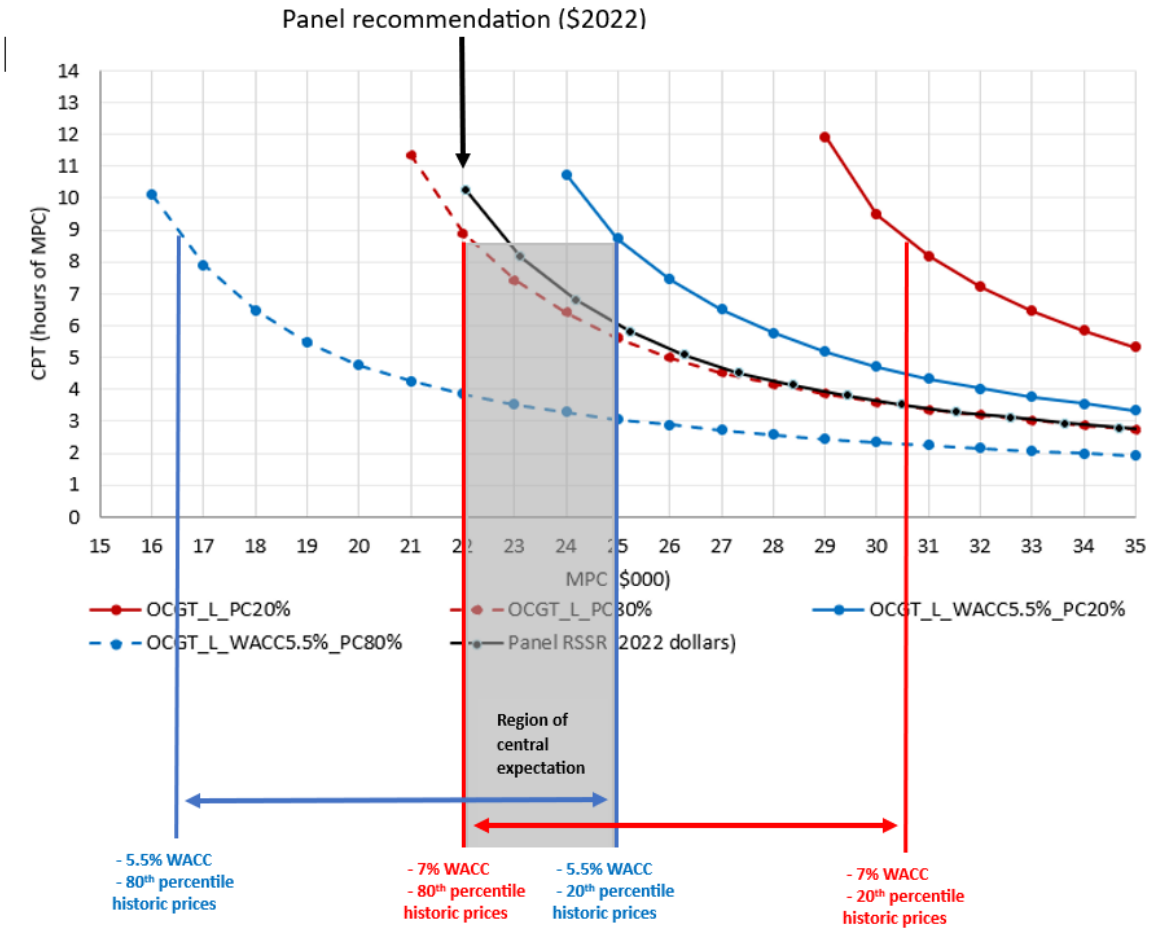
- **Non-reliability period market revenue -** The revenue earned by a new entrant outside reliability periods reduces the MPC-CPT that is required for the new entrant to recover its costs during reliability periods.[60] Non-reliability period revenue is highly variable depending on market conditions. 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 rates over the rule change period. A 7% cost of capital (consistent with AEMO's upcoming ISP) may reflect more robust future economic outcomes.[61]

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

61 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 efficient frontier used to make 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 final 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 final 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 final rule than would be the case if the final rule was biased to the high end of the candidate range.

The final 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 to be 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.

