



Department of
**Energy and Economic
Diversification**

**Energy
Policy WA**

Capability Class 2 Technologies Review

Information Paper

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Abbreviations

Term	Definition
AEMO	Australian Energy Market Operator
BESS	Battery Energy Storage System
BTM	Behind the Meter
CC2T	Capability Class 2 Technologies
CRC	Certified Reserve Capacity
DEED	Department of Energy and Economic Diversification
DSP	Demand Side Programmes
ELCC	Effective Load Carrying Capability
ESM	Electricity System and Market
ESOO	Electricity Statement of Opportunities
ESR	Electric Storage Resource
ESRDR	Electric Storage Resource Duration Requirement
ESROD	Electric Storage Resource Obligation Duration
ESROI	Electric Storage Resource Obligation Interval
FCESS	Frequency Co-optimised Essential System Service
IBR	Inverter-based Resources
IRCR	Individual Reserve Capacity Requirement
LDM	Linearly Derating Method
LOR	Lack of Reserve
LRC	Low Reserve Condition
MAC	Market Advisory Committee
MP	Market Participant
MW/MWh	Megawatt/Megawatt Hour
NAQ	Network Access Quantity

NCESS	Non-Co-optimised Essential System Service
OEM	Original Equipment Manufacturer
PSSR	Power System Security and Reliability
PV	Photovoltaic
RC	Reserve Capacity
RCM	Reserve Capacity Mechanism
RCOQ	Reserve Capacity Obligation Quantity
RCP	Reserve Capacity Price
RCS	Reserve Capacity Security
RET	Renewable Energy Target
RTM	Real-time Market
SC	Supplementary Capacity
SEO	State Electricity Objective
SOC	State of Charge
SSE	System Stress Event
SWIS	South West Integrated System
TNI	Transmission Node Identifier
WEM	Wholesale Electricity Market
WG	Working Group

Executive summary

The Coordinator for Energy (Coordinator), in consultation with the Market Advisory Committee (MAC) and its Capability Class 2 Technologies Review Working Group (Working Group), and with the assistance of the Australian Energy Market Operator (AEMO) has conducted a review of Capability Class 2 Technologies in accordance with Section 4.13B of the Electricity System and Market (ESM) Rules (the Review).

As part of the Review process, the Department of Energy and Economic Diversification (DEED) published a consultation paper in August 2026, proposing several Review Outcomes to ensure the ESM Rules are fit for purpose as thermal generation retires and decarbonisation efforts ramp up. The proposed Review Outcomes included:

- amendments to the DSP availability obligation intervals to capture intervals where system stress can credibly occur, while accounting for the duration-limited nature of behind-the-meter (BTM) storage; and
- a mechanism to ensure that ESR Facilities have sufficient charge when they are most needed by the system.

This Information Paper provides the final Review Outcomes, which have been informed by stakeholder submissions, consideration of interstate and international frameworks, and further analysis undertaken by DEED and AEMO.

The table below sets out the Review Outcomes and is intended to provide:

- a concise description of each Review Outcome; and
- the supporting policy and technical rationale.

An Exposure Draft of ESM Amending Rules to implement these Review Outcomes is being prepared and will be published separately for consultation.

Review Outcomes and Rationale

Table 1: Summary of Review Outcomes and Rationale

Review Outcomes	Rationale
Outcome 1 Amend the ESM Rules (clause 4.25.2E(a)) to allow AEMO to measure the total energy delivered for assessing ESR performance in a Reserve Capacity Test.	The current rules create a mismatch between how test performance is measured under the ESM Rules and the operational realities of testing an ESR. This Review Outcome aims to change the way AEMO determines the Reserve Capacity Test performance of an ESR, so that total output (including ramping) is measured, thereby allowing ESRs to not be oversized solely to meet testing requirements.
Outcome 2a Amend the ESM Rules to change DSP availability obligation intervals to 8:00 am to 12:00 pm (noon) and 2:00 pm to 10:00 pm on all Business Days. Stakeholder feedback was sought on whether there is justification for a 4:00 am to 8:00 am morning interval instead of the 8:00 am to 12:00 pm (noon).	This Review Outcome aims to align DSP availability with system requirements and encourage the participation of Behind the Meter (BTM) storage in DSP aggregations, while seeking to minimise implementation costs by ensuring neither availability window crosses over two Trading Days. Of the submissions commenting on the two options for the morning window, three supported the 8:00 am to 12:00 pm option, one supported the 4:00 am to 8:00 am option and two noted their indifference.
Outcome 2b Amend the ESM Rules to: - allow a DSP participant to choose only the 2:00pm to 10:00pm window option and receive the Reserve Capacity Price derated by 8/12 to reflect the reduction of the DSP availability. - require that any DSP participant that chooses only the 2:00 pm to 10:00 pm option trades its Capacity Credits through AEMO.	Some large loads cannot restart quickly enough between the morning and evening availability obligation windows. To facilitate their participation as a DSP, this Review Outcome allows participants to opt into the evening availability obligation window only, in exchange for a lower Reserve Capacity Price. Given that DSPs that opt only for the evening obligation window provide reduced level of reliability and the price they receive for their Capacity Credits is lower, these Capacity Credits must be traded directly through AEMO.

