



RULE

Australian Energy Market Commission

CONSULTATION PAPER

NATIONAL ELECTRICITY AMENDMENT (CONTINGENCY ARRANGEMENTS FOR FIVE MINUTE SETTLEMENT IMPLEMENTATION) RULE 2021

PROPONENT

Australian Energy Market Operator

5 AUGUST 2021

INQUIRIES

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ABOUT THE AEMC

The AEMC reports to the Council of Australian Governments (COAG) through the COAG Energy Council. We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the COAG Energy Council.

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1 INTRODUCTION

On 30 July 2021, the Australian Energy Market Operator (AEMO) submitted a rule change request to the Australian Energy Market Commission (AEMC or Commission). AEMO seeks to provide contingency options for a potential delay to the implementation of the *National Electricity Amendment (Five minute settlement) rule 2017 (5MS rule)* and the *National Electricity Amendment (Global settlement) rule 2018 (GS rule)* if this is determined to be necessary. AEMO seeks to delay the implementation of these rules if an issue arises that cannot be managed by AEMO for the successful commencement of 5MS and GS soft start on 1 October 2021.

This consultation paper has been prepared to facilitate public consultation on the rule change request and to seek stakeholder submissions.

This paper:

- summarises and provides background to the rule change request,
- identifies issues and questions to facilitate the consultation on this rule change request, and
- outlines the process for making submissions.

AEMO's submission of this Rule change request does not indicate there will necessarily be a delay to the commencement of 5MS and GS soft start. As such, all participants should continue to work towards a commencement date of 1 October 2021 with any delay to be determined as a last resort.

In submitting its rule change request, AEMO has requested that it be subject to the expedited rule making process on the basis that it is an "urgent rule" as defined in the National Electricity Law (NEL). AEMO considers its rule change request meets the requirements of an urgent rule under the NEL as, if not made as a matter of urgency, the inability to implement 5MS could result in imminent prejudice or threat to the effective operation and administration of the wholesale electricity market.

1.1 Key dates

The Commission considers that this rule change request is a request for an urgent rule under the s 96(1) of the NEL for the reasons provided by AEMO, and therefore has decided to use the expedited rule change process for the rule change proposal. Consistent with the timelines and requirements for an expedited rule change process, the key dates in this process are:

- commencement of this rule change process: **5 August 2021,**
- objections to the Commission's decision that the rule change request is a request for an urgent rule (and be subject to the expedited process) to be received by: **19 August 2021,**
- submissions to the rule change request and consultation paper are to be received by: **2 September 2021,** and
- final decision to be published under an expedited process by: **30 September 2021.**

1.2 Submissions to the consultation paper

The Commission welcomes submissions to the consultation paper and has developed a template for submissions, which is available on the rule change project page.

The Commission is seeking feedback on a range of issues set out in detail in chapter 4. The main issues include:

- the appropriate length of delay to 5MS and GS soft start if AEMO's market start notice identifies a need for a delay,
- potential changes to commencement of GS financial start, wholesale demand response and other regulatory reforms,
- the ability to manage risk and re-negotiate contracts for any potential delay including for mid-quarter or start of quarter commencement of 5MS,
- the ability to manage additional risk of summer operations with the commencement of 5MS,
- additional costs to industry of any potential delay,
- the impact of delayed benefits of any potential delay, and
- implications of a delay for other provisions in the National Electricity Rules (NER) or procedures and guidelines managed by AEMO, the AER or the IEC.

The Commission requests that where possible, evidence should be provided to support stakeholder submissions. Any confidential cost information can be treated as confidential and redacted from submissions published on the AEMC's website.

Given the shortened timeframe for this rule change process and the commencement of 5MS and GS soft start scheduled for 1 October 2021, it is important that information from stakeholders is provided as early as possible. The Commission encourages bilateral discussions and welcomes early submissions where possible.

All enquiries on this project should be addressed to Sam Markham at Sam.Markham@aemc.gov.au.

2 DETAILS OF THE RULE CHANGE REQUEST

This chapter outlines the:

- issues raised in the rule change request,
- proposed approach,
- contingency planning and proposed notification,
- potential benefits and drawbacks of the proposed rule, and
- scope of the rule change request.

2.1 Issues raised in the rule change request

The 5MS and GS rules are scheduled to commence on 1 October 2021. In its rule change request, AEMO stated the program to implement these rule changes are complex and high risk. AEMO considers that while the program is currently on track, there remains a risk that issues arise in the final two months that cannot be managed for a successful commencement of 5MS and GS soft start on 1 October 2021. AEMO indicated that the implementation program faces some key risks including the potential for:

- an unexpected significant issue during the 5MS Market Trial, and
- an essential capability issue for participant readiness (without a contingency response).¹

AEMO has identified the essential capability requirements for the successful commencement of 5MS and GS soft start as:²

- generators and Market Network Service Providers are able to submit five-minute offers,
- metering Providers, Metering Coordinators and Metering Data Providers can ensure all essential meters are able to produce, store and deliver five-minute data, and
- AEMO successfully deploys the:
 - five-minute bidding and dispatch solution, including the web bidding interface,
 - metering data management (MDM) solution, and
 - five-minute settlement solution.³

2.2 Proposed approach

In its rule change request, AEMO suggests that three situations may arise:

1. No contingency event occurs that prevents the successful commencement of 5MS and GS soft start. Therefore, no delay would be needed and 5MS and GS soft start commence on 1 October 2021 as currently scheduled.

1 AEMO, rule change request, p. 3.

2 AEMO Five minute settlement and global settlement industry readiness contingency plan, Appendix 2, June 2020. <https://aemo.com.au/-/media/files/electricity/nem/5ms/readiness-workstream/2020/final-industry-readiness-contingency-plan-pdf.pdf?la=en&hash=436740E97E7DBA83FA48BE0804AC5278>

3 AEMO, rule change request, p. 3.

2. A contingency event occurs that can be resolved to allow for a successful market start before the proposed change freeze to be observed from 17 December 2021.⁴ The change freeze is the period where AEMO proposes to not implement major regulatory reforms and system changes to accommodate market participants' lower resource availability when managing summer operations and holiday leave arrangements. A 'short delay' to 5MS and GS commencement would therefore be needed.
3. A contingency event occurs that can only be resolved for 5MS and GS soft start commencement after the proposed change freeze begins on 17 December 2021. An 'extended delay' to 5MS implementation would therefore be needed.