3.4 The final rule balances cost, market efficiency, and financial risk while also enhancing opportunities for long-duration storage

The Commission's final 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 location on the frontier affects the balance of efficiency 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 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').[62]

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.[63] 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 an increase in the frequency of resulting APP events. This reduces incentives for investments that can provide a prolonged response during extended periods of supply scarcity.

62 Reliability Panel, 2022 reliability standard and settings review - final report, p. 76.

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

The Commission notes the Panel's extensive stakeholder engagement on the issue of systemic risk management in forming this view. The Commission also notes the Panel's approach to managing the potential for systemic risk from a higher MPC-CPT by:[64]

- 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 balanced its intentions to encourage longer storage duration with the potential increase in financial risk faced by market participants.[65] The Panel considered 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.

3.5 The final 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 final rule. Our assessment shows that the final rule minimises consumer cost impacts over the rule change period while also providing long-term consumer benefits relative to outcomes under 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 section presents results from the following two assessments:

- An assessment of consumer cost impacts over the rule change 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 the existing MPC-CPT. This is a long-run 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 final rule MPC-CPT.

3.5.1 The final rule will cause a limited increase in consumer bill costs over the rule change period

The Commission used IES's wholesale cost model to evaluate the electricity wholesale and hedging cost increases that arise due to the final rule.[66] The Commission considers that the increase in wholesale and hedging costs, shown by this modelling, is likely to be minor relative to

64 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.

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

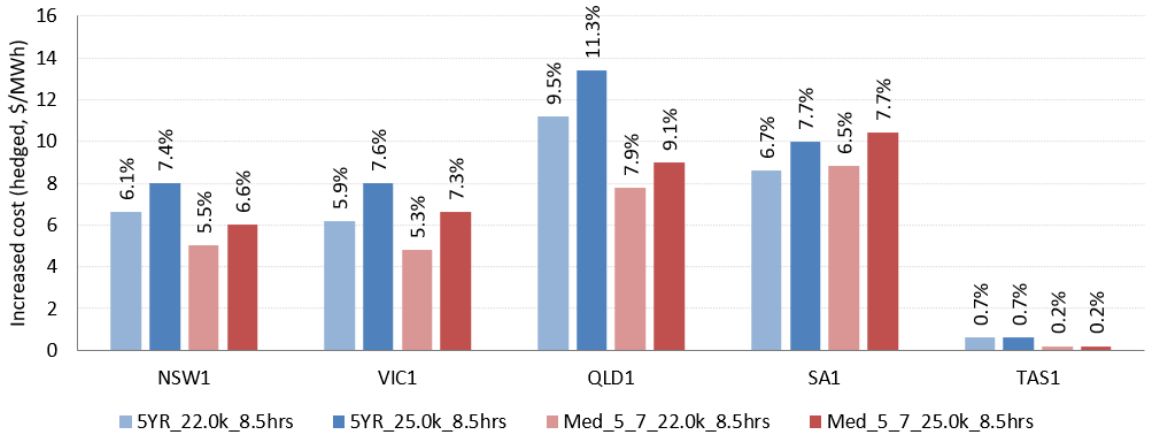
66 IES's consumer cost assessment model considers increases in energy settlement and hedging costs of a prudent retailer which selects the hedging level that minimises the variance in cost outcomes.

potential changes from international fuel prices, network charges and other cost movements. This section summarises these findings, with additional information available in IES's modelling report.

The Commission has updated and extended IES's modelling approach, used in the RSS review to:

- to cover each region of the NEM
- use a more representative retailer demand profile for settlement outcomes
- re-profile market price traces to align volatility and price levels with market expectations over the rule change period.[67]

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



Source: IES - AEMC

To provide a comprehensive understanding of possible outcomes, price impacts 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 $22,000/MWh and $25,000/MWh with a CPT of 8.5 hours at MPC as identified in the previous section.

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

Modelled results show an increase in consumer costs across all mainland NEM regions in 2028. A total average wholesale energy and hedging cost uplift across all NEM regions of $7.3/MWh is observed by 2028 corresponding to a 2.7% increase in average consumer bills after accounting for network and other bill cost components. $2.6/MWh of this increase is related to higher contract premiums given with the rest associated with higher energy settlement costs.[68] [69] This outcome is slightly lower than, but broadly consistent with the Panel's assessment RSS review assessment for NSW.

67 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.

68 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.

