

Consultation paper

National Electricity Amendment
(Amendment to frequency
performance payment cost recovery)
Rule 2025

Proponent
AEMO

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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 commenced consideration of a request from AEMO to amend two definitions relating to the new frequency performance payments (FPP) process that commences from 8 June 2025. This consultation paper is the first stage of the rule change process.
- 2 AEMO’s rule change request relates to the allocation of costs to participants that do not have appropriate metering to measure their individual impact on power system frequency (these participants are collectively referred to as the ‘residual’).
- 3 Following the commencement of the *Primary frequency response incentive arrangements Rule 2022* (PFR Incentives Rule) on 8 June 2025, the costs of frequency performance payments and regulation services will be allocated to the residual based on each participant’s share of total energy consumed or sent out in *each dispatch interval*.
- 4 AEMO’s proposal seeks to clarify that costs allocated to the residual be spread evenly across all the participants within the residual, based on the sum of energy consumed and energy sent out. The total pool of residual costs would be unchanged.
- 5 AEMO considers that its proposed change would remove the potential for sent out energy and consumed energy to net out, thus removing the potential for participants in the Residual to avoid their share of non-energy costs. AEMO considers its proposal would better align with recent reforms to non-energy cost recovery, such as those outlined in the Commission’s Integrating Energy Storage Systems final determination that non-energy costs be allocated on a beneficiary/causer pays approach where possible, or otherwise dispersed as broadly as possible.¹ AEMO also considers that the change would be simpler, and so cheaper to implement.
- 6 Additionally, AEMO’s proposed rule would require updates to its Frequency Contribution Factors Procedure to ensure the procedure aligns with the rule. The procedure is subject to Rules Consultation Procedures. We are seeking stakeholder views on whether AEMO could be exempted from consultation when making any consequential minor updates to the procedure as a result of any final rule made in this process.

We are proposing to use the expedited process for this rule change and objections must be received by 30 January 2025

- 7 We are proposing to use the expedited rule making process under section 96 of the NEL because we agree with AEMO’s reasoning and consider the rule change request is a request for a non-controversial rule.
- 8 We consider the rule change request is non-controversial – that is, the rule change is unlikely to have a significant effect on the national electricity market.² This is because the proposed change is not likely to result in large changes in settlement amounts for individual participants, and is therefore unlikely to have a significant effect on outcomes on the national electricity market.
- 9 Stakeholders can object to this expedited process by lodging a written objection with us by 30 January 2025. Any objection should detail reasons why the rule change is not non-controversial. We will switch to the standard rule change process if we receive a valid objection. See chapter 2 for more information on how to object to the expedited process.

¹ Integrating Energy Storage Systems into the NEM – final determination, pp. 46-50.

² Section 87 of the NEL.

We consider that there are three assessment criteria that are most relevant to this rule change request

- 10 Considering the National Electricity Objective (NEO), and the issues raised in the rule change request, the Commission proposes to assess the rule change request against three assessment criteria.³
- 11 We are seeking feedback on our proposed assessment criteria:
- **Principles of market efficiency:** Would this establish setting (discovery) of prices and other incentives that encourage competition so prices are close to the social marginal cost by recovering residual costs in the least distortionary way?
 - **Implementation considerations:** Would this balance the cost and complexity of implementation and ongoing regulatory and administrative costs to all market participants, consumers and market bodies, across all potential solutions? Would this encourage successful implementation, including through clear roles for market participants and market bodies?
 - **Safety, security and reliability:** Would this enable reliable, secure and safe provision of energy at efficient cost to consumers over the long term? Would this promote efficient operation and use of, and investment in, generation facilities, load, storage, networks and other system service capability?

Submissions are due by 13 February 2025

- 12 We are seeking your feedback on:
- Our proposed assessment criteria
 - How we propose to assess the request to determine if it would promote the long-term interests of consumers.
 - Views on AEMO's proposed change and whether it would promote the National Electricity Objective.
- Written submissions responding to this consultation paper must be lodged with Commission by 13 February 2025 via the Commission's website, www.aemc.gov.au.

Full list of consultation questions

Question 1: What are your views on AEMO's proposal?