AEMO proposes alternative commencement dates in the two situations where an issue occurs that results in the need for a delay to 5MS and GS soft start. In developing each scenario, AEMO has assumed any alternate commencement of 5MS remains bundled with GS soft start. AEMO has previously engaged with industry participants to determine a change freeze period from 17 December 2021 to 28 January 2022.⁵

In its rule change request, AEMO proposes the following scenarios and alternative commencement dates:

- **Scenario 1—Short delay**

If a contingency event occurs that can be resolved for 5MS and GS soft start to begin prior to the change freeze, AEMO proposes an alternative commencement date of 1 December 2021.

In this scenario, it proposes no change to GS financial start (due to commence on 1 May 2022). AEMO's proposal reduces the time between GS soft start and financial start from a period of 7 months under the current rules, to 5 months.

- **Scenario 2—Extended delay**

If a contingency event occurs that can only be resolved after the start of the change freeze, AEMO proposes two alternative potential commencement dates of 1 February 2022 or 1 April 2022.

In this scenario, AEMO proposes that GS financial start should be delayed beyond 1 May 2022 to provide 5 months between GS soft-start and financial start.

In both scenarios, AEMO proposes:

- An alternative commencement date of 5MS and GS soft start to align with the start of a month. AEMO notes mid-month commencement of 5MS and GS soft-start has not been tested and choosing an alternative date may create additional risk. Further, commencing 5MS with the start of a month has the benefit of avoiding settlement and billing complications.⁶
- Bundling the commencement of 5MS and GS soft-start with reforms that were closely developed with or rely on the system changes from 5MS. AEMO proposes to bundle

4 AEMO Rule change request, p. 4.

5 AEMO, rule change request, p. 4.

6 AEMO rule change request, p. 5.

customer switching, wholesale demand response and electricity retail business to business (B2B) changes with 5MS commencement.⁷

The rule change request also requests that the rule change be considered as an urgent rule under the expedited process in s 96 of the NEL. The Commission's assessment of the request for an urgent rule is set out in section 5.1 of this consultation paper.

AEMO's rule change request does not contain a proposed rule. In the interest of facilitating effective consultation, the Commission has prepared some indicative drafting for a rule to implement a delay. This indicative drafting accompanies this paper and is published on the AEMC's website.

2.3 Contingency planning and proposed notification

AEMO proposes to publish a 'market start notice' by no later than 1 September 2021. AEMO states this notice will:

- notify the AEMC and market whether a contingency event has occurred such that market commencement on 1 October 2021 is not feasible,
- indicate the time required to remedy the issue to allow for a successful commencement of 5MS and GS soft start, and
- recommend an alternative commencement date (likely either 1 December 2021, 1 February 2022 or 1 April 2022).

2.4 Scope of rule change request

AEMO proposes to delay the commencement of 5MS and GS soft start (and depending on the duration of the delay, financial start) if an issue arises that cannot be mitigated for commencement on 1 October 2021. The rule change request does not discuss the merits of 5MS or GS. The Commission reiterates that there was an extensive two-year assessment of the merits of 5MS, and an eight-month assessment of the benefits of GS. Furthermore, an extensive implementation program with AEMO and industry over several years is close to completion. As such, the Commission considers submissions focusing on the merits or otherwise of these rules, or suggesting that 5MS and GS be delayed indefinitely, will be considered out of scope.

⁷ AEMO rule change request, p. 5 and 6.

3 ASSESSMENT FRAMEWORK

This chapter outlines the:

- decision-making framework the Commission must apply to determine whether the rule change contributes to the national electricity objective (NEO),
- proposed assessment framework,
- Commission's option to make a more preferable rule, and
- Commission's option to make a differential rule.

3.1 Achieving the NEO

Under the NEL the Commission may only make a rule if it is satisfied that the rule will, or is likely to, contribute to the achievement of the national electricity objective (NEO).⁸ This is the decision-making framework that the Commission must apply.

The NEO is:⁹

to promote efficient investment in, and efficient operation and use of, electricity services for the longer 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.

3.2 Proposed assessment framework

To determine whether the rule change promotes the NEO, the Commission will assess the rule change request against an assessment framework, which includes the following criteria:

- **Contingency planning and readiness capability** — if a contingency event occurs and a delay to the start of 5MS and GS is required, the minimum time needed to resolve issues for the successful commencement of 5MS and GS soft start.
- **Industry implementation costs** — the extent to which a delay to the start of 5MS and GS could increase costs associated with finalising the implementation of 5MS or GS, or impact participants' delivery of other reforms or usual business operations.
- **Contract market implications** — the effect of a potential delay to the start of 5MS will have flow on impacts for existing and future hedging contracts for energy. This could impact industry risk management capabilities and potentially add costs that could be passed onto consumers.
- **Summer implementation risk** — the level of additional risk associated with commencing 5MS during summer, when the power system must manage additional risks related to increased electricity demand and climatic events, such as bushfires and storms.

⁸ Section 88 of the NEL.

⁹ Section 7 of the NEL.

- **Delayed benefits** — the extent to which a potential delay to the commencement of the 5MS and GS rules would defer the realisation of benefits from 5MS and GS that would flow to consumers.
- **Impact on other reforms** — the effect of a delay to the start of 5MS and GS on the commencement of schedules in other rules which have been made, and other industry reforms that are in the process of being implemented.

3.3 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.

3.4 Making a differential rule

Under the Northern Territory legislation adopting the NEL, the Commission may make a differential rule if, having regard to any relevant MCE statement of policy principles, a different rule will, or is likely to, better contribute to the achievement of the NEO than a uniform rule.