69 The 2.7% average uplift in total bill costs is consistent with the higher percentage increase in wholesale electricity and hedging costs indicated in Figure 3.4 as wholesale and hedging costs are approximately 30% of a total consumer electricity bill costs.

The Commission was unable to include the impact of the additional investment supported by the Commonwealth's expanded CIS, announced on 23 November 2023, in the consumer cost impact modelling. The impact of this additional investment may reduce market prices and consumer cost impacts from those anticipated in the Commission's modelling. Actual cost impacts may therefore be lower than those presented here.

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

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

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.[70]

On an energy-only basis, IES identified existing market price settings result in:

- less new entrant OCGT investment relative to the final rule settings
- 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 long-term consumer costs despite the lower MPC and CPT.

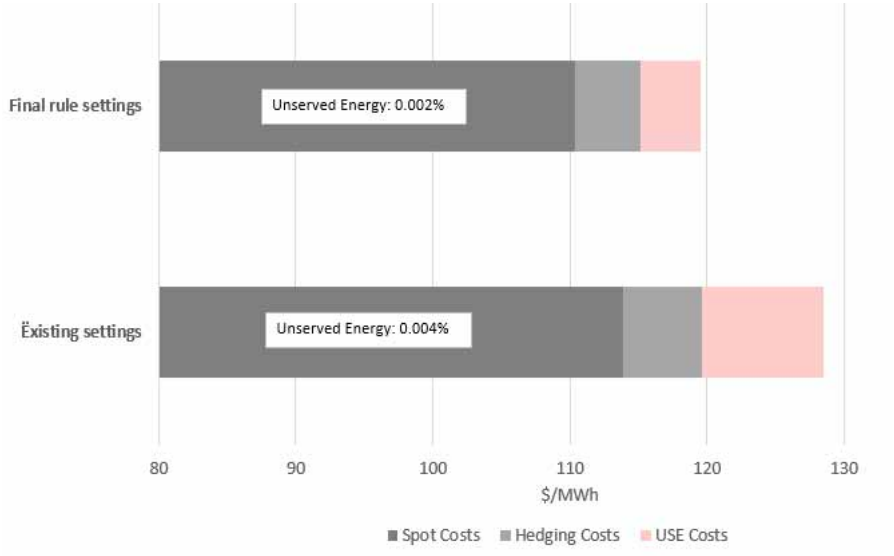
Under existing arrangements, the average level of unserved energy is around 0.004% over the long-term — double the current 0.002% reliability standard. The higher level of unserved energy adds the equivalent of $4.5/MWh to the cost to the residential customer.[71] The overall cost increase associated with existing arrangements, including the cost of additional unserved energy, is $9/MWh, or 7.5%, higher than compared to outcomes under the final rule MPC-CPT. These outcomes are shown in Figure 3.5 below against outcomes under the final rule.[72]

70 Further information on IES's modelling process is available in IES's modelling report. Long-term outcomes in this context reflect a long-run assessment that treats investment as an independent variable. Long-run outcomes are estimated using the power system configuration expected for 2028 and treat marginal new investment levels as an independent variable. The long-run assessment here accounts for investment outcomes but does not reflect a specific future period.

71 This figure is obtained using the AER's 2019 value of customer reliability to assess the monetary value of the additional unserved energy.

72 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 with higher market price settings

The Commission notes stakeholders were interested in the role of jurisdictional schemes and their interaction with the market price settings. The Commission particularly noted consumer advocate views that the market price settings should be left at current levels with jurisdictional schemes primarily supporting additional investment.

The Commission acknowledges the potential for investments supported by jurisdictional schemes to address some or all of the long-term reliability shortfall that occurs under the existing market price settings. The Commission particularly notes the expanded CIS, announced on 23 November 2023.[73] The advice to the Commission from Houston Kemp however indicates that the long-term costs of addressing reliability through jurisdictional reliability schemes alone are likely to be higher than via jurisdictional schemes and the CIS together with higher market price settings. The Commission does not consider the expansion of the CIS to alter this outcome and notes the beneficial role it will play in supporting new investments to address thermal retirements as the market price settings progressively increase over the rule change period.