Review Outcomes	Rationale
Outcome 2c Amend the ESM Rules to: - remove the option for DSPs to offer availability outside the availability obligation intervals. - allow a DSP to associate different loads within its portfolio to the morning and the evening availability obligation intervals (for every Trading Day) no later than 3 weeks before the effective date. - empower AEMO to conduct Reserve Capacity Tests in the availability windows selected by the DSP.	To streamline DSP Reserve Capacity Certification: - The application process will be simplified by removing the option for DSPs to offer availability outside of the standard availability obligation windows. - DSP providers can change which Associated Loads they plan to use to provide greater portfolio flexibility, provided this is done with sufficient notice. Further Reserve Capacity testing changes are needed to verify that DSPs can meet their Reserve Capacity Obligation Quantity (RCOQ) in the window or windows they have received Capacity Credits for.
Outcome 3 Amend the ESM Rules to allow a DSP participant to have the Capacity Credits associated with a single load reduced and a corresponding portion of the Reserve Capacity Security returned, provided that: - an Associated Load equal or greater than 5 megawatt (MW) ceases operations permanently or for the entirety of a Capacity Year, in which the relevant DSP has Reserve Capacity obligations; - the DSP participant notifies AEMO no later than 1 April in Year 3 of the Reserve Capacity Cycle; and - the relevant Market Participant provides sufficient evidence that the load has ceased operations.	This Review Outcome aims to: - reduce the risk that a DSP provider will be less likely to participate in the RCM if factors outside of its control cause an Associated Load to cease operations, but its Reserve Capacity obligations persist; and - recognise that the Reserve Capacity Requirement will be reduced if a significant DSP Associated Load above a material MW threshold exits the system before the relevant Capacity Year.

Outcome 4a

Amend the ESM Rules to:

- update clause 3.17.11 (the head of power for the Low Reserve Condition (LRC) WEM Procedure) to empower AEMO to incorporate a Lack of Reserve – State of Charge (LOR-SOC) condition that applies to ESR with a Peak RCOQ into the LRC Framework;
 - The declaration of an LOR-SOC condition triggers the state of charge (SOC) obligation on the ESR fleet comprising ESRs with a Peak RCOQ;
 - The LRC WEM Procedure will also be amended to outline:
 - the system conditions under which the LOR-SOC obligations will apply; and
 - the methodology AEMO will use to determine the SOC obligation level.
- allow AEMO to withdraw a LOR-SOC condition if it determines it is no longer necessary;
- specify the notification time requirements for AEMO when declaring a LOR-SOC condition:
 - AEMO must use best endeavours to declare the LOR-SOC condition, including SOC obligations by 8:00pm on the Scheduling Day; and
 - AEMO must declare the LOR-SOC condition, including SOC obligations no later than 8:00am on the Trading Day,
- specify that the LOR-SOC obligation will be for a uniform charge level applicable to all ESR Facilities with Reserve Capacity obligations, and that these Facilities must be at that level at the start of their relevant ESROIs;

Analysis shows that system stress events requiring ESRs to be charged to a certain level, are infrequent but have the potential to impact Power System Security and Reliability (PSSR). The infrequent nature of these events does not justify a re-design of the market. Targeted AEMO intervention when these events arise provides a more effective and simpler approach to implementation.

This Review Outcome aims to empower AEMO during these infrequent periods when appropriate ESR SOC levels are required to meet the upcoming evening peak obligation, and AEMO determines that ESR discharge is necessary to prevent the risk of unserved energy.

