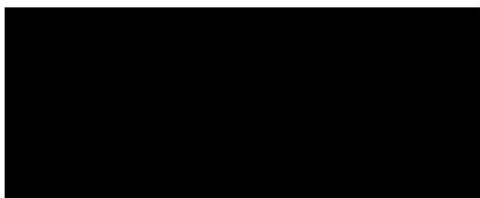




Our ref: D311234
Contact: Lipakshi Dhar

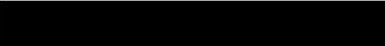
12 June 2026



Sent by email to 

Dear 

Response to request for guidance on the Offer Construction Guideline

I refer to the letter from  dated 15 May 2026 seeking guidance from the Economic Regulation Authority (**ERA**) on the application of the Offer Construction Guideline (**Guideline**) regarding the operation of a new stand-alone battery facility in the Wholesale Electricity Market (**WEM**).

 is seeking guidance on the application of the Guideline to battery offer construction, including opportunity costs, look-ahead horizons, cycling and degradation costs, cost reflectivity, and the assessment of frequent changes to offers (i.e. re-bidding).

The Guideline outlines how the ERA assesses whether price offers are consistent with Economic Price Offers under the Electricity System and Market (**ESM**) Rules. It does not prescribe the treatment of every circumstance, and its application will depend on the relevant facts, including the Facility's characteristics, the Market Service concerned, and the operating circumstances at the time.

As a Market Participant with a Facility allocated to a Material Portfolio under ESM Rule 2.16C.1(c)(ii),  may request guidance from the ERA under ESM Rule 2.16D.5 in relation to the Guideline. In deciding whether it is required to provide guidance, the ERA has taken into account whether the request meets the requirements in ESM Rule 2.16D.6 and other considerations in ESM Rule 2.16D.10.

Table 1 sets out the ERA's responses to the matters raised in  request.

The ERA considers that the Guideline provides a principles-based framework that applies to battery offer construction. Any pricing methodology, regardless of facility type, must be reasonable in the circumstances, objectively justifiable, and capable of independent verification. The Guideline does not require batteries to price strictly at the highest or lowest forecast market price, or to adopt a fixed look-ahead horizon or particular cycling strategy. Rather, these are commercial decisions for the Market Participant within the regulatory framework.

Guidance is not binding and subject to change

Under ESM Rule 2.16D.11, except in relation to ERA's investigations under ESM Rules 2.16C.6 or 2.16C.7, any guidance provided by the ERA is not binding on the ERA, [REDACTED] or any other person; and the ERA may, at any time, reconsider, revise or withdraw any guidance provided.

This response is based on the current version of the ESM Rules (1 May 2026) and Guideline (1 February 2025) respectively.

Further, the ERA is currently reviewing its Guideline and will consult with industry in coming months prior to releasing an updated Guideline. The scope of this review is expected to include, among other matters, additional guidance on battery offers. We welcome engaging with you through this process.

The ERA must publish guidance

Under ESM Rule 2.16D.14, the ERA must publish on its website a public version of this guidance, with any confidential information redacted.

The ERA is *not* required to publish the guidance if it considers that this guidance cannot be redacted to ensure that [REDACTED] identity remains confidential.

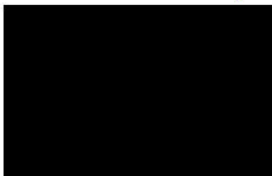
The ERA requests you to, within 15 business days of this letter:

1. Identify what matters, if any, you consider must be redacted, including why a matter is confidential or commercially sensitive.
2. Inform the ERA if you consider that [REDACTED] identity cannot remain confidential even after redaction, and why.

Please refer to the ERA's [confidential information policy](#) for guidance on the types of information the ERA considers can be confidential. If you require additional time to identify the confidential matters as outlined above, please inform the ERA within 15 business days of this letter to discuss alternative arrangements.

Please direct any correspondence related to this matter to Market.Monitoring@erawa.com.au.