- Do you agree that AEMO's proposed changes to the definitions of TE and ATE align better with the intent of recent reforms to non-energy cost recovery and the principles for the allocation of non-energy costs to the residual participants? If not, why not?
- Do you consider that there is an alternative approach that would better clarify the definitions of TE and ATE for the allocation of FPP and regulation costs to the residual participants?
- How do you think any consequential minor updates to the Frequency Contribution Factors Procedure should be managed in relation to Rules Consultation Procedures?

Question 2: Assessment framework

Do you agree with the proposed assessment criteria? Are there additional criteria that the Commission should consider or criteria included here that are not relevant?

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1 AEMO has proposed a change to the way residual non-energy costs are allocated under the PFR Incentive arrangements Rule

AEMO’s rule change request proposes an amendment to the National Electricity Rules (NER or rules) that will be introduced upon the commencement of the *PFR Incentives Rule*. AEMO’s proposed rule seeks to amend definitions that relate to the ‘residual’ – the participants that do not have appropriate metering to measure their individual impact on power system frequency.⁴

AEMO considers that the current rules drafting set out in the PFR incentives Rule could result in consumed and sent out energy to net out within a dispatch interval, which would reduce some participants’ exposure to residual cost allocation at the expense of other residual participants whose energy components do not net out. AEMO’s proposal would remove the potential for sent out energy and consumed energy to net out, better aligning with recent reforms to non-energy cost recovery. AEMO also considers that the change would be simpler, and so would allow for cheaper implementation of the FPP process. It does not change the total pool of residual costs that are to be allocated.

This chapter provides an overview of the FPP process and describes AEMO’s proposed rule. It is also described further in appendix B.

We have commenced our consideration of this rule change request, based on the expedited rule making process under section 96 of the NEL for a non-controversial rule. This consultation paper is the first stage. Further detail on the expedited rule making process, and the process for making an objection, is set out in chapter 2.

Chapter 3 describes the assessment approach for this rule change request.

We are seeking your feedback on:

- Our proposed assessment framework
- How we propose to assess the request to determine if it would promote the long-term interests of consumers.
- Views on AEMO’s proposed change and whether it would promote the National Electricity Objective.

1.1 Overview of the Frequency performance payments process

The frequency performance payments are a new double-sided incentive scheme that will take effect from 8 June 2025.⁵ The arrangements are designed to incentivise participants to operate their plant in a manner that assists frequency management in the NEM.

The scheme builds on the existing ‘causer pays’ arrangements for the allocation of regulation FCAS costs through the introduction of double-sided FPP for all eligible units of generation and load. Under this scheme, resources with ‘appropriate metering’ that contribute helpfully to balancing system frequency will receive payments from those that make unhelpful contributions.⁶

⁴ Specifically, the definitions of TE and ATE in clause 3.15.6AA(b)(2) of the PFR Incentives Rule. Note that AEMO in its rule change request refers to the residual as the costs allocated to this group. However, consistent with previous AEMC determinations we use the term ‘residual’ to talk about the group of plants themselves; whereas the cost is the ‘residual cost’.

⁵ The arrangements are set out in Schedule 2 of the PFR Incentives Rule. Schedule 2 commences on 8 June 2025.

⁶ The PFR Incentives Rule defines appropriate metering as metering to allow an eligible unit’s individual contribution to the deviation in the frequency of the power system to be assessed, in accordance with the requirements set out by AEMO in the *Frequency contribution factors procedure*.

The FPP process is a two-sided incentive and cost allocation scheme based on the impact of a participant's power system equipment (generation and load) on system frequency. Plant behaviour that helps to control system frequency and reduce a frequency deviation (from 50Hz) is rewarded with revenue obtained from participants whose plant hinders system frequency control by increasing a frequency deviation.

The payments and allocations for plant with appropriate metering are based on individual contribution factors, which are calculated based on each unit's measured active power behaviour within each 5-minute dispatch interval.

Plants without appropriate metering are referred to collectively as 'the residual' and included in the FPP calculations via a collective contribution factor. Each individual plant within the residual is then allocated a proportional share of the collective residual FPP and regulation FCAS costs based on their share of energy consumed and sent out. This is known as the 'residual cost'.