The ESM Rules will define the information that must be included in the WEM Procedure. This Review Outcome would ensure full transparency for Market Participants regarding how and when the new LOR-SOC obligation will be applied.

Review Outcomes	Rationale
• specify the information that must be made available to the relevant Market Participants to provide a reasonable level of certainty about the system stress event occurring; and • specify that the SOC obligation applies to an ESR Facility's remaining available capacity to account for outages.	
Outcome 4b Amend the ESM Rules to provide that, on a Trading Day when an LOR-SOC condition is in effect, AEMO must: • apply Constraint Equations to prevent ESRs from being dispatched for Injection before their relevant ESROIs, unless they are instructed by AEMO to provide FCESS or energy to maintain PSSR; and • apply Constraint Equations to prevent ESRs from being dispatched for withdrawal during their ESROIs and during the ESROIs of other ESRs, unless they are instructed by AEMO to provide FCESS or energy to maintain PSSR.	Option 1 (AEMO applying constraint equations) was preferred over Option 2 (Market Participants submitting zero Offer quantities) as it is better aligned with maintaining PSSR and reducing implementation complexity. Of the nine submissions on this proposal, five supported option 1 while one supported option 2.
Outcome 5 Amend the ESM Rules to introduce an addition to the current refund mechanism that doubles the ESRs refund rate for Trading Intervals in which an LOR-SOC mandate applies.	The analysis indicates that the existing refund mechanism, on its own, may not incentivise compliance with Reserve Capacity or LOR-SOC obligations during system stress events. This Review Outcome aims to incentivise appropriate behaviour of ESRs and ensure that other technology types are not adversely affected. The change is designed to minimise implementation costs, while providing a simple enhancement to the financial incentives for ESRs to comply with the LOR-SOC obligation.

1. Review background and process

The Coordinator of Energy (Coordinator) is required to review the Electricity System and Market (ESM) Rules related to Capability Class 2 technologies (i.e. Electric Storage Resources (ESRs) and Demand Side Programmes (DSPs)), in accordance with section 4.13B of the Electricity System and Market (ESM) Rules at least once every five years.

Throughout the Capability Class 2 Technologies (CC2T) Review, Department of Energy and Economic Diversification (DEED) worked closely with stakeholders, including the Market Advisory Committee (MAC) and its CC2T Working Group (Working Group), and the Australian Energy Market Operator (AEMO), to review the ESM Rules related to the Capability Class 2 Technologies.

As part of the review process, DEED published a consultation paper in August 2026, proposing Review Outcomes to ensure the ESM Rules are fit for purpose as thermal generation retires and decarbonisation efforts ramp up.

Submissions were received from 11 parties with none making a confidential submission. A summary of the public submissions, and DEED's response, can be found in Appendix A.

Stakeholder submissions broadly supported the changes. Key themes during the consultation included:

- Support for splitting the DSP availability window and enabling participation in one or both as a simple and practical way of bringing more demand response into the market.
- The need for clarity and transparency on the details on how the LOR-SOC condition would be triggered and exactly how the uniform SOC level would be calculated. DEED notes that the implementation details will be consulted on as part of the ESM Rules and the WEM Procedure Change process.
- The need for reporting and monitoring of LOR-SOC conditions and market outcomes to ensure the SOC mandate is functioning as intended.

This paper sets out the Review Outcomes for the CC2T review, including:

- Allowances for ramping during ESR Reserve Capacity testing;
- DSP availability obligation intervals;
- Allowances for reduction in DSP Capacity Credits where associated loads cease operations; and
- ESR SOC obligations and compliance/refunds.

This paper is for information only, presenting the Review Outcomes for proposals to amend the ESM Rules. An Exposure Draft of the rule changes will be published separately.

Appendix A provides a summary of stakeholder feedback in response to the CC2T Review Consultation Paper and DEED's responses to the feedback.

Appendix B provides a summary of items that were considered during the Review but did not result in proposed changes.

2. ESR Reserve Capacity Testing

ESM Rule 4.25.2E requires AEMO to assess the Reserve Capacity Test performance of an ESR as “the average performance across its Peak Electric Storage Resource Obligation Duration (ESROD) based on the average performance across the Trading Intervals.” In practice, ESR consumes energy when ramping to its Required Level and again when ramping down to its minimum discharge depth. This results in a mismatch between how test performance is defined in the ESM Rules and the operational realities of testing an ESR. This is illustrated in Figure 1 below.