A differential rule is a rule that:

- varies in its term as between:
 - the national electricity system, 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.

The rule change request appears to relate to parts of the NER that currently do not apply in the Northern Territory. However, the Commission will consider as part of this rule change project whether it is necessary to assess the rule change request against additional elements required by the Northern Territory legislation.¹⁰

¹⁰ From 1 July 2016, the NER, as amended from time to time, apply in the NT, subject to derogations set out in regulations made under the NT legislation adopting the NEL. Under those regulations, only certain parts of the NER have been adopted in the NT. (See the AEMC website for the NER that applies in the NT.) National Electricity (Northern Territory) (National Uniform Legislation) Act 2015.

4 ISSUES FOR CONSULTATION

The issues covered in this chapter are:

- contingency planning and readiness capability,
- industry implementation costs,
- financial contract market implications,
- summer implementation,
- delayed benefits,
- implications for GS, wholesale demand response and other regulatory reforms, and
- implications on rule drafting, procedures and determinations.

Stakeholders are also welcome to comment on other aspects of the rule change request or this paper, including the proposed assessment framework.

When commenting on any issues, submissions can be treated as confidential if requested, or confidential information can be redacted from submissions published on the AEMC's website.

4.1 Contingency planning and readiness capability

The implementation program for 5MS and GS soft start is close to completion. As a result, the Commission considers the determination of any potential delay to the commencement of 5MS and GS should primarily be driven by the essential readiness capability. Broadly, this means the Commission only proposes to delay the start of 5MS and GS soft start by the period necessary to ensure successful implementation. In making this decision, the AEMC will take into account AEMO's market start notice, that AEMO intends to issue by no later than 1 September 2021.

The Commission will consider AEMO's market start notice as a key indicator of AEMO and industry readiness for the commencement of 5MS and GS soft start. As such, the Commission intends to apply the following approach:

- **AEMO's market start notice indicates no delay is needed for the commencement of 5MS and GS soft start**—the Commission will make no rule and therefore 5MS and GS soft start will commence as scheduled on 1 October 2021.
- **AEMO's market start notice indicates a short delay is needed for the successful commencement of 5MS and GS soft start**—the Commission is likely to delay the start of 5MS and GS soft start to the date specified in AEMO's market start notice (which AEMO has indicated is likely to be 1 December 2021). The Commission will consider other information that provides strong evidence for a slightly different commencement of 5MS and GS soft start in determining a short delay date.
- **AEMO's market start notice indicates an extended delay is needed for the commencement of 5MS and GS soft start**—the Commission will consider delaying the commencement of 5MS and GS soft start to either 1 February 2022 or 1 April 2022. In assessing these start date options, the Commission will take into account the issues raised in this-chapter.

To ensure all participants have as much time as possible to account for any potential delay, the Commission is likely to primarily rely on AEMO's proposed dates for a short delay (1 December 2021) or an extended delay (either 1 February 2022 and 1 April 2022). If stakeholders have strong evidence for why another date should be considered, they should contact the AEMC for a discussion as soon as possible and include any evidence in submissions.

QUESTION 1: CONTINGENCY PLANNING AND READINESS CAPABILITY

a) Are there any other issue(s), in addition to AEMO's market start notice, the Commission should consider for any potential delay to commencement of 5MS and GS soft start? If so, what issue(s) and why?

4.2 Key trade-offs for 'extended delay' options

If AEMO's market start notice indicates an extended delay is needed for the commencement of 5MS and GS soft start, two dates have been proposed—1 February 2022 or 1 April 2022. AEMO considers any issues would be able to be resolved for 5MS and GS soft start to begin after the change freeze (observed until 28 January 2022). This section describes the key issues and trade-offs between the two proposed dates:

- additional industry implementation costs,
- financial contract market implications,
- summer implementation, and
- delayed benefits.

QUESTION 2: EXTENDED DELAY OPTIONS

a) If an 'extended delay' to 5MS and GS is required, do you have a preference between commencing on 1 February 2022 or 1 April 2022? If so, which date and why?

4.2.1 Industry implementation costs

The implementation program for 5MS and GS soft start is close to completion.¹¹ As 5MS and GS have almost been implemented, the majority of implementation costs associated with 5MS and GS have already been incurred.

If there is a further delay to the commencement of 5MS and GS it may increase industry costs, for example (but not limited to):

¹¹ The original 5MS rule, made in November 2017 provided an implementation period of 3 years and 7 months to implement 5MS, and has been implemented by AEMO and participants since 2018. The GS rule was made in December 2018 and has been implemented in conjunction with the 5MS rule.

- the need to retain IT contractors for longer to test participant's essential capabilities before and after 'go live' of 5MS,
- it may defer participants' implementation of other regulatory reforms or projects.

QUESTION 3: INDUSTRY IMPLEMENTATION COSTS

a) If an extended delay is needed, what is the estimated difference in costs to your organisation between 5MS and GS soft start commencing on 1 February 2022 or 1 April 2022?

4.2.2

Financial contracts market implications

If the start date of 5MS is delayed, it may have implications for the electricity contract market. As one of the primary methods for risk management in the NEM, the electricity contract market enables participants to hedge against the risk associated with wholesale electricity spot price volatility. A high-level explanation of the contract market is presented in appendix B.

Since the 5MS rule was made, contracts have been trading on both the Australian Securities Exchange (ASX) and Over The Counter (OTC) for the period after 5MS is scheduled to commence (currently 1 October 2021). The impact of 5MS on the electricity contract market was identified and explored in the final determination for the 5MS rule, with particular consideration applied to cap products. Under 5MS, cap products have been redesigned to pay-out when the five-minute price exceeds the strike price, instead of the 30-minute price exceeding the strike price.