The methodology for the allocation of the residual cost to the residual was set out in the PFR Incentives final rule, and is also outlined in more detail in section 1.2 and appendix A of this paper.⁷

1.2 AEMO's proposed change would support a more even allocation of costs across the residual participants

While implementing the FPP process, AEMO identified a small amendment to the PFR Incentives Rule that it considers would support a cheaper and fairer implementation of the calculation methodology. AEMO submitted a rule change request on 4 October 2024 which proposes a minor drafting change that it considers is better aligned with recent reforms to non-energy cost recovery. AEMO also considers it would be cheaper and simpler to implement in its systems.

AEMO's proposed rule is outlined in more detail in appendix B

1.2.1 AEMO identified that the definitions in the current rule drafting could lead to some residual participants avoiding their share of non-energy costs

AEMO has proposed a change to the way non-energy costs are allocated to the residual to better align with the intent of the PFR Incentives Rule, and previous reforms to the recovery of non-energy costs in the *Five-Minute Settlements and Global Settlements Rule* and the *Integrating Energy Storage Systems into the NEM (IESS) Rule*. The proposal also notes that the way the PFR Incentives Rule is drafted currently would require costly changes to AEMO's systems as part of its implementation.⁸

Following the implementation and commencement of the PFR Incentives Rule, eligible units will be paid or pay based on their frequency response. Units that do not have appropriate metering installed (collectively these plants are called the 'residual') will be allocated the remaining non-energy (PFR and regulation FCAS) costs once all other eligible units have had costs or payments allocated.

Under the PFR Incentives Rule, the non-energy cost allocation to the residual is based on the proportional share of the Total Energy for that unit (TE) divided by the Aggregate Total Energy for all (residual) units without appropriate metering (ATE). TE is the absolute value of adjusted sent-out energy (ASOE) and adjusted consumed energy (ACE).

⁷ See *Primary frequency response incentive arrangements final determination*, pp. 30-34

⁸ Rule change request from AEMO on 4 October 2024: Amendment to frequency performance payment cost recovery, page 1. See: <https://www.aemc.gov.au/sites/default/files/2024-10/New%20rule%20change%20proposal%20-%20AEMO%20-%2020241004.pdf>

This is set out in Figure 1.1 below.

Figure 1.1: Current residual allocation methodology

$$Cost_{residual\ allocated} \propto \frac{TE}{ATE}$$

where

$$TE = \text{adjusted gross energy} = |ASOE + ACE|$$

$$\text{adjusted sent out energy} = ASOE$$

$$\text{adjusted consumed energy} = ACE$$

$$ATE = \text{aggregate total energy} = \text{aggregate of all total energy values}$$

This formulation creates the scenario where ASOE and ACE can net out where there are flows in both directions across a connection point during a single dispatch interval. This is because ASOE is positive and ACE is negative. This allows for some participants' exposure to residual cost allocation to be reduced within a five-minute metering interval through the impact of offsetting the values for ASOE and ACE.⁹

AEMO considers that this offsetting effect is not intended and is contrary to the market design principle outlined in the Commission's Integrating Energy Storage Systems final determination that non-energy costs be allocated on a beneficiary/causer pays approach where possible, or otherwise dispersed as broadly as possible.¹⁰ For the allocation of costs to the residual participants, individual measurement of the impact on system frequency – and the need for corrective frequency response – is not possible, as by definition these participants do not have appropriate metering to measure their impact on system frequency. Therefore, AEMO wishes to spread the costs to this group as broadly as possible, based on the proportion of energy sent out and consumed.

1.2.2 AEMO's proposal would support a more even allocation of costs across the residual

AEMO's proposed rule change would amend the definitions for TE and ATE. These amendments would remove the potential for ASOE and ACE to net out, thus removing the potential for participants in the residual to avoid their share of non-energy costs.

AEMO also notes that the proposal is more compatible with its systems, which would reduce implementation costs of the PFR Incentives Rule.