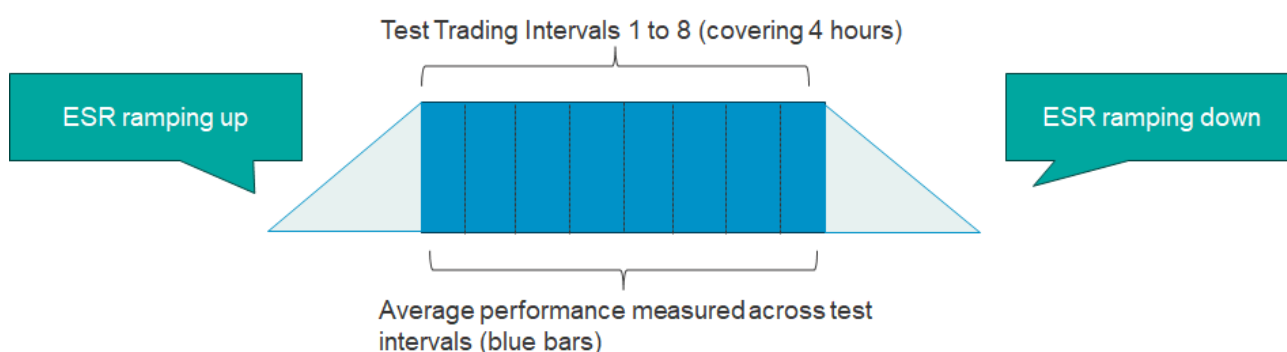


Figure 1: Example of ESR ramping up to RCOQ for a Reserve Capacity Test then ramping down

Unless the ESR is oversized (i.e. able to deliver more than its RCOQ), performance during the test intervals will be lower than the ESR’s average Required Level. The proposal in the consultation paper aimed to address the issue by allowing AEMO to assess ESRs by its total energy delivered, i.e., including the area under the trapezium, to more accurately reflect its maximum discharge capability.

Proposal 1: Amend the ESM Rules (including clause 4.25.2E(a)) to allow AEMO to measure the total energy delivered for assessing ESR performance during Reserve Capacity Tests

Submissions generally supported the proposal and its intent.

Alinta Energy noted that there may be benefit in amending the Reserve Capacity testing rules to allow an ESR whose ESROD is greater than its nameplate duration to be tested over a duration shorter than its ESROD to mitigate disruptions to an ESR’s operations.

DEED notes that the purpose of Reserve Capacity Testing is to verify whether an ESR can provide its Required Level over the Trading Intervals comprising its ESROD (i.e. the ESR Duration Requirement (ESRDR)). Hence, irrespective of an ESR being under-sized relative to its ESROD, the ESR must still be tested over its ESRDR to verify compliance against its Required Level.

Review Outcome 1

Amend the ESM Rules (including clause 4.25.2E(a)) to allow AEMO to measure the total energy delivered for assessing ESR performance during Reserve Capacity Tests.

3. DSP Availability Obligations

Demand-side response is incorporated into the WEM via the concept of DSPs. DSPs are a specific Facility Class comprising one or more Non-Dispatchable Loads (located at the same Transmission Node Identifier (TNI)) with the capability to reduce their withdrawal or increase their injection in response to an instruction from AEMO.

DSPs inherently have lower availability than Capability Class 1 and Capability Class 3 facilities, as service provision depends on the flexibility of the associated loads. To account for these availability limitations, the ESM Rules include specific provisions prescribing when DSPs must be available.

In the consultation paper, four DSP availability options were considered:

1. Split availability window, in which DSP must be available between 6:00 am to 10:00 (4 hours) and 2:00 pm to 10:00 (8 hours). Behind the meter (BTM) storage in DSPs also have four hours to charge if activated in the morning (10:00 am to 2:00 pm).
2. Split availability window, in which Market Participants can choose to be available for both 8:00 am to 12:00 pm (4 hours) and 2:00 pm to 10:00 pm (8 hours) windows, or opt for the evening only obligation availability window. Should the Participant choose the evening only option, its DSP's Reserve Capacity Price will be derated (8/12).
3. Include DSPs in ESRDR calculation, in which AEMO will calculate the availability requirement based on intervals with insufficient CC2 capacity to meet demand. DSPs will not have the same grandfathering arrangements as ESRs, but should meet their Peak DSP Dispatch Requirement as calculated.
4. DSP availability obligation intervals will be determined annually based on a Peak DSP dispatch requirement, determined by comparing reference demand profiles for Capability Class 3 Effective Load Carrying Capability (ELCC) calculations to the 50% possibility of exceedance/median growth load profile.