On 22 March 2021, the ASX listed five-minute cap contracts from Q4 2021. Since then, traded volumes indicate there has been considerable interest. In particular, ASX-traded cap contract traded volumes for Q4 2021 and Q1 2022 in NSW and Q1 2022 in Victoria were above 1,000 MW (Figure 4.1). However, cap contracts have been available since October 2019 when the Australian Financial Markets Association (AFMA) finalised a standard OTC contract for five-minute caps.

With 5MS due to commence next quarter (Q4 2021), considerable trading has taken place for all contracts on a five-minute basis. Swap are based on the average spot price for the contract period and therefore will have a similar value under 30-minute settlement and 5MS. However, cap contracts are based on a strike price and 5MS may result in more volatile spot prices when not averaged across a 30-minute period. Therefore, cap contracts would likely be less valuable for any period where 5MS may be delayed.

Figure 4.1: ASX trade volumes for cap contracts, Q4 2021 to Q2 2022



Source: AEMC analysis of ASX Energy data.

Note: Traded volumes for ASX-traded cap contracts from when they were listed on 22 March 2021 to 20 July 2021. Data for cap contracts in the first three quarters after 5MS is scheduled to start.

A delay to the commencement of 5MS could impact all contracts from 1 October 2021. Some contracts include clauses that trigger renegotiation or become void in the case of a 'market disruption event', while others have similar clauses in case of changes to legislation or regulation. If a contract does not have such clauses that would trigger a renegotiation, participants may be stranded with a product of varied value if a delay is determined. If a contract becomes void, this may leave participants without risk management one quarter out from the start of a contract period.

QUESTION 4: FINANCIAL CONTRACTS MARKET IMPLICATIONS

- If there is a delay to the commencement of 5MS, would you prefer the new commencement of 5MS to be mid-quarter or the start of quarter? How important is this relative to other issues considered?
- If an extended delay is needed, are there other contract market issues the Commission should consider when deciding between 1 February or 1 April? Please explain and provide evidence.
- What are the estimated legal costs associated with re-negotiating contracts?

4.2.3 Summer implementation

In summer, the power system must manage extra risk as it responds to increased consumer energy demand, in the face of high temperatures and climatic events including bushfires and storms.

AEMO delivers a summer readiness plan in the lead up to summer each year. This plan provides information on preparations for summer and is designed to minimise the risk of customer supply disruption during the periods of highest electricity demand for the National Electricity Market. The key focus areas of risk for the last three summers were climatic conditions, peak electricity demand and resource availability.¹²

If an issue occurs that results in the need for a longer delay to the commencement of 5MS and GS, the Commission will need to consider the additional risk associated with commencing a major reform during summer.

QUESTION 5: SUMMER IMPLEMENTATION

a) Would the commencement of 5MS and GS soft-start on 1 February 2022 be considered high risk for implementation given the additional risks of summer operations for your business or the market as a whole? Please explain and provide evidence.

4.2.4 Delayed benefits

The 5MS and GS rules will deliver a number of benefits that are explained in detail in the final determinations for those rules.¹³

If an issue occurs that results in the need to further delay the commencement of 5MS and GS, this will defer the realisation of market benefits associated with these rules.

Delayed benefits of five minute settlement

A potential delay of 5MS will defer the realisation of market benefits for the industry as a whole and subsequently for consumers. For participants that may have invested in technologies capable of responding to a five-minute price signal, a potential further delay in the start of 5MS could delay some benefits for that participant and have some impact on their expected return on investment. The relative effect of such an impact will vary depending on the life of the assets involved.

Delayed benefits of global settlement

A potential delay to the commencement of global settlements financial start would extend the time in which the current 'settlement by difference' arrangements remain in place. Currently, the local retailer bears the risk of all unaccounted for energy (UFE) in its area and all retailers

¹² AEMO summer readiness plan 2018-19, 2019-20 and 2020-21.

¹³ For more information, refer to AEMC, *National Electricity Amendment (Five minute settlement) 2017 Rule*, Chapter 3, 26 November 2017 and AEMC, *National Electricity Amendment (Global settlement and market reconciliation) Rule 2018*, 6 December 2018.

that subsequently entered the market do not bear this risk. Global Settlements financial start will spread this UFE calculation across all retailers and provide incentives for retailers to reduce UFE.

QUESTION 6: DELAYED BENEFITS

a) If an extended delay is needed, to what extent would commencing 5MS and GS on 1 February or 1 April 2022 delay the realisation of benefits for individual participants or the industry as a whole? Please quantify and provide evidence.

4.3 Implications for global settlements, wholesale demand response and other regulatory reforms

A delay to the commencement of 5MS and GS soft start will have consequential impacts on the start dates of other components of the 5MS and GS rules, and the *National Electricity Amendment (Wholesale demand response mechanism) Rule 2020 (WDRM)*.

In its rule change request AEMO presented three alternative commencement dates for 5MS and GS soft start (1 December 2021, 1 February 2022 and 1 April 2022) which have been used as the starting point for consultation on any potential delay. Table 4.1 outlines key regulatory reforms and how AEMO proposes these will be affected by any delay to the commencement of 5MS and GS soft start. If stakeholders have strong evidence for why another date should be used for any dates proposed in the table, the Commission welcomes any submission and supporting evidence on this.

Global settlements financial start (scheduled to commence 1 May 2022)

GS financial start is when the new settlement methodology implemented by the GS rule will apply to retailers. Currently, there is a seven-month period between the GS soft start (1 October 2021) and GS financial start (1 May 2022), to provide transparency of UFE and give participants time to understand the impact of global settlement on their businesses.

In its rule change request, AEMO suggests that a minimum period of five months between GS soft start and GS financial start is required. AEMO also notes some stakeholders in the 5MS Program Consultative Forum indicated support for this transition period to be shorter than 7 months.¹⁴

Impact on date AEMO is required to publish UFE trend report and UFE reporting guidelines for global settlements

Currently, AEMO is required to publish a report on UFE trends and the UFE reporting guidelines after the commencement of GS financial start. These timeframes were staged such that AEMO would produce its first UFE Trends report by 1 June 2022, prior to the development of the UFE reporting guidelines by 1 March 2023. AEMO requested any delay to

¹⁴ AEMO Rule change request, p. 11.

the commencement of GS financial start should have a corresponding shift to the start of AEMO's requirement to publish a UFE trends report and UFE reporting guidelines (Table 4.1).