The proposed change involves taking the absolute value of ASOE and ACE **before** they are summed to form AGE, as opposed to **after** as will occur under the PFR Incentives Rule.¹¹ This is set out in Figure 1.2 below:

9 Rule change request from AEMO on 4 October 2024: Amendment to frequency performance payment cost recovery, page 4. See: <https://www.aemc.gov.au/sites/default/files/2024-10/New%20rule%20change%20proposal%20-%20AEMO%20-%2020241004.pdf>

10 Rule change request from AEMO on 4 October 2024: Amendment to frequency performance payment cost recovery, pp. 4-5. See: <https://www.aemc.gov.au/sites/default/files/2024-10/New%20rule%20change%20proposal%20-%20AEMO%20-%2020241004.pdf>

11 PFR Incentives Rule cl. 3.15.6AA(b)(2)

Figure 1.2: AEMO's proposed residual allocation methodology

$$Cost_{residual\ allocated} \propto \frac{|ASOE| + |ACE|}{ATE}$$

where

adjusted sent out energy = ASOE

adjusted consumed energy = ACE

ATE = aggregate total energy = aggregate of all total energy values

AEMO considers this would result in a more even cost distribution across the residual units without appropriate metering, since it would resolve the possibility of ASOE and ACE netting out. This behaviour is illustrated in Table 1.1, below.¹²

Similarly, AEMO notes that the existing calculation methodology is not compatible with its current systems and would require expensive changes to implement, whereas the proposed new methodology is compatible, avoiding these costs.¹³

Table 1.1: Example – Various scenarios for energy measurement over a sample interval at a connection point with 2-way flows

Energy element	Energy measurement by interval (MWhr)		
	1	2	3
Adjusted sent-out energy (ASOE)	0	10	5
Adjusted consumed energy (ACE)	-10	0	-5
Adjusted gross energy (AGE)	-10	10	0
ASOE + ACE			
ABS(AGE)			
As per PFR incentive arrangements rule	10	10	0
ABS(ASOE) + ABS(ACE)			
As per AEMO's proposed rule	10	10	10

Source: Rule change request from AEMO on 4 October 2024: Amendment to frequency performance payment cost recovery, page 15. See: <https://www.aemc.gov.au/sites/default/files/2024-10/New%20rule%20change%20proposal%20-%20AEMO%20-%2020241004.pdf>

This example shows how, for participants in the Residual, bidirectional flows can net out under the PFR Incentives Rule (interval 3). It also shows how the proposed rule would address this issue.

12 Rule change request from AEMO on 4 October 2024: Amendment to frequency performance payment cost recovery, page 15 & 17. See: <https://www.aemc.gov.au/sites/default/files/2024-10/New%20rule%20change%20proposal%20-%20AEMO%20-%2020241004.pdf>

13 Rule change request from AEMO on 4 October 2024: Amendment to frequency performance payment cost recovery, page 16. See: <https://www.aemc.gov.au/sites/default/files/2024-10/New%20rule%20change%20proposal%20-%20AEMO%20-%2020241004.pdf>

Intervals 1 and 2 are just illustrative and result in the same outcome under the PFR Incentives Rule and the proposed rule.

1.2.3 AEMO's proposed rule would require updates to its Frequency Contribution Factors Procedure

AEMO's Frequency Contribution Factors Procedure currently references 'adjusted gross energy' in relation to apportioning costs to the residual. If AEMO's proposed rule is made, this reference would need to be updated to reflect the new rule. Rules Consultation Procedures must be followed for any updates to the procedure with AEMO consulting on the updates resulting from the PFR Incentives Rule between September 2022 and June 2023.

We are seeking stakeholder feedback on whether it would be appropriate or not to amend these obligations on AEMO in relation to the Rules Consultation Procedures in this instance. For example, if the rule was made, could AEMO update the Guidelines to reflect any consequential minor changes to the procedure without consultation to allow for a faster implementation.

Question 1: What are your views on AEMO's proposal?

- Do you agree that AEMO's proposed changes to the definitions of TE and ATE align better with the intent of recent reforms to non-energy cost recovery and the principles for the allocation of non-energy costs to the residual participants? If not, why not?
- Do you consider that there is an alternative approach that would better clarify the definitions of TE and ATE for the allocation of FPP and regulation costs to the residual participants?
- How do you think any consequential minor updates to the Frequency Contribution Factors Procedure should be managed in relation to Rules Consultation Procedures?