While jurisdictional scheme-supported investments will likely reduce market costs and unserved energy, relative to the modelled case presented above, consumers will bear additional, higher costs, via the cost recovery mechanism used by the relevant jurisdiction.[74] This is due to the jurisdictional schemes focusing on supporting investment in higher-cost technologies, such as energy storage, and excluding investment in other technologies, such as gas. In contrast, the market price settings are set consistent with lowest-cost technologies, being OCGT entering together with DR.[75]

73 This scheme's expansion will underwrite projects to deliver 9 GW of clean dispatchable capacity and 23 GW of variable renewable capacity nationally by 2030.

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

75 The Commission notes that the expanded CIS will be funded from the Commonwealth budget funds rather than directly from consumer electricity bills. The ultimate cost of the scheme will however remain with consumers via the taxation system.

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
- maximise the likelihood that market-based investment signals will be effective for delivering investment to meet the reliability standard
- reduce the risk of overbuilding reliability-related capacity as there is less reliance on administrative decision-making to deliver investment
- 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 final rule will deliver long-term consumer benefits, and is consistent with advancing the NEO, relative to retaining the existing MPC-CPT.

3.6 The final rule enhances contract market support for investment

The Commission has identified that the final 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 that is set too low.

The Commission particularly notes Snowy Hydro's submission to the consultation paper which observed:[76]

> 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.

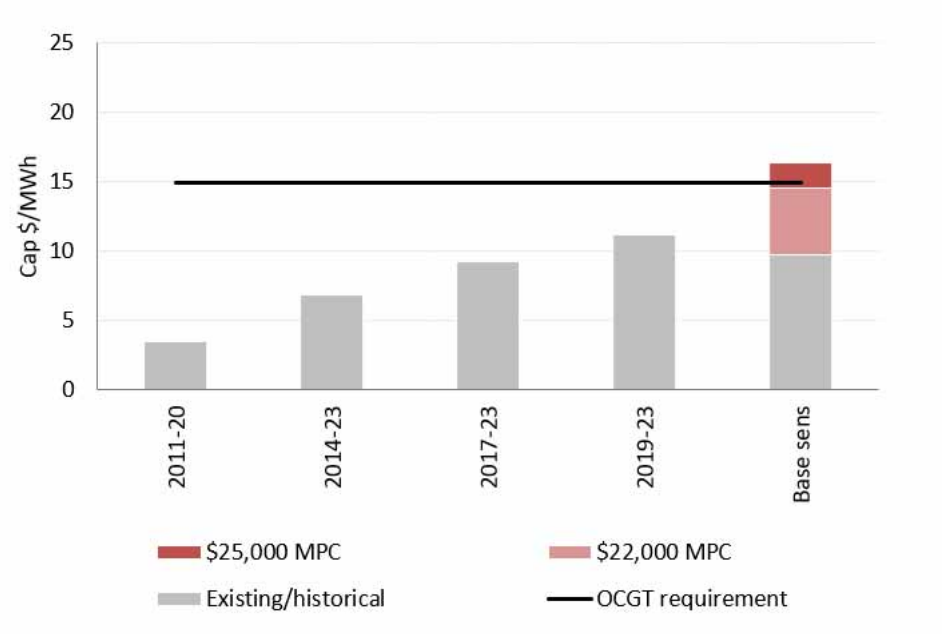
The adequacy of the existing MPC can be assessed against the level required for market prices to support a new entrant OCGT in NSW, as the region with the greatest reliability risk during the rule change period.[77] The adequacy of the final rule's efficacy can be assessed in the same way.

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

77 In addition to supporting new investment, the MPC also supports existing market participants and informs operating and retirement decisions.

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 to 5 years against the level required for OCGT new entry.

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 final rule indicate a $22,800/MWh MPC is sufficient for new entrant OCGT in NSW.

The Commission observes that these outcomes align with the finding that the existing settings are too low to support 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. 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 although we also note that reliability may have been less of an issue over this timeframe.

3.7 On balance, the final rule supports emission reduction in the NEM

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

The final rule to increase the MPC-CPT may affect emissions in the NEM 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 contributing to meeting emissions reduction targets
- 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. To illustrate the limited direct emissions produced by marginal new entrant OCGT, the emissions associated with 500 MW marginal new entrant gas would contribute less than 0.15% of the total emissions in the NEM in 2022. It should also be noted that the final rule's settings will not solely lead to an increase in gas investment but see a mix of new entrants which includes zero-emission plant. New entrants resulting from the higher settings will include demand response as will batteries (jointly supported by commonwealth and jurisdictional schemes). The Commission therefore considers the direct emissions produced by the new entrant gas plant that enters in response to the higher settings will be immeterial in the NEM-wide context.