MAC and Working Group members expressed support for Option 2 but noted that reliability shortfalls are more likely to occur during in the morning window (before 8:00 am) relative to after 8:00 am, due to lower rooftop solar output and the possibility that ESRs may not be fully charged. There are currently no obligations for ESRs to be available before 8:00 am. While the review acknowledged that system stress is more likely to manifest before 8:00 am (versus after 8:00 am), no such events have been observed historically.

The proposed Review Outcome was to amend the ESM Rules to change the DSP availability obligation intervals according to Option 2, to better align the policy with system reliability needs while minimising implementation costs.

Proposal 2a: Amend the ESM Rules to change DSP availability obligation intervals to 8:00 am to 12:00 pm (noon) and 2:00 pm to 10:00 pm on all Business Days

Stakeholder feedback was also sought on whether the morning window obligation should be changed to 4:00 am to 8:00 am.

Of the six submissions commenting on this proposal:

- Three submissions supported the 8:00 am to 12:00 pm window;
- One supported the 4:00 am to 8:00 am window; and
- Two submissions noted insufficient evidence for changing the existing availability arrangements.

DEED reiterates the Consultation Paper findings related to the 2025 ESOO, noting the potential of requiring DSP dispatch after 8:00 pm to avoid unserved energy and AEMO procuring Supplementary Capacity to fill the reliability gap between 8:00 pm to 10:00 pm, as a result.

Review outcome 2a

Amend the ESM Rules to change DSP availability obligation intervals to 8:00 am to 12:00 pm (noon) and 2:00 pm to 10:00 pm on all Business Days.

Proposal 2b: Allow a DSP to choose only the evening window option

Amend the ESM Rules to:

- allow a DSP participant to choose only the 2:00 pm to 10:00 pm window option and receive the Reserve Capacity Price derated by 8/12 to reflect the reduction of the DSP availability; and
- require any DSP participant that chooses only the 2:00 pm to 10:00 pm obligation window to trade its Capacity Credits through AEMO.

Submissions generally supported the proposal and its intent.

Derating of Reserve Capacity Price

Alinta Energy expressed concerns about treating the Capacity Credits with the derated price as equivalent to other Capacity Credits due to them offering reduced reliability. DEED notes that this issue is addressed by ensuring that Capacity Credits allocated to DSPs, for which the participant chooses only the 2:00 pm to 10:00 pm window obligation, can only be traded through AEMO.

Enel X noted that DSPs opting for an evening only availability obligation window provide a greater benefit to the system than DSPs that are available during the morning window only. It argued that DSPs should receive a greater compensation than the proposed 8/12 derated Reserve Capacity Price. DEED notes:

- DSPs providing capacity during the evening window provide less benefit to the SWIS than a DSP that is available during both windows.
- To weight the price received by evening window only DSPs differently to morning only DSPs, a mechanism is needed to value the capacity provided by each group. This would require Effective Load Carrying Capability (ELCC) type modelling to quantify the marginal reliability impact of an evening only DSP versus a morning only DSP. The

Working Group was unanimously of the view that an ELCC approach was not desirable for assigning capacity to DSPs.

- In the absence of a marginal reliability impact measure, the most prudent approach to weight the Reserve Capacity Price is by using the proportional availability of each group (relative to the full 12-hour requirement).

Ability of residential batteries to meet long-duration or early morning availability obligations

MAC members noted that residential batteries can meet long duration availability obligations if they discharge at lower rates over a longer period. While DEED acknowledges this, requiring DSPs with BTM storage to be available during a 12-hour continuous window mean that the storage would be unable to be charged by the BTM PV system during peak solar hours. DEED notes that the option to discharge at a lower rate would be available to those DSPs who choose to participate during the 8-hour evening window.

MAC members also noted that residential batteries could provide a response during early morning periods (6:00 am to 8:00 am) if they charged from the grid. However, while community batteries are configured to charge from the grid, it is unclear whether residential batteries are configured to do so and AEMO does not have visibility of these assets.

Review outcome 2b

Amend the ESM Rules to:

- allow a DSP participant to choose only the 2:00 pm to 10:00 pm window option and receive the Reserve Capacity Price derated by 8/12 to reflect the reduction of the DSP availability; and
- require any DSP participant that chooses only the 2:00pm to 10:00pm obligation window to trade its Capacity Credits through AEMO.