Yours sincerely



Rajat Sarawat
Deputy CEO, Energy Markets Division

Table 1: Detailed response to matters raised

Matter	Response
Matter 1 – Determining opportunity costs	
Statement 1a: The Offer Construction Guideline indicates that a standalone battery should be priced predominately based on the opportunity costs of charging and dispatch in different Dispatch Intervals. This approach involves formulating a price based on the 'next best alternative return' from discharging energy in other Dispatch Intervals or for providing other Market Services.	The Guideline does not state that a standalone battery should be priced predominantly on the opportunity cost of charging and dispatch across different Dispatch Intervals. Rather, sections 3.2.5 and 4.6 address the pricing of discharge offers, including by reference to the next best alternative return in the circumstances described. The Guideline does not directly address charging offers.
Statement 1b: Example 19 demonstrates that, when pricing to discharge (inject), a battery would use the highest price forecast over the forecast horizon, which is most likely during its Electric Storage Resource Obligations Intervals (ESROI).	Example 19 illustrates how a battery may construct a discharge offer by reference to the next best alternative return in the circumstances of the example, including during ESROI. However, the Guideline does not state that a battery would use the highest forecast price over the entire forecast horizon, or that the relevant interval will necessarily be within ESROI. Rather, these are matters for the Market Participant to determine within the regulatory framework, having regard to factors such as the battery's state of charge, discharge capability, efficiency losses, and any applicable ESROI obligations.
Statement 1c: While no pricing approach or example is provided for charging it could be implied that, when pricing to charge (withdraw), a battery would use the lowest price forecasts over the forecast horizon to construct its offers. This limited approach to pricing, has the potential to result in perverse outcomes for both the Market and the Market Participant, as pricing at the margin maximises exposure to forecast error, reduces dispatch certainty, increases settlement volatility, and limits value capture.	The ERA acknowledges that the Guideline does not currently provide an equivalent charging example. Charging decisions remain a matter for the Market Participant, having regard to its commercial incentives and operating circumstances within the regulatory framework. The Guideline provides guidance on the maximum price offer supported by efficient variable costs, but it does not prescribe a single pricing strategy or require a Market Participant to offer at the margin.
Query 1.1: <i>Guidance is sought as to whether, consistent with the opportunity cost principles in the Offer Construction Guideline, a price for discharge capacity can be offered at a value lower than forecast price to ensure the facility is dispatched at an optimised MW quantity in the interval where the forecast indicates that the market price for energy will be highest, to more accurately reflect the facility's true opportunity cost across feasible dispatch intervals.</i>	Sections 4.5 and 4.6 of the Guideline require price offers to reflect the opportunity cost of other possible dispatch outcomes, based on the next best alternative return. However, ESM Rule 2.16C.6A restricts offers that exceed Efficient Variable Cost (EVC) of a facility, but does not prevent offers below EVC, subject to any resulting price changes being consistent with Rule 2.16A.3 as addressed in ERA's Trading Conduct Guideline. However, the ERA acknowledges that a discharge price may be lower than the highest forecast price if this reflects the Facility's genuine opportunity

Matter	Response
	cost across feasible dispatch alternatives. Although the Guideline does not include a specific example for every circumstance, the same principles apply and a battery need not offer at the margin.
Query 1.2: <i>Guidance is sought as to whether, consistent with the opportunity cost principles in the Offer Construction Guideline, a price to charge can be offered higher than the lowest forecast price to ensure the battery is dispatched for withdrawal at an optimised MW quantity in the interval where the forecast indicates the market price for energy will be lowest.</i>	The Guideline does not provide a specific charging example, but it does not require a battery to price to charge at the single lowest forecast price over the forecast horizon. A Market Participant may have regard to its commercial incentives and operating circumstances, including matters such as state of charge, charging capability, efficiency losses, and any applicable ESROI obligations. Any charging methodology adopted must remain consistent with the general principles in the Guideline and the ESM Rules, be capable of objective justification, and be to a standard that a reasonable Market Participant could adopt in those circumstances.
Matter 2 – Opportunity cost look ahead horizon	
Statement 2a: Section 4.6 of the Offer Construction Guideline and Example 19, indicate that in forecasting market prices for the purposes of determining opportunity costs, the 'Look Ahead' horizon for 'the next best alternative' is constrained to the Trading Day in which prices are being formulated. In taking this approach, a battery is only likely to be dispatched from the highest priced Dispatch Interval, most likely in the ESROI. This approach concentrates value into a single forecast outcome, increasing exposure to forecast error, dispatch risk and missed infra-marginal value.	Section 4.6 and Example 19 of the Guideline does not constrain the look-ahead horizon to the Trading Day in which prices are being formulated. Example 19 is illustrative of one approach that a battery could adopt in the circumstances described, including where it is a price taker and forecasts prices during a day's ESROI period. The Guideline does not prescribe a single fixed look-ahead horizon for all circumstances. Rather, any methodology used by a Market Participant must be reasonable in the circumstances, capable of objective justification, and not result in persistent over-recovery of costs.
Statement 2b: Given that battery opportunity cost and dispatch risk evolve across different 'Look Ahead' time horizons, guidance is sought on the acceptability of an opportunity cost methodology that considers a short 'Look Ahead' horizon, specifically: Query 2.1: <i>What factors should be used to determine the 'Look Ahead' horizon for forecast energy prices?</i>	The look-ahead horizon can be determined by using a methodology that a reasonable Market Participant could use in the circumstances, having regard to the Facility's operational constraints and feasible dispatch alternatives. Relevant factors may include the battery's state of charge, duration/discharge capability, any applicable ESROI conditions, and AEMO directions. A Market Participant must be capable of objectively justifying the resulting price offer as reflecting the next best alternative return under a reasonable expectation of future market conditions.
Query 2.2: <i>Can a Market Participant use a short 'Look Ahead' horizon, for example 2 hours, over which forecast energy prices are used to determine prices offered for injection and</i>	A Market Participant may use a short look-ahead horizon, such as 2 hours, if the resulting offer prices are based on a methodology that a reasonable Market Participant could use in the circumstances and can be objectively justified as