The most significant emission impact from the final 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 The final rule will increase the APC

Box 4: The Commission's final 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 final rule (final rule) of an APC at $600/MWh is sufficient, given the expected effects of inflation over the rule change period
- the final rule will limit the extent of AEMO intervention and compensation requirements during APP events
- the final rule provides more room for price volatility needed to encourage storage participation during an APP
- the final rule effectively manages systemic financial risk
- consumers are unlikely to be materially affected by the final 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 final 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
- 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 when volatile or high prices reach the CPT, as defined by the NER. 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 final determination to make a more preferable final 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,[78] as well as the analysis performed for the *Amending the administered price cap rule change*.[79]

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 short-run marginal cost coverage and consumer cost impacts
- the Panel's RSS review modelling of price outcomes during APP events.

4.2 The final 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 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.

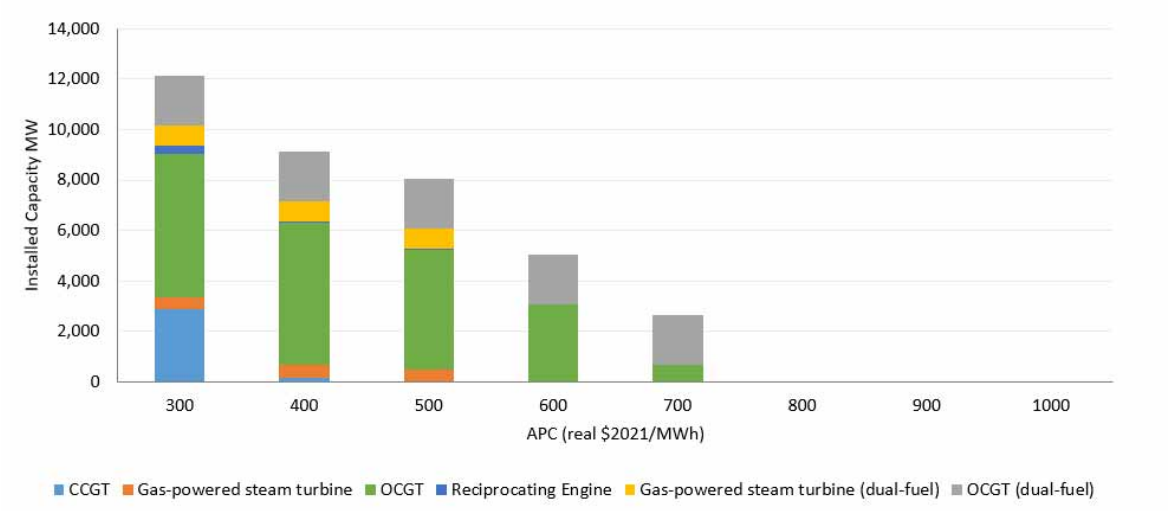
The Commission's analysis indicated a significant amount of additional thermal generation capacity with a short-run marginal cost between $500/MWh and $600/MWh in high fuel price scenarios.[80] Figure 4.1 shows the total installed thermal capacity that would require compensation during an APP event consistent 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.

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

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

80 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.

Therefore, the Commission 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 final 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. [81]

An APC of $600/MWh will 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%.[82]

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 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.

81 This is different to the MPC and CPT, which are annually indexed by inflation to retain their real value.

82 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).

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.[83] 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:

- 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.

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

- 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.[84]

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.[85]

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).

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.[86]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.[87]

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

85 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

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

87 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.

- 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%.[88]

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.[89] 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 final 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[90] and the Panel[91] 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:[92]

- 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.[93]

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.

88 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.

89 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.

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

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

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

93 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.

4.6 The final 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 final rule APC reduces the financial exposure from the MPC of $22,800/MWh in 2028 to $600/MWh, which is a $22,200/MWh, or 97.4%, reduction. Therefore, the APC prioritises market stability by removing scarcity pricing and the investment signals scarcity pricing 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 final 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.