Proposal 2c: Streamline DSP Reserve Capacity Certification

Amend the ESM Rules to:

- remove the option for DSPs to offer availability outside the availability obligation intervals;
- allow a DSP to associate different loads within its portfolio to the morning and the evening availability obligation intervals (for every Trading Day) no later than 3 weeks before the effective date; and
- empower AEMO to conduct Reserve Capacity Tests in the availability windows selected by the DSP.

Submissions generally supported the proposal and its intent.

Enel X noted concerns about disruptive impacts on Associated Loads, if DSPs participating in both availability windows are subjected to separate Reserve Capacity Tests in each window. DEED notes that AEMO requires assurance that DSPs can provide a

response during the windows that they have been assigned Capacity Credits for. To address disruptive impacts on Associated Loads, DEED proposes that DSPs participating in both windows can be tested in each window on separate days.

Review outcome 2c

Amend the ESM Rules to:

- remove the option for DSPs to offer availability outside the availability obligation intervals;
- allow a DSP to associate different loads within its portfolio to the morning and the evening availability obligation intervals (for every Trading Day) no later than 3 weeks before the effective date; and
- empower AEMO to conduct Reserve Capacity Tests in the availability windows selected by the DSP.

4. Return of DSP Reserve Capacity Security if a large load ceases

If a large (equal to or greater than 5 MW) Associated Load ceases operations or enters extended care and maintenance for the duration of a Capacity Year, for which the relevant DSP has Capacity Credits, the DSP participant is required by the ESM Rules to associate another load behind the same TNI. However, securing a large load that is both capable of and willing to curtail consumption at short notice at a specific TNI can be challenging and is unlikely to be successful.

Two options were assessed on the Consultation paper:

1. Allow the DSP to recruit and associate another load at a TNI that AEMO has deemed to be unconstrained under clause 4.15.16A. This option was not progressed due to the risk of adversely affecting other facilities. AEMO has advised that if DSPs were allowed to associate additional load at unconstrained locations, then the Network Access Quantity (NAQ) originally assigned to the loads will not accurately reflect their contribution to meeting peak demand.
2. Return the Reserve Capacity Security as no replacement capacity to cover the exiting load is needed. A large load that ceases operation will reduce its unscheduled operational demand, and thus, AEMO will not be required to procure replacement capacity through the Supplementary Capacity mechanism. This option is relatively simple to implement and does not have any adverse impact on power system reliability.

Proposal 3: Amend the ESM Rules to allow a DSP participant to have the Capacity Credits associated with a single load reduced and a corresponding portion of the Reserve Capacity Security returned

The security deposit would only be returned provided that:

- an Associated Load equal or greater than 5 megawatt (MW) ceases operations permanently or for the entirety of a Capacity Year, in which the relevant DSP has Reserve Capacity obligations;
- the DSP participant notifies AEMO no later than 1 April in Year 3 of the Reserve Capacity Cycle; and
- the relevant Market Participant provides sufficient evidence that the load has ceased operations.

The ESM Rules are also proposed to be amended to prevent the Associated Load that ceased operations permanently, or on an extended basis, from participating in Supplementary Capacity for the upcoming Capacity Year.

Submissions generally supported the proposal and its intent.

Alinta Energy noted that the proposal is inequitable as exiting generators are not subject to the same rule. DEED notes that an exiting generator creates the need for replacement capacity whereas an exiting Associated Load does not. Also a large exiting load decreases system demand and the Reserve Capacity Target. DEED acknowledges, however, that AEMO will need robust evidence that the load is exiting permanently to avoid gaming.

Enel-X has suggested that small Associated Loads (less than 5 MW), including DSPs certified under ESM Rule 4.10.1B, should also be allowed access to a refund of the security deposit.

DEED notes the following:

- DEED considers that extending the proposal to loads that are less than 5MW, would both create security and reliability risks, and lead to costs to consumers.
- Aggregated DSPs may comprise a large number of Associated Loads with sizes smaller than those specifically taken into account in AEMO's demand forecasts. DEED understands that AEMO reflects the ongoing exit and entry of small loads in its forecast but does not include loads with sizes smaller than 5 MW specifically. Therefore, the impact of multiple small loads exiting the RCM will not result in a corresponding decrease to the forecast Reserve Capacity Target in practice.