Matter	Response
<i>withdrawal, to enable greater forecast certainty and flexibility to respond to market fluctuations?</i>	reflecting the next best alternative return under a reasonable expectation of future market conditions. Whether a 2-hour horizon is appropriate will depend on the Facility's operational constraints and feasible dispatch alternatives, including matters such as state of charge, duration, and any relevant operating requirements. The Guideline does not prescribe a fixed horizon for a Trading Day, nor expressly prohibit the horizon from changing, but any approach adopted must be consistently justifiable and independently verifiable.
Matter 3 – Efficient cycling	
Statement 3a: The Offer Construction Guideline states that cycling costs associated with charging and discharging can be included in the formulation of price offers, however it is unclear how these costs can be compliantly incorporated into a Battery pricing strategy consistent with Section 4.6 and Example 19, where forecast market prices are the only consideration.	Section 4.5 of the Guideline indicates that cycling costs may be included in price offers where they form part of a facility's efficient variable costs. Section 4.6 and Example 19 are illustrative examples of how opportunity-cost reasoning may be reflected in a battery's offer construction in the circumstances described. Where cycling costs, degradation costs or other relevant efficient variable costs apply, a Market Participant's offer must remain capable of objective justification as no greater than the reasonable expectation of the sum of the relevant efficient variable costs, consistent with the ESM Rules.
Statement 3b: Guidance is sought on the compliant treatment of degradation and cycling within an opportunity cost based pricing methodology for batteries. Specifically, guidance is requested on: Query 3.1. <i>How degradation costs can be compliantly included in the formation of price offers to enable injection and withdrawal outcomes that facilitate efficient cycling. This would require a pricing strategy that balances when, how often and how deeply the battery cycles, factors that are not considered in an opportunity cost approach.</i>	Degradation costs may be reflected in a battery's price offers to the extent they form part of the EVC of the relevant Market Service and can be objectively justified. The Guideline does not prescribe a specific methodology for balancing when, how often, or how deeply a battery cycles. Rather, a Market Participant must be able to demonstrate that the pricing method it has adopted is one that a reasonable Market Participant could use in the circumstances, and that the resulting offer remains no greater than the reasonable expectation of the relevant EVC. The Guideline does not require or prohibit a particular cycling strategy, provided the offer construction remains justifiable and consistent with the ESM Rules.
Query 3.2: <i>As degradation costs influence the relative value of alternative dispatch opportunities, can degradation be considered as an input to opportunity cost, potentially resulting in prices being offered that are higher or lower than forecast market prices.</i>	The Guideline (p. 43) states that "degradation cost is an incremental cost related to the production of electricity, and therefore, can be included in the formation of price offers." Whether degradation can influence the opportunity cost assessment will depend on the circumstances and whether the resulting price can be supported