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.[94]The Commission's analysis indicated that:[95]

- 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 a retailers hedge payout increases while compensation costs decrease as the APC increases.

The Commission notes 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.

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

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

95 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.

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.

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.*[96]

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.[97]

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.

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:[98]

- 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.

96 *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*

97 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.

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

The Commission considered the Panel's request for a fast-track process but 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 $15,400/MWh and CPT of $1,359,100 for the review period from 1 July 2025 to 30 June 2028 would:[99]

- 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

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:

99 These were the MPC and CPT that applied during the Panel's RSS review.

- 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 on the consultation paper 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 the draft rule determination.

On 14 September 2023, the Commission published a draft determination including a draft rule. The Commission's draft rule was to progressively increase the MPC and CPT, and maintain the APC, which is mainly consistent with the Panel's rule change proposal but updated to 2022 dollars. Submissions on the draft determination and draft rule closed on 26 October 2023.

The Commission received 13 submissions on the draft rule determination. Issues raised in submissions are discussed and responded to throughout this final 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 final determination and more preferable final rule (final 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
- maintaining 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.

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

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 final 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 final rule.

- The final 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 final 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 final 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 short-run marginal cost 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. Similar 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.

B.4 Emission impacts

In light of the recent change to the NEO to include emissions reduction considerations, the Commission has considered the final rule's direct and indirect emission implications. The Commission considered the emissions impact of the rule on a primarily qualitative basis given very high levels of uncertainty associated with some sources of possible emission impact.

The final rule to increase the MPC and CPT may lead to a small increase in direct emissions relative to outcomes under existing settings that rely on jurisdictional scheme support to deliver new investment. The direct emissions from OCGT reliability new entrants are however limited and would only occur if new entrant gas plant is built due to the rule. The Commission notes that although the settings provide support for such investment, the level of investment in OCGT is unclear given the uncertain investment environment. Information presented in Chapter 3 demonstrates the limited direct impact of the rule change relative to NEM emissions.

Indirect emission impacts from the rule change were considered likely to be far more material to meeting NEM emissions reduction targets than direct emission impacts. The Commission identified the:

- potential for the rule change to delay the retirement of thermal coal generators. The Commission however considered this to be a highly speculative outcome given the large number of other material considerations that are likely to drive thermal coal retirement decisions.

- additional intermittent renewable generation that could be reliably integrated into the NEM given additional firming generation investments that would be supported by this rule change.

Both of these impacts were considered qualitatively. The Commission considered the emissions reduction resulting from the additional intermittent renewable generation that could be reliably integrated into the NEM would more than offset any increase in emissions from delayed thermal coal retirement.

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.[101]

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.

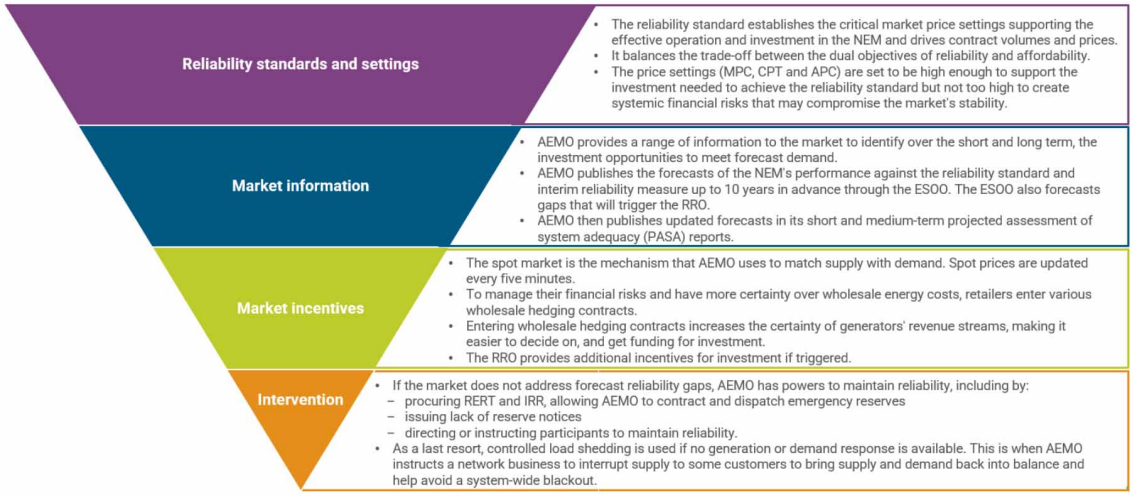
The market price settings, which are the subject of this rule change, define the limits of scarcity pricing, and the financial incentives available from the market to support investment. They are set at a level consistent with the NEM's reliability standard. The reliability standard (the standard) in 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.[102]

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.