Wholesale demand response mechanism (scheduled to commence 24 October 2021)

The introduction of the WDRM, implemented by the WDRM rule, will enable consumers to sell demand response in the wholesale electricity market either directly or through specialist aggregators for the first time.

The Commission understands that AEMO has developed systems and baseline calculations for the WDRM based on 5MS being in place, and therefore the program relies on 5MS commencing before the WDRM. Therefore, the Commission considers if a delay to 5MS is needed, the commencement of the WDRM will need to also be delayed to start on either the same day or after 5MS (Table 4.1). The Commission considers the WDRM should commence on the same day as 5MS to realise the benefits of WDRM to the wholesale electricity market as early as possible.

AEMO noted that bundling several initiatives was not universally supported in the regulatory roadmap forum and proposes to scale up its resourcing to be able to support industry's post implementation activities.¹⁵

Implication for electricity business to business changes and customer switching (to align with 5MS commencement)

In its rule change request AEMO also highlighted the impact of a potential delay to the commencement of 5MS and GS soft start on commencement of other already determined regulatory reforms that do not have commencement dates in the rules. These reforms include electricity B2B changes determined by the Information Exchange Committee (IEC) and due to commence on 29 November 2021, and the customer switching system changes. AEMO's implementation of these reforms is closely linked with the development of and commencement of the systems to enable 5MS. AEMO proposes that due to the reliance of the system changes for these reforms on the system changes to implement 5MS that if 5MS is delayed, the implementation of electricity B2B and customer switching should also be delayed to begin on the same day as 5MS (Table 4.1).

¹⁵ AEMO rule change request, p. 5.

Table 4.1 summarises the current commencement dates for 5MS, GS and other rule changes and reforms and how these may be affected by a potential delay to the commencement of 5MS and GS soft start. The dates in the following table are guided by AEMO's rule change request and the Commission welcomes stakeholder views on dates that are subject to the commencement dates of the rules that are the subject of this rule change request.

Table 4.1: Current and potential delays to the commencement of 5MS, GS and other reforms

ASPECT OF RULE OR REFORM	CURRENT	'SHORT DELAY'	'EXTENDED DELAY' #1	'EXTENDED DELAY' #2
5MS and GS rules				
Commencement of 5MS and GS soft start	1 October 2021	1 December 2021	1 February 2022	1 April 2022
Commencement of GS financial start	1 May 2022	1 May 2022	1 July 2022	1 September 2022
AEMO required to publish UFE report on unaccounted for energy trends	1 June 2022	1 June 2022	1 August 2022	1 October 2022
Compliance date for all new and replacement metering installations (other than excluded metering installations), to be configured to record and provide five-minute data.	1 December 2022	1 December 2022	1 December 2022	1 December 2022
AEMO required to publish UFE reporting guidelines	1 March 2023	1 March 2023	1 May 2023	1 July 2023
Other reforms				
Customer switching*	1 October 2021	1 December 2021	1 February 2021	1 April 2022
Wholesale demand response mechanism	24 October 2021	1 December 2021	1 February 2022	1 April 2022
Electricity B2B changes*	29 November 2021	1 December 2021	1 February 2022	1 April 2022

Note: *Reforms to be implemented by AEMO that don't have commencement dates in the rules. There are other regulatory reforms that may be implemented in the next two years, including gas B2B changes and the MSATS standing data review.

QUESTION 7: IMPLICATIONS FOR GLOBAL SETTLEMENTS, WHOLESALE DEMAND RESPONSE AND OTHER REGULATORY REFORMS

- a) If there is a delay to the start date of 5MS and GS soft start, AEMO proposes a minimum period of 5 months between GS soft start and GS financial start. Are there any issues with this transitional period?
- b) If there is a delay to GS financial start, should there be an equivalent delay to the date when AEMO is required to publish the UFE trends report and UFE reporting guidelines? If not, why not?
- c) Are there any issues stakeholders can identify related to commencing the WDRM on the same date as 5MS and GS soft start? If so, what are these issues and how material are they? Further, what alternative date after 5MS implementation would be preferred, and why?
- d) Are there other impacts on other regulatory reforms that should be considered?

4.4 Implication of further delay on rule drafting, procedures and determinations

Should an issue occur that results in the need to delay the commencement of 5MS and GS soft-start, depending on the length of the delay, this would have implications for other schedules in a number of rules which have already been made. This includes, the commencement of schedules to a number of rules where the substantive schedules have commenced, but other schedules were dependent on and due to commence immediately after the 5MS rule on 1 October 2021. These changes are identified in the indicative drafting for a rule to delay 5MS and GS that accompanies this paper and is published on the AEMC's website.

4.4.1 National Electricity Rule implications

A potential delay to the commencement of 5MS and global settlements, if made, will have consequential implications for several other rules. The Commission has identified 14 rules that have already been made that have schedules that would be impacted by a potential delay to 5MS and GS (some only in relation to a delay to GS financial start), including:

- Schedules 1 to 6 of the National Electricity Amendment (Five minute settlement) Rule 2017 No. 15;
- Schedules 1 to 4 of the National Electricity Amendment (Global settlement and market reconciliation) Rule 2018 No. 14;¹⁶
- Schedule 2 of the National Electricity Amendment (Five minute settlement and Global Settlement implementation amendments) Rule 2019 No. 7;