Matter	Response
	as reflecting the next best alternative return under a reasonable expectation of future market conditions. The Guideline does not support a general proposition that prices may exceed or depart from forecast market prices solely because of a preferred cycling outcome. Any such approach would need to be demonstrably linked to EVC, be justifiable and be capable of independent verification.
Query 3.3: <i>Can avoided degradation costs be used to reduce prices offered for the purposes of achieving efficient cycling outcomes?</i>	Avoided degradation costs may be relevant only where the resulting offer remains consistent with the efficient variable cost framework and can be objectively justified. The Guideline does not support reducing prices solely to achieve a particular cycling outcome. A Market Participant may choose to offer at a price below the maximum level supported by its efficient variable costs, but any such approach must remain justifiable in the circumstances, linked to the relevant cost framework, and capable of independent verification.
Query 3.4: <i>What factors should be taken into consideration when determining cycling costs and what methodologies should be used?</i>	The factors relevant to determining cycling costs will depend on the characteristics and operating circumstances of the battery, including matters such as battery chemistry, degradation profile, state of charge, depth of discharge, cycle frequency, duration, efficiency losses, warranty limits, and other operational constraints. The Guideline does not prescribe a single methodology for determining those costs. However, any methodology adopted by a Market Participant must be one that a reasonable Market Participant could use in the circumstances, and it must be capable of objective justification, consistently applied in comparable circumstances, and capable of independent verification. To the extent that cycling costs form part of the efficient variable costs of the relevant Market Service, they may be reflected in price offers only where they represent a genuine incremental cost associated with discharging, are not already captured in other cost components (including opportunity cost), and can be objectively justified and independently verified as part of the efficient variable cost framework.
Query 3.5: <i>Can examples of compliant incorporation of cycling costs be provided?</i>	The ERA is currently reviewing the Guideline and developing additional examples for inclusion. The ERA will consult with stakeholder as part of the process to update the Guideline.

Matter 4 – Cost reflectivity

Matter	Response
Statement 4a: Section 2.1 of the Offer Construction Guideline expands on the concepts of 'reasonable expectation' and 'efficient variable costs' (EVC) in the context of an Economic Price Offer consistent with ESM Rule clause 2.16C.6A. The Offer Construction Guideline appears to frame these concepts primarily in reference to conventional generation, where prices offered are typically linked to short-run marginal fuel and operating costs within a single dispatch interval. For batteries, however, price setting and offer construction for injection and withdrawal is inherently dependent on optimisation across multiple dispatch intervals, with value driven by opportunity cost, state-of-charge constraints, and forecast market conditions rather than interval specific variable costs directly associated with the marginal cost of energy production. As a result, these concepts are not readily translatable to battery operation, creating uncertainty as to how Economic Price Offers for batteries should be constructed and how the sum of efficient variable costs will be considered by the ERA under the Offer Construction Guideline.	The Guideline applies the concepts of 'reasonable expectation' and 'efficient variable costs' to all Facility types, including batteries. It recognises that, for batteries, opportunity cost may be a relevant component of efficient variable costs, as reflected in sections 3.2.5 and 4.6. Accordingly, opportunity-cost-based pricing does not depart from the efficient variable cost framework. Rather, it is one way in which efficient variable costs may be identified in the circumstances of battery operation. Any resulting Economic Price Offer must remain no greater than the reasonable expectation of the sum of those costs.
Statement 4e: This offer construction approach is re-enforced in Section 3.2.5, Example 13, Example 14, Section 4.6, and Example 19, and seems inconsistent with the concept of 'reasonable expectation' of 'efficient variable costs', as defined in Section 2.1. This is because pricing based on the "next best alternative return" appears to depart from the efficient variable cost logic.	The 'next best alternative return' approach described in sections 3.2.5 and 4.6 of the Guideline is consistent with the concepts of 'reasonable expectation' and 'EVC'. In the circumstances described for batteries, the Guideline contemplates that pricing may be informed by opportunity-cost reasoning. More generally, opportunity cost may be a relevant component of pricing in some circumstances. For some Facilities, the dominant opportunity cost may be the cost of procuring an additional input at the prevailing market price, while in other circumstances it may be the opportunity associated with limited production capability or scarcity across dispatch intervals.
Query 4.1: <i>Further and more specific guidance is sought to clarify how the concepts of 'reasonable expectation' and 'efficient variable costs' apply to the construction of opportunity cost based offers derived from arbitraging against the highest/next best forecast market price, or forgone revenue and how a Market Participant can demonstrate that its pricing method complies with ESM Rule clause 2.16C.6A.</i>	The ERA acknowledges that further guidance may assist Market Participants to demonstrate how opportunity-cost-based pricing methods may be applied consistently with the concepts of reasonable expectation and efficient variable costs in clause 2.16C.6A, particularly for batteries. As noted above, the ERA is currently reviewing the Guideline and developing additional guidance for inclusion. The ERA will consult with stakeholder as part of the process to update the Guideline. A Market Participant can demonstrate compliance with clause 2.16C.6A by showing that its pricing method identifies the efficient variable cost