2 We are proposing to use the expedited process for this rule change

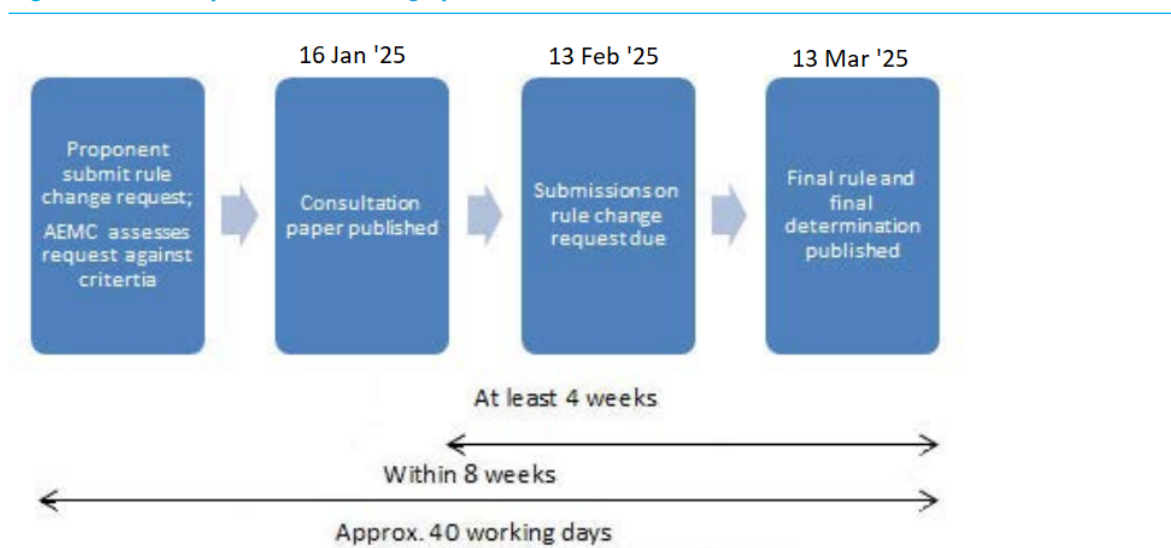
We are proposing to use the expedited rule making process under section 96 of the NEL because we agree with AEMO’s reasoning and consider the rule change request is a request for a non-controversial rule.

We consider the rule change request is non-controversial – that is, the rule change is unlikely to have a significant effect on the national electricity market.¹⁴ This is because the proposed change is not likely to result in large changes in settlement amounts for individual participants, and is therefore unlikely to have a significant effect on outcomes in the national electricity market.

This is because participants without high-speed metering are typically not sophisticated, energy-driven players, and consequently are unlikely to deliberately manipulate their behaviour to avoid costs as would be possible under the current PFR Incentives Rule drafting. In absence of deliberate behaviour, settlement amounts under the current process would only change during dispatch intervals where a participant’s connection point energy flows change direction. A large proportion of the participants that make up the residual are customer load, which does not have the ability to discretionally shift load to reduce non-energy costs or otherwise. Thus, we think that the change in costs for individual participants as a result of a change being made would be minimal, and so it would not have a significant impact on outcomes in the national electricity market. The total amount of the costs allocated to the residual would be unchanged.

We therefore consider that using the expedited process is appropriate to assess the rule change request. The expedited process would be eight weeks in total, with one round of consultation (this consultation paper) prior to a final determination, assuming there are no objections to the use of the expedited process.

Figure 2.1: Expedited rule change process and dates



An expedited rule change request includes the following formal stages:

¹⁴ Section 87 of the NEL.

- a proponent submits a rule change request
- the Commission commences 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 final determination and final rule (if relevant).

Stakeholders can object to this expedited process by lodging a written objection with us by **30 January 2025**. Any objection should detail reasons why the rule change is not non-controversial. We will switch to the standard rule change process if we receive a valid objection. See section 4.1 for more information on how to object to the expedited process.

3 Making our decision

When considering a rule change proposal, the Commission considers a range of factors.

This chapter outlines:

- issues the Commission must take into account
- the proposed assessment framework
- decisions the Commission can make

We would like your feedback on the proposed assessment framework.