101 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.

102 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.[103]

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.

103 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

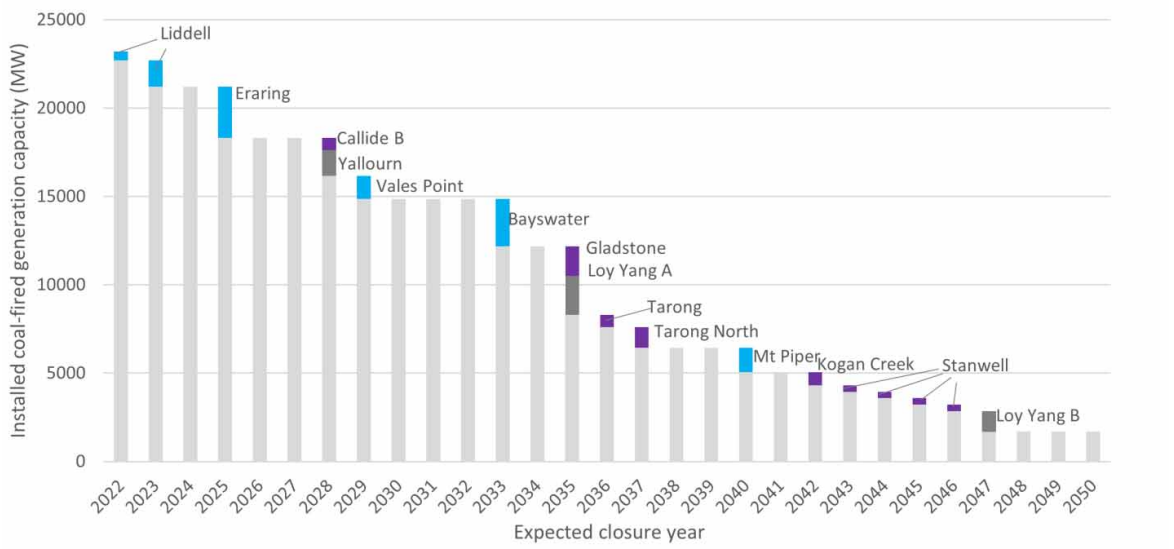
C.2.1 The NEM is undergoing a transition requiring new investment to replace retiring generation

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 C.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.[104]

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

- The Victorian renewable energy target is to achieve 50% of electricity generated from renewable sources by 2030.[105]
- 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.[106]
- Tasmanian Renewable Energy Action Plan to produce 200% renewable energy by 2040 double existing renewable capacity to 8GW by 2035.[107]
- The SA renewable energy target is to achieve 100% net renewables by 2030.[108]

The Commonwealth government is currently designing a Capacity Investment Scheme (CIS).[109] 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.[110]

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.

105 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.

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

107 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.

108 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

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

110 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

D Legal requirements to make a rule

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

D.1 Final rule determination and more preferable final rule

In accordance with section 102 of the NEL, the Commission has made this final rule determination for a more preferable final rule in relation to the rule proposed by Reliability Panel.

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

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

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

D.2 Power to make the rule

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

The more preferable final 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 final rule
- the rule change request
- submissions received during first round consultation
- submissions received during second round consultations
- the Commission's analysis as to the ways in which the more preferable final rule will or is likely to contribute to the achievement of the NEO
- the application of the more preferable final rule to the Northern Territory.

There is no relevant Ministerial Council on Energy (MCE) statement of policy principles for this rule change request.[111]

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:[112]

1. the national electricity system
2. one or more, or all, of the local electricity systems[113]
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.[114] 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.[115]

The Commission's final determination in relation to the application of the more preferable final rule to the Northern Territory is set out in Chapter 2.

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

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111 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.

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

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

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

115 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.