¹⁶ If the delay to 5MS is to 1 February or 1 April 2022

- Schedules 3 to 5 of the National Electricity Amendment (Five minute settlement and Global Settlement implementation amendments) Rule 2019 No. 7;¹⁷
- Schedule 2 of the National Electricity Amendment (Minor changes) Rule 2020 No. 3;¹⁸
- Schedule 2 of the National Electricity Amendment (Transmission loss factors) Rule 2020 No. 2;
- Schedule 2 of the National Electricity Amendment (Intervention compensation and settlement processes) Rule 2019 No. 5;
- Schedule 2 of the National Electricity Amendment (Application of the regional reference node test to the Reliability and Emergency Reserve Trader) Rule 2019 No.11;
- Schedule 2 of the National Electricity Amendment (Application of compensation in relation to AEMO interventions) Rule 2019 No. 13;
- Schedule 2 of the National Electricity Amendment (Participant compensation following market suspension) Rule 2018 No. 13;
- Schedule 2 of the National Electricity Amendment (NEM Settlement under low, zero and negative regional demand conditions) Rule 2021 No. 6;
- Schedules 1, 3, 4 and 5 of the National Electricity Amendment (Wholesale demand response mechanism) Rule 2020 No 9;
- Schedule 4 of the National Electricity Amendment (Removal of intervention hierarchy) Rule 2020 No 14; and
- Schedules 2 and 3 of National Electricity Amendment (Semi-scheduled generator dispatch obligations) Rule 2021 No 2.

Any further delay to the commencement of the 5MS rule would also impact the methodology applied to calculating the cumulative price threshold for the period from 1 October 2021 to the implementation date of 5MS.

4.4.2 AEMO and IEC procedure implications

The 5MS rule required AEMO to update at least 14 of its procedures, and undergo a full rules consultation process on these updates. Since the rule was made, AEMO identified and has made changes to approximately 70 procedures, policies and guides affected by the 5MS rule across metering, settlement, dispatch and operations. Additionally, changes have been made by the IEC to procedures governing B2B data flows and interactions.

If the commencement of 5MS and GS is delayed, then there may be consequential implications for these procedures that have been updated as well. In the rule change request, AEMO proposes, any changes to already-determined procedures for the sole purpose of deferring the effective date of 5MS or GS should not require consultation.¹⁹

¹⁷ If the delay to 5MS is to 1 February or 1 April 2022

¹⁸ If the delay to 5MS is to 1 February or 1 April 2022

¹⁹ AEMO rule change request, p. 8.

4.4.3 **AER procedure and determinations implications**

The AER was also required to review and amend some procedures after the 5MS final rule was made. This review found that there were few, if any, changes required to accommodate the 5MS rule. However, there may be implications of a potential delay for revenue determinations and on the default market offer (DMO) determination for 2022-23.

Revenue determinations

The AER published its final revenue determinations for Victorian distribution network service providers for the period 2021-26 in April 2021. It is currently in the process of assessing the revenue determinations for AusNet and Powerlink for the period 2022-27. The AER informed the Commission that AusNet Services' proposal includes costs for the move to 5MS. The AER is due to publish the final determination by 31 January 2022, and therefore should be able to account for a delay to 5MS if the Commission determines to make a rule. Powerlink did not propose costs in relation to 5MS in its revenue proposal.

Default Market Offer

The AER published its Determination of default market offer prices 2021-22 in July 2021.²⁰ The AER has informed the Commission, a delay to 5MS and GS soft start would reduce the accuracy of the published 2021-22 wholesale forecast component of the DMO price. As the DMO's wholesale forecast takes into account actual contract trades, a delay would also reduce trade data available to forecast 2022-23 wholesale costs. The AER has informed the Commission that it would need more information to determine this impact but noted a delay would reduce trade data that's used for wholesale forecasts.

QUESTION 8: DRAFTING IMPLICATIONS FOR A POTENTIAL FURTHER DELAY

- a) Are there any interactions that stakeholders are aware of with other rules or initiatives that have not been identified in this paper?
- b) In its rule change request, AEMO proposes that any changes that are required to already-determined procedures for the sole purpose of deferring the effective date of 5MS, GS, customer switching and WDRM should not require consultation? Are there any reasons that this could be an issue?

²⁰ AER determination for DMO for 2021-22 <https://www.aer.gov.au/retail-markets/guidelines-reviews/retail-electricity-prices-review-determination-of-default-market-offer-prices-2021-22>

5 PROCESS FOR THIS RULE CHANGE

This chapter outlines the:

- treatment of this rule change request as an urgent rule, and
- key dates.

5.1 Treatment as an urgent rule change

AEMO has proposed that this rule change request be treated as an urgent rule in accordance with section 96 of the NEL such that it could be processed on an expedited basis. AEMO considers this rule change request meets the requirements of an urgent rule under the NEL as, if not made as a matter of urgency, the inability to implement 5MS on 1 October 2021 and for AEMO to settle the market, could result in imminent prejudice or threat to the effective operation and administration of the wholesale electricity market.

The Commission considers that the rule change request meets the test for an urgent rule in section 87 of the NEL, and should be subject to the expedited rule making process under section 96 of the NEL.

The Commission considers that the rule change request is a request for an urgent rule change because, if the Commission determines to make a rule and that rule is not made as a matter of urgency, the inability for 5MS to be implemented on 1 October 2021 will result in an imminent threat to the effective operation or administration of the wholesale electricity market.²¹

Requests for a rule that are considered to be urgent may be processed under an expedited (faster) process under which there is only one round of consultation and the AEMC is required to publish its final rule determination within eight weeks of commencing the rule change process.²²

The Commission has decided to use an expedited process to consider this rule change request provided that it does not receive any valid requests not to use the expedited process by 19 August 2021. To be valid, an objection should not be misconceived or lacking in substance.

5.2 Key dates

- Commencement of this rule change process: **5 August 2021**,
- objections to an expedited process to be received by: **19 August 2021**,
- submissions to the rule change request and consultation paper to be received by: **2 September 2021**, and
- final decision to be published under an expedited process by: **30 September 2021**.

²¹ Section 87 of the National Electricity Law.

²² The AEMC has published a notice under ss. 95 and 96 of the National Electricity Law to commence and assess this rule change request as an urgent rule.

6 LODGING A SUBMISSION

The Commission invites written submissions on this rule change proposal.