Matter	Response
	components relevant to the Facility, including opportunity cost where applicable, and that those costs reflect the next best alternative return available to the Facility at the time the offer is made. The methodology used must be one that a reasonable Market Participant could adopt in the circumstances, be supported by appropriate evidence and assumptions available at the time, and be capable of objective justification and independent verification. The resulting offer must remain no greater than the reasonable expectation of the sum of the relevant efficient variable costs.
Query 4.2: <i>As there is a causal link between battery charge and the dispatch of energy (i.e. it cannot inject electricity if it does not have charge), further guidance is sought to clarify why the cost of charging a battery is not considered a fuel cost given it is an avoidable, dispatch-caused expense that is required to produce the energy output.</i>	The Guideline does not contemplate the cost of charging a battery as equivalent to a conventional fuel cost for the purpose of constructing discharge offers. The Guideline does not currently provide specific guidance on how charging offers must be constructed. More generally, any methodology adopted for the relevant Market Service must remain reasonable in the circumstances, consistently applied in comparable circumstances, and capable of objective justification and independent verification. Section 3.2.5 of the Guideline states that, once charged, a battery's charging costs are sunk, and that the relevant cost of discharging energy at a Dispatch Interval is the expected revenue foregone of not discharging during the highest priced period for Real-Time Market Services over the next charge/discharge cycle. Accordingly, under the current Guideline, the pricing of discharge offers is addressed by reference to opportunity cost once the battery is charged, rather than by treating the earlier charging cost as a fuel cost to be carried through into the discharge offer.
Query 4.3: <i>Can further examples of compliant offer construction approaches for BESS be provided?</i>	As noted above, the ERA is currently reviewing the Guideline and developing additional guidance and examples for inclusion. The ERA will consult with stakeholder as part of the process to update the Guideline.
Matter 5 – Frequent changes to offers	
Query 5.1: <i>In this context, clarification is sought on how opportunity cost based pricing for batteries is expected to be assessed under the market impact and inefficient outcome framework in Section 7. In particular, there is a need to understand how offers that are constructed consistently with the opportunity cost principles set out in the Guideline may be evaluated</i>	Opportunity cost-based offers for batteries will be assessed under the same Section 7 framework as other offers. This assessment will consider whether the offer construction methodology aligns with the Guideline and complies with the ESM Rules. Where a Market Participant demonstrates that its pricing method identifies relevant EVC components – including, where applicable,

Matter	Response
<i>where they differ from prices that would otherwise result from incremental cost based dispatch</i>	opportunity cost – in a manner that is objectively justifiable and consistent with a reasonable expectation of market conditions, this will be a relevant consideration in the ERA’s assessment. However, whether an offer gives rise to an Irregular Price Offer or inefficient market outcomes would remain a matter for assessment on the facts of the particular case, including the resulting market impact and supporting evidence.
Query 5.2: <i>Guidance is therefore sought as to how opportunity cost pricing based on the highest forecast price and frequent changes to offers (frequent rebidding) will be assessed by the ERA from an efficiency and overall market outcomes perspective. This includes clarification on the extent to which responsive (frequent) offer changes, reflecting updated information and opportunity cost, are considered consistent with efficient market operation, while avoiding behaviours that could lead to unintended or inefficient market outcomes</i>	Responsive changes to offers are not, of themselves, inconsistent with Guideline or the ESM Rules. Where a Market Participant updates its offers to reflect new or updated information, including updated forecasts relevant to opportunity cost-based pricing, the resulting offer prices must continue to be based on a methodology that a reasonable Market Participant could use in the circumstances and must be capable of objective justification. The Market Participant must maintain sufficient records and evidence to demonstrate how the updated offers were derived, so that they are capable of independent verification. Whether frequent offer changes give rise to efficiency concerns or inefficient market outcomes would remain a matter for assessment on the facts of the particular case, including the timing, rationale, resulting market impact, and supporting evidence.