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

The Commission is bound by the National Electricity Law (NEL) to 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.¹⁵

The NEO is:¹⁶

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 targets statement, available on the AEMC website, lists the emissions reduction targets to be considered, as a minimum, in having regard to the NEO.¹⁷

3.2 We propose to assess the rule change using these three criteria

3.2.1 Our regulatory impact analysis methodology

Considering the NEO and the issues raised in the rule change request, the Commission proposes to assess this rule change request against the set of criteria outlined below. These assessment criteria reflect the key potential impacts — costs and benefits — of the rule change request. We consider these impacts within the framework of the NEO.

The Commission’s regulatory impact analysis may use qualitative and/or quantitative methodologies. The depth of analysis will be commensurate with the potential impacts of the proposed rule change. We may refine the regulatory impact analysis methodology as this rule change progresses, including in response to stakeholder submissions.

Consistent with good regulatory practice, we also assess other viable policy options - including not making the proposed rule (a business-as-usual scenario) and making a more preferable rule — using the same set of assessment criteria and impact analysis methodology where feasible.

¹⁵ Section 88 of the NEL

¹⁶ Section 7 of the NEL.

¹⁷ Section 32A(5) of the NEL.

3.2.2 Assessment criteria and rationale

The proposed assessment criteria and rationale for each is as follows:

- **Principles of market efficiency** – Would this establish setting (discovery) of prices and other incentives that encourage competition so prices are close to the social marginal cost by recovering residual costs in the least distortionary way? As this rule change request relates to recovering residual costs in the least distortionary way, potential allocation methodologies will be evaluated against this criterion.
- **Implementation considerations** – Would this balance the cost and complexity of implementation and ongoing regulatory and administrative costs to all market participants, consumers and market bodies, across all potential solutions? Would this encourage successful implementation, including through clear roles for market participants and market bodies? This rule change request relates to minimising the cost and complexity of implementing the Commission’s PFR Incentives Rule. Potential cost allocation methodologies will be evaluated against this criterion.
- **Safety, security and reliability** – Would this enable reliable, secure and safe provision of energy at efficient cost to consumers over the long term? Would this promote efficient operation and use of, and investment in, generation facilities, load, storage, networks and other system service capability? This rule change request relates to the effective implementation of the PFR Incentives Rule to improve security outcomes in the NEM. Potential solutions will be evaluated against this criterion.

Question 2: Assessment framework

Do you agree with the proposed assessment criteria? Are there additional criteria that the Commission should consider or criteria included here that are not relevant?

3.3 We have three options when making our decision

After using the assessment framework to consider the rule change request, the Commission may decide:

- to make the rule as proposed by the proponent¹⁸
- to make a rule that is different to the proposed rule (a more preferable rule), as discussed below, or
- not to make a rule.

The Commission may make a more preferable rule (which may be materially different to the proposed rule) if it is satisfied that, having regard to the issue or issues raised in the rule change request, the more preferable rule is likely to better contribute to the achievement of the NEO.¹⁹

¹⁸ The proponent sets out its proposed rule in chapter 5 of its rule change request, available at <https://www.aemc.gov.au/sites/default/files/2024-10/New%20rule%20change%20proposal%20-%20AEMO%20-%2020241004.pdf>

¹⁹ Section 91A of the NEL.

4 How to make a submission and object to the expedited process

4.1 How to object to an expedited process

The Commission proposes to use an expedited process (eight weeks, one round of consultation) for this rule change for the reasons set out in chapter 2. You can object to this process. We will switch to the standard rule change process if we receive a valid objection.²⁰

Due date: Written objections to the expedited process must be lodged with Commission **by 30 January 2025**.

How to lodge an objection to the expedited process: Go to the Commission’s website, www.aemc.gov.au, find the “lodge a submission” function under the “Contact Us” tab, and select the project reference code ERC0405.²¹

Contents: Objections must set out the reasons why you consider the Rule is not unlikely to have a significant effect on the national electricity market.

Publication: The Commission publishes objections on its website. However, we will not publish materials that we agree are confidential, or that we consider inappropriate (for example offensive or defamatory content, or content that is likely to infringe intellectual property rights).²²

4.2 We encourage you to make a submission

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

We have included questions throughout this paper to guide feedback, and the full list of questions is above. However, you are welcome to provide feedback on any additional matters that may assist the Commission in making its decision.