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

D.7 Review of operation of the rule

The more preferable final 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

E Summary of other issues raised in submissions

Table E.1: Summary of other issues raised in submissions

Stakeholder	Issue	Response
Australian Energy Council	The AEC would like to raise is how the Reliability Panel's recommended MPC and CPT have been escalated from 2021 dollars to 2022 dollars. While the differences are somewhat trivial and it appears the AEMC is merely rounding the actual indexed values (ie, 2022 dollars) to whole numbers, the AEC believes the Final determination should explain this.	Clauses 3.9.4(e)(1) and 3.14.1(f)(1) of the NER require the MPC and CPT to be expressed to the nearest 100 dollars. The Commission has rounded the actual indexed figure consistent with this requirement. Further information has been added to Chapter 2 to explain.
Energy Australia	Can the Commission elaborate on why the effect on wholesale energy prices might be the highest in Queensland (an increase of up to $13/MWh) yet negligible in Tasmania.	The Commission used Tasmanian and Queensland-modelled prices to assess the rule change's impact on wholesale energy and hedging costs. Modelled prices and levels of price volatility were materially different in Queensland versus Tasmania leading to the difference in assessed consumer costs.
Energy Australia	IES also modelled the effect of adding carbon prices of $20 and $50 per tonne. It is not clear how this relates to the Commission's assessment of emissions impacts, if at all.	The Commission didn't rely on IES's hypothetical assessment of carbon pricing scheme impacts. Results were considered too speculative for use in the final rule.
Energy Australia	The Commission states that its decision should have minimal emissions impact given peaking gas plant operate for less than five per cent of the time. It further states that revised price cap settings may provide some additional incentive to	The Commission has provided information in Chapter 3 indicating that operational GHG emissions from marginal OCGT plants (if any) would be immaterial in the context of NEM-wide emissions. Emission impacts associated with

Stakeholder	Issue	Response
	delay the retirement of thermal generation. The Commission's final determination should provide a quantitative assessment of these outcomes in accordance with its new obligations under the amended National Electricity Objective.	decisions to delay thermal retirement given higher market price settings are highly speculative and also affected by a range of other factors.
Energy Australia	The progressive increase in price settings is below the current modelled cost of the marginal new entrant. The analysis by IES shows that the MPC required to deliver the Reliability Standard now (at the equivalent 7.5 hour cumulative price threshold) is approximately $8,000 below where it needs to be, however, the Commission's draft decision would not see realignment until July 2027.	The Panel's base case reliability modelling indicated no reliability gap was expected prior to 2028. The Commission has therefore elected to use the rule change period for a gradual increase to the level needed by 2028 consistent with meeting the reliability standard. This increase will distribute cost impacts over time, and assist certainty and market stability while ensuring realignment prior to a material gap emerging.
Energy Australia	The Commission should monitor and report on the performance of jurisdictional schemes for the benefit of policy-makers, particularly as revenue sharing 'cap and floor' incentives now appear to be preferred by jurisdictional governments.	The Reliability Panel reports on NEM reliability outcomes in its annual market performance report. The Panel may elect to give consideration to jurisdictional scheme outcomes in future AMPRs.
Russell Petch	An increase in the MPC will not provide any additional capacity but will drive any existing thermal plant out of the market since they are the marginal generators.	The Commission considers increasing the MPC will likely increase the incentive for thermal plant to delay retirement rather than advance it.
Russell Petch	Any increase in the MPC will provide benefits directly to renewable and solar generators when these are bid into the market. Their bidding approach will always be to bid into the market at low prices can do this and be certain of dispatch	The final rule will provide benefits to renewable and solar generators to the extent that their generation provides reliability benefits during supply scarcity conditions. This is consistent with the technology-neutral nature of the market price

Stakeholder	Issue	Response
	since coal and gas plant must always bid in recover their fuel costs. If the new rules are adopted, it would almost certainly benefit renewable plant.	settings and would efficiently reward renewable generations' contribution to reliability.
Russell Petch	The initial reason for setting the market price cap to high levels was to encourage new entrants to enter the market. This has been successful, and number of generators have already entered the market based on the current rules and pricing arrangements.	The Commission understands historic dispatchable generator investment in the NEM have generally needed government support. This is consistent with the Commission's findings that the market price settings are too low to support new solely market-driven investments in marginal plant. The final rule will address this shortcoming to provide market price settings that are fit for purpose given the very large future investment requirements.