Review Outcome 3

Amend the ESM Rules to allow a DSP participant to have the Capacity Credits associated with a single load reduced and a corresponding portion of the Reserve Capacity Security returned, provided that:

- an Associated Load equal or greater than 5 megawatt (MW) ceases operations permanently or for the entirety of a Capacity Year in which the relevant DSP has Reserve Capacity obligations;
- the DSP participant notifies AEMO no later than 1 April in Year 3 of the Reserve Capacity Cycle; and
- the relevant Market Participant provides sufficient evidence that the load has ceased operations

The ESM Rules are also proposed to be amended to prevent the Associated Load that ceased operations permanently, or on an extended basis, from participating in Supplementary Capacity for the upcoming Capacity Year.

5. Review Outcome for State-of-Charge Obligations during Low Reserve Conditions

One of the issues examined by the Review was whether the RCM provides adequate incentives for an ESR to be sufficiently charged to meet its Peak RCOQ.

The Consultation Paper included a Current-State Technical analysis that reviewed the ESR charge levels for five System Stress Events, in which large ESR Facilities entered their ESROIs with low State-of-Charge (SOC).

The analysis showed that the system stress events that coincided with ESR facilities having a low SOC, while currently infrequent, have the potential to impact PSSR. The infrequent nature of these events does not justify a redesign of the market. Instead, targeted AEMO intervention when such events arise provides a more effective and simpler approach to implementation.

Proposal 4a: Introduce a Lack of Reserve – State of Charge condition

Amend the ESM Rules to:

- update clause 3.17.11 (the head of power for the LRC WEM Procedure) to empower AEMO to incorporate a Lack of Reserve – State of Charge (LOR-SOC) condition into the Low Reserve Condition Framework that applies to Peak Certified ESR:
 - the declaration of an LOR-SOC condition triggers the state of charge (SOC) obligation on the ESR fleet comprising ESRs with a Peak Reserve Capacity Obligation Quantity;
 - The LRC WEM Procedure will also be amended to outline:
 - the system conditions under which the LOR-SOC obligations will apply; and
 - the methodology AEMO will use to determine the SOC obligation level.
- allow AEMO to withdraw a LOR-SOC condition if it determines they are no longer necessary;
- specify the notification timings for AEMO when declaring a LOR-SOC condition:
 - AEMO must use best endeavours to declare the LOR-SOC condition and SOC obligations by 8:00pm on the Scheduling Day; and
 - AEMO must declare the LOR-SOC condition and SOC obligations no later than 8:00am on the Trading Day,
- specify that the LOR-SOC obligation will be for a uniform charge level applicable to all ESR Facilities with Reserve Capacity obligations, and that these Facilities must be at that level at the start of their relevant ESROIs;
- specify the information that must be made available to relevant Market Participants to provide a reasonable level of certainty about the event occurring; and

- specify that the SOC obligation applies to an ESR Facility's remaining available capacity to account for outages.

While some submissions supported the proposal and its intent, there were two main concerns:

1. Submissions indicated concern that insufficient detail has been provided on:
 - how the LOR-SOC condition would be triggered;
 - how the uniform charge level obligation will be calculated;
 - how the notification process will work in practice to ensure ESR operators receive sufficient notice about any SOC mandate and to ensure AEMO withdraws a LOR-SOC notice if low reserve conditions are no longer forecast for the ESROIs on the relevant Trading Day.
2. Submissions noted the need for transparent reporting and monitoring of LOR-SOC conditions and SOC obligations.

DEED notes these Market Participant concerns, which will be addressed during the implementation stage. Additionally:

- AEMO is required to conduct reporting on LOR conditions already. As part of implementation, further reporting and monitoring requirements will be developed to ensure Proposal 2a functions as intended.
- The implementation of Proposal 2a will require changes to the existing Low Reserve Conditions WEM Procedure, which will be subject to consultation.