4.3 How to make a written submission

Due date: Written submissions responding to this consultation paper must be lodged with Commission **by 13 February 2025**.

How to make a submission: Go to the Commission’s website, www.aemc.gov.au, find the “lodge a submission” function under the “Contact Us” tab, and select the project reference code ERC0405.²³

You may, but are not required to, use the stakeholder submission form published with this consultation paper.

Tips for making submissions are available on our website.²⁴

Publication: The Commission publishes submissions on its website. However, we will not publish parts of a submission that we agree are confidential, or that we consider inappropriate (for

20 See section 96 of the NEL. The Commission will consider if the reasons set out in the objection are misconceived or lacking in substance.

21 If you are not able to lodge an objection online, please contact us and we will provide instructions for alternative methods to lodge the objection.

22 Further information is available here: <https://www.aemc.gov.au/contact-us/lodge-submission>

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

24 See: <https://www.aemc.gov.au/our-work/changing-energy-rules-unique-process/making-rule-change-request/submission-tips>

example offensive or defamatory content, or content that is likely to infringe intellectual property rights).²⁵

4.4 For more information, you can contact us

Please contact the project leader with questions or feedback at any stage.

Project leader: Stuart Norgrove
Email: stuart.norgrove2@aemc.gov.au
Telephone: 02 8296 0613

²⁵ Further information is available here: <https://www.aemc.gov.au/contact-us/lodge-submission>

Abbreviations and defined terms

ACE	Adjusted Consumed Energy
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AGE	Adjusted Gross Energy
Appropriate metering	The <i>PFR Incentives Rule</i> defines appropriate metering as metering to allow an eligible unit's individual contribution to the deviation in the frequency of the power system to be assessed, in accordance with the requirements set out by AEMO in the <i>Frequency contribution factors procedure</i> .
ATE	Aggregate Total Energy
ASOE	Adjusted Sent Out Energy
Commission	See AEMC
FCAS	Frequency Control Ancilliary Service
FPP	Frequency Performance Payment
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Electricity Objective
NER	National Electricity Rules
PFR	Primary Frequency Response
Proponent	The proponent of the rule change request
the residual	Units that do not have appropriate metering
TE	Total Energy

A Frequency performance payments and regulation cost allocation from 8 June 2025

The *PFR Incentives Rule* defines the transactions for the frequency performance payments and for the allocation of the costs of regulation services. This process takes effect from 8 June 2025.²⁶

The frequency performance payments transactions

Under the FPP process, eligible units with appropriate metering receive an individual contribution factor based on each unit's active power performance over the dispatch interval.²⁷ The transactions for all other eligible units are based on the aggregate performance of all non-metered units, who are collectively referred to as the "residual". AEMO defines the specification for appropriate metering in the Frequency contribution factors procedure.²⁸

A summary of frequency performance payment transactions in the PFR Incentives Rule is:²⁹

Table A.1: Summary of frequency performance payment transactions

For eligible units with appropriate metering – PFR Incentives Rule clause 3.15.6AA(b)(1):

$$TA = CF \times \frac{Price_{regulation}}{12} \times RCR$$

where:

TA (in \$)	<ul style="list-style-type: none"> the <i>trading amount</i> payable or receivable by the <i>Cost Recovery Market Participant</i>;
CF (a number)	<ul style="list-style-type: none"> the contribution factor for the eligible unit determined by AEMO under paragraph (e) for the relevant trading interval and relevant to the global market ancillary service requirement or local market ancillary service requirement for regulating raise service or regulating lower service;
Price _{regulation} (in \$ per MW per hour)	<ul style="list-style-type: none"> the marginal price of meeting the global market ancillary service requirement or local market ancillary service requirement for the regulating raise service or regulating lower service in that trading interval;
RCR (in MW)	<ul style="list-style-type: none"> the requirement for corrective response determined by AEMO in accordance with the methodology set out in the frequency contribution factors procedure.

For all other eligible units – PFR Incentives Rule clause 3.15.6AA(b)(2):

26 Schedule 2 of the PFR Incentives Rule comes into effect on 8 June 2025. For more information see the Primary frequency response incentive arrangements [project page](#).