All enquiries on this project should be addressed to Sam Markham at Sam.Markham@aemc.gov.au.

6.1 Lodging a request not to make a rule under an expedited process

Written requests not to make a rule under the expedited process in section 96 of the NEL must include reasons for the request, and must be lodged with the Commission by 19 August 2021 in accordance with the process specified below.

6.2 Lodging a submission to this rule change request

Written submissions on the rule change request must be lodged with Commission by 2 September 2021 online in accordance with the process specified below.

Where practicable, submissions should be prepared in accordance with the Commission's guidelines for making written submissions on rule change requests.²³ The Commission publishes all submissions on its website, subject to a claim of confidentiality.

6.3 Lodging online

Submissions, or requests not to make a rule under the expedited process, must be lodged online via the Commission's website, www.aemc.gov.au, using the "lodge a submission" function and selecting the project reference code ERC0331.

The request or submission must be on letterhead (if submitted on behalf of an organisation), signed and dated.

²³ This guideline is available on the Commission's website www.aemc.gov.au.

ABBREVIATIONS

5MS	Five minute settlement
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
Commission	See AEMC
GS	Global settlements
IEC	Information Exchange Committee
MCE	Ministerial Council on Energy
NEL	National Electricity Law
NEO	National electricity objective
NER	National Electricity Rules
UFE	Unaccounted for energy
WDRM	Wholesale demand response mechanism

A BACKGROUND TO THE RULE CHANGE

This appendix provides a brief explanation of:

- the five minute settlement rule
- the global settlement rule
- five minute settlement and global settlement rule change processes and implementation to date.

A.1 Five minute settlement rule

In December 2015, the AEMC received a proposal from Sun Metals (a large zinc refinery in Queensland) to align the financial settlement of the electricity market with the operational dispatch of the market at five minutes. This represents a change from the current 30-minute settlement which is calculated by the average of the six, five-minute dispatch intervals.

The current 30-minute settlement interval reflects the limitations in metering, data collection and IT systems that existed at the beginning of the NEM in 1998. Twenty years on we have access to far more sophisticated equipment, systems and energy services which have the capability to support financial settlement of the market every five minutes. While this change seems relatively small and straightforward, numerous processes—including financial transactions, data collection and IT systems—have all been designed around the traditional 30-minute settlement period.

The change to the market rules will impact existing operational behaviour, IT systems and investment incentives for the industry, which means implementation has considerable costs. However, these costs are balanced with significant, long-term benefits for the transitioning energy sector. It was a change that could invigorate the NEM, and prepare it for a more dynamic and agile future.

Similar changes to the settlement period were considered in international markets such as New Zealand and some US markets and it took considerable time to work through the issues associated with such a change.

Benefits of five minute settlement rule change

The Commission considered that aligning dispatch and settlement at five-minutes would have the following significant enduring benefits, relative to the current arrangements, including improved:²⁴

- price signals for more efficient generation and use of electricity,
- price signals for more efficient investment in capacity and demand response technologies to balance supply and demand, and
- bidding incentives.

²⁴ AEMC, Five minute settlement, Final determination, 28 November 2017, p.ii.

A.2 Global settlement rule

On 6 December 2018, the Commission made a rule to introduce a 'global settlement' framework for settlement of the demand side of the wholesale electricity market. The global settlement rule moves away from the current 'settlement by difference' approach. The rule was made in respect of a rule change request received from AEMO on 16 March 2018.²⁵ While independent of five minute settlement, both global and five minute settlement have synergies in implementation, particularly regarding meter data system and file changes.

Background on settlements, 'settlements by difference' and 'global settlements'

The NEM is a gross electricity pool market operated by AEMO. All electricity supplied to the market and consumed by end users is transacted at the spot price for each trading interval in each region. The market settlement process requires that generators are paid for the energy they provide to the NEM and market customers pay for the energy they use. Market customers are primarily electricity retailers who purchase wholesale electricity to on-sell to their retail customers, but also include some large industrial customers.²⁶

Under the previous market settlement framework, known as 'settlement by difference', electricity supplied to a distribution area was billed to the incumbent retailer known as the local retailer, except for the loss-adjusted metered electricity that is consumed by the customers of independent retailers within that area. That meant that the local retailer for an area wore the risk of all residual electricity losses in that area - known as UFE. UFE previously included unaccounted for technical losses, commercial losses and errors in estimating the half-hourly consumption of basic metering installations which does not keep track of how electricity usage varies throughout the day.²⁷

Under the global settlement framework, every retailer is billed for the loss-adjusted metered electricity that is consumed by their customers within the area. UFE is allocated to market customers in a local area, prorated based on their 'accounted-for' energy.²⁸

Benefits of global settlement

The key benefits of moving to a global settlements framework include:

- improved transparency, leading to fewer settlement disputes between retailers and lower levels of UFE over time,
- competition on equal terms between the local retailer and other retailers, and
- improved risk allocation, so that risks are allocated to those parties that are best placed to manage them.

²⁵ The final rule was a more preferable rule. It is generally consistent with AEMO's rule change request but varies in some specific design elements of global settlements. AEMC, Global Settlement and Market Reconciliation, Rule determination, 6 December 2018, p. i.

²⁶ AEMC, Global Settlement and Market Reconciliation, Rule determination, 6 December 2018, p.i.

²⁷ AEMC, Global Settlement and Market Reconciliation, Rule determination, 6 December 2018, p.i.

²⁸ AEMC, Global Settlement and Market Reconciliation, Rule determination, 6 December 2018, p.i.

A.3 Rule change processes and implementation to date

In November 2017, the Commission determined to make the 5MS rule, allowing for a three and a half year transition period to balance the implementation costs of transition with the longer term benefits of the change.

On 6 December 2018, the Commission made the GS rule, after a standard rule change process. Under this rule, AEMO was to start publishing UFE calculations from 1 July 2021 to align with the start of 5MS, and to start financial settlement of GS on 6 February 2022 (these start dates were delayed to 1 October 2021 and 1 May 2022, respectively, as a result of the delayed implementation of 5MS and GS rules in 2020).