Review Outcome 4a

Amend the ESM Rules to:

- update clause 3.17.11 (the head of power for the LRC WEM Procedure) to empower AEMO to incorporate a Lack of Reserve – State of Charge (LOR-SOC) condition into the Low Reserve Condition Framework that applies to Peak Certified ESR:
 - the LOR-SOC condition declaration is the trigger for imposing a State of Charge (SOC) obligation on the ESR fleet certified for Peak Certified Reserve Capacity.
 - The LRC WEM Procedure will also be amended to outline:
 - under what system conditions the LOR-SOC obligations will apply; and
 - the methodology AEMO will use to determine the SOC obligation level.
 - allow AEMO to withdraw a LOR-SOC condition if it determines they are no longer necessary;
- specify the notification times for AEMO when declaring a LOR-SOC condition:
 - AEMO must use best endeavours to declare the LOR-SOC condition and SOC obligations by 8:00pm on the Scheduling Day; and
 - AEMO must declare the LOR-SOC condition and SOC obligations no later than 8:00am on the Trading Day,

- specify that the LOR-SOC obligation will be a uniform charge level applicable to all Peak Certified ESR Facilities, and that all ESR Facilities must be at that level at the start of their relevant ESROIs;
- specify the information that must be provided to ESR participants to provide them a reasonable level of certainty regarding the event; and
- specify that the obligation applies to the remaining available capacity of ESRs, taking outages into account.

Proposal 4b: Amendments to enable compliance with an LOR-SOC mandate

Amend the ESM Rules to implement one of the following options.

1. Amend the ESM Rules to empower AEMO to apply Constraint Equations to:
 - constrain ESRs from being dispatched for injection before its peak ESROIs, unless required to provide FCESS or other services to maintain PSSR on a Trading Day when a LOR-SOC is in effect;
 - to constrain ESRs from being dispatched for withdrawal during their peak ESROIs and during the peak ESROIs of any other ESRs, unless required to provide FCESS or other services to maintain PSSR on a Trading Day when a LOR-SOC is in effect;
2. Amend the ESM Rules to:
 - prevent ESRs from charging during their peak ESROIs and during the peak ESROIs of any other ESRs on a Trading Day when a LOR-SOC is in effect, except when AEMO instructs them for FCESS or system reliability purposes; and
 - allow ESR facilities to make zero quantity offers for energy injections and bids for zero Withdrawal outside of their peak ESROIs on a Trading Day when a LOR-SOC Charge is in effect.

Option 1 (AEMO applying constraint equations) was preferred over Option 2 (Market Participants submitting zero Offer quantities) as it is better aligned with maintaining PSSR and reducing implementation complexity. Specifically, AEMO noted in its submission that:

- Option 1 enables AEMO to retain visibility of the physically available ESR capacity, so that AEMO can dispatch the ESR to inject energy as necessary during the SOC mandate. The level of visibility under Option 2 would be much more restricted and would require more operational preparation ahead of Low Reserve Condition events.
- The implementation of Option 1 is likely to be more straightforward by avoiding the complexity of configuring WEMDE to work with 0 MW bids and offers, as required under Option 2. It, therefore, potentially offers a quicker and lower cost solution.

Of the nine submissions on this proposal, five supported option 1 while one supported option 2.

FiNESS' submission raised a concern on how the constraint equation will apply to hybrid facilities. DEED clarifies that Proposal 4b is designed to only apply to Facilities registered as a standalone ESR. AEMO dispatches all Facilities at the "sent out" SWIS connection and therefore cannot dispatch just the ESR component of a hybrid Facility. AEMO has advised that the effort involved in designing constraints and processes to prevent export from the ESR component of a hybrid Facility to be impractical.

AEMO has further advised that:

- Some hybrid Facilities are likely to be configured in a way that either precludes or reduces the effectiveness of constraints as a means of ensuring the battery component retains sufficient charge i.e. they may charge solely from BTM generation (wind and/or solar).
- The increased risk of insufficient charge is associated with the increasing volumes of standalone ESR. The capacity associated with hybrid Facilities is currently low, so the complexity of including them under Proposal 4b at the moment does not appear warranted.

Review Outcome 4b

Amend the ESM Rules to empower AEMO to apply Constraint Equations to:

- constrain ESRs from being dispatched for injection before its peak ESROIs, unless required to provide FCESS or other services to maintain PSSR on a Trading Day when a LOR-SOC is in effect;
- to constrain ESRs from being dispatched for withdrawal during their peak ESROIs and during the peak ESROIs of any other ESRs, unless required to provide FCESS or other services to maintain PSSR on a Trading Day when a LOR-SOC is in effect.

6. Review Outcome for New Charge Shortfall Refund for SOC Obligations

One of the issues examined by the Review was whether the RCM provides adequate incentives for an ESR to be available during its ESROIs. For instance, the events examined in the Current-State Analysis, in which large ESRs failed to have adequate SOC as they entered their ESROIs, demonstrated the need