27 A default contribution factor may be applied if, in AEMO's reasonable opinion, it is impractical to determine a contribution factor based on data from the relevant trading interval.

28 AEMO's *Frequency contribution factors procedure* is available [here](#).

29 As defined in the *PFR Incentives Rule*, clause 3.15.6AA(a).

$$TA = RCF \times \frac{Price_{regulation}}{12} \times RCR \times \frac{TE}{ATE}$$

where, in addition to the definitions above:

- | | |
|----------------|---|
| RCF (a number) | <ul style="list-style-type: none"> the residual contribution factor for eligible units that do not have appropriate metering, for the relevant trading interval and relevant to the global market ancillary service requirement or local market ancillary service requirement for the regulating raise service or regulating lower service |
| TE (in MWh) | <ul style="list-style-type: none"> the sum of the absolute value of any adjusted gross energy amount, for the Cost Recovery Market Participant for an eligible unit that does not have appropriate metering, for the trading interval. |
| ATE (in MWh) | <ul style="list-style-type: none"> the aggregate of the absolute value of adjusted gross energy amounts for all Cost Recovery Market Participants, for eligible units that do not have appropriate metering, for the trading interval |

The transactions for allocation of regulation enablement costs

The *PFR Incentives Rule* also includes arrangements for the allocation of costs associated with enablement of regulation raise and regulation lower services.³⁰ These arrangements align with the frequency performance payments transactions based on the individual and residual frequency contribution factors.

- PFR Incentives Rule clause 3.15.6AA(c)* sets out how the costs for regulation services used in a dispatch interval will be allocated based on negative contribution factors determined for the dispatch interval.
- PFR Incentives Rule clause 3.15.6AA(d)* sets out how the costs for regulation services not used in a dispatch interval will be allocated based on default contribution factors – which are intended to reflect the longer-term historical performance of eligible units of generation or load.

In each case the cost allocation for the residual participants is based on the proportional share of the Total energy for that unit (TE) divided by the aggregate total energy for all (residual) units without appropriate metering (ATE).

³⁰ As defined in the *PFR Incentives Rule*, clause 3.15.6AA(c) and clause 3.15.6AA(d).

B AEMO's proposed rule

AEMO proposes to revise and clarify the definition of Total Energy (TE) and Aggregate Total Energy (ATE) by removing reference to Adjusted Gross Energy (AGE) and replacing with adjusted consumed energy (ACE) and adjusted sent-out energy (ASOE). These changes are outlined in Table B.1 below:

Table B.1: AEMO's proposed amendments to NER cl. 3.15.6AA(b)(2)

Term	Proposed Amendment
Total Energy (TE)	the sum of the absolute value of any adjusted-gross-energy <u>adjusted consumed energy or adjusted sent out energy</u> amount, for the Cost Recovery Market Participant for an eligible unit that does not have appropriate metering, for the trading interval in the region or regions relevant to the global market ancillary service requirement or local market ancillary service requirement for the regulating raise service or regulating lower service
Aggregate Total Energy (ATE)	the aggregate of the absolute value of adjusted-gross-energy <u>adjusted consumed energy or adjusted sent out energy</u> amounts for all Cost Recovery Market Participants, for eligible units that do not have appropriate metering, for the trading interval for the region or regions relevant to the global market ancillary service requirement or local market ancillary service requirement for the regulating raise service or regulating lower service.

TE and ATE are used in three different elements of the *PFR Incentives Rule*:

1. For allocating FPP costs to participants who comprise the residual³¹
2. For allocation of the costs of regulation FCAS used within a dispatch interval to participants who comprise the residual³²
3. For allocation of costs associated with regulation FCAS not used within a dispatch interval to participants who comprise the residual³³

The specific costs that are being allocated across the residual are distinct in each case, however, the methodology for allocating amongst the group is not. In each case, the proportion of the relevant costs are allocated to each participant according to the ratio of TE to ATE.

³¹ *PFR Incentives Rule* cl. 3.15.6AA(b)

³² *PFR Incentives Rule* cl. 3.15.6AA(c)

³³ *PFR Incentives Rule* cl. 3.15.6AA(d)