A.3.1 AEMO's implementation of 5MS and GS

AEMO formally started its consultation process on the implementation for 5MS in July 2018. AEMO established three dedicated five minute settlement working groups to engage with industry and market bodies on procedure updates, system updates and industry readiness. The three working groups are:

- 1. Procedures** — working with industry to review and where required implement changes to around 70 procedures, policies and guides,
- 2. Systems** — responsible for the design, development, testing and implementation of IT and metering systems to support the changes, and
- 3. Readiness** — responsible for ensuring all participants are prepared for the transition and commencement of the rule.

In addition to the three dedicated working groups, AEMO established several focus groups and forums that meet regularly (mostly monthly) in the lead up to the commencement of the 5MS and GS rules.

Essential capability requirements for 5MS commencement

AEMO established the essential capability requirements through the 5MS readiness working group. These requirements must be met for the successful commencement of 5MS. At a high level, the capability requirements fall into three main streams:²⁹

- **Bidding and dispatch** — generators and network service providers are able to submit 5-minute offers,
- **Retail** — meters are able to produce, store and deliver 5-minute meter data, and
- **Settlements** — AEMO can settle the market on a 5-minute basis.

Achieving these requirements is dependent on AEMO successfully deploying:

- the five-minute bidding and dispatch solution, including the web interface,
- the metering data management (MDM) solution, and

²⁹ AEMO Five minute settlement and global settlement industry readiness contingency plan, Appendix 2, June 2020. <https://aemo.com.au/-/media/files/electricity/nem/5ms/readiness-workstream/2020/final-industry-readiness-contingency-plan-pdf.pdf?la=en&hash=436740E97E7DBA83FA48BE0804AC5278>

- the five-minute settlement solution.

A.3.2 Five minute settlement and global settlement implementation amendments rule

Through AEMO's implementation program it identified some technical issues and submitted a rule change in March 2019 to amend six areas of the NER. A subsequent addendum to the rule change request, to amend three further areas of the NER, was submitted in May 2019.

On 8 August 2019 the AEMC made a rule to amend nine areas of the National Electricity Rules (NER) to help implement five minute settlement and global settlement.³⁰ The rule improved wholesale market operations under five minute settlement, clarified global settlement arrangements and improved information provision requirements.

A.3.3 Delayed implementation of five minute and global settlement rule

On 9 April 2020, AEMO submitted a rule change request to the AEMC that proposed to defer the commencement date for the 5MS and GS rules by a period of 12 months in order to relieve financial and implementation pressures on industry from regulatory reform at the start of COVID-19. AEMO's rule change request was to test whether delaying 5MS and GS by 12 months to commence on 1 July 2022 and 6 February 2023 respectively would assist industry participants in focusing on the ongoing supply of energy as an essential service and supporting customers dealing with the impacts of COVID-19.

On 9 July 2020, after considering 48 written responses, the Commission made a rule which delayed the commencement of the 5MS and GS rules by three months.³¹ The Commission made a more preferable rule to delay the commencement of the 5MS and GS rules by three months rather than 12 months, to commence on 1 October 2021 and 1 May 2022 respectively. The more preferable rule balanced the capacity constraints placed on the industry by COVID-19 against the additional costs and deferred benefits caused by a delay to the commencement of the respective rules.

³⁰ AEMC, *Five minute settlement and global settlement implementation amendments*, Rule determination, 8 August 2019.

³¹ AEMC, *Delayed implementation of five minute and global settlement*, Rule determination, 9 July 2020.

B OVERVIEW OF ELECTRICITY HEDGING MARKETS

This Appendix provides a high level overview of electricity hedging markets.

The NEM operates as a gross pool market, where generators bid in different quantities of generation at different prices. As demand and supply vary continuously throughout the day, so does the electricity price. The fluctuations between the market floor price (-\$1,000/MWh) and the market price cap (\$15,100/MWh) create cash flow risks for wholesale and retail participants. Electricity hedging contracts are commonly used to manage the impact of this volatility on participants. Electricity hedge contracts allow counterparties to agree to a fixed price for a financial transaction in the future based on the price of an underlying asset or commodity, such as the NEM spot price. There are broadly two markets for electricity hedge contracts:

- **The Australian Securities Exchange (ASX)**—Contracts traded on the ASX are standardised, anonymous, and all prices and quantities are publicly available. Electricity futures products are available for Queensland, NSW, Victoria and South Australia.
- **Over-the-counter (OTC)**—OTC contracts are generally bi-lateral, bespoke and negotiated between the parties. Most OTC contracts are based on the standard terms established in the International Swaps and Derivatives Association (ISDA) electricity addendum.

The most common type of electricity hedge contracts are swaps (or 'futures'), caps and options:

- **Swap**—A swap contract trades a given volume of energy during a fixed period for a fixed price (the strike price). The variable wholesale market spot price is, in effect, swapped for the fixed strike price. The contract is settled through payment between the counterparties based on the difference between the spot price and the strike price. The natural seller of a swap is a baseload generator whereas the natural buyer is a retailer. For both parties, the swap is a hedge against spot price volatility. Retailers typically use swaps to hedge the average component of their customer load profile.
- **Cap**—A cap contract trades a fixed volume of energy for a fixed price when the spot price exceeds a specified price, which is typically \$300/MWh. It provides the buyer of the contract with insurance against high prices. The seller of a cap is required to pay to the buyer the difference between the spot price and \$300/MWh every time the spot price exceeds \$300/MWh. The natural sellers of caps are peaking generators whereas the natural buyers of caps are retailers and large energy users. Caps are most suitable to hedge load that is variable or less certain.
- **Option**—Options are contracts that give the holder the right, without obligation, to enter a contract at an agreed price, volume and term in the future. The buyer pays a premium for this added flexibility. An option can be either a call option (giving the holder the right to buy the underlying financial product) or a put option (giving the holder the right to sell the underlying financial product). Options are available on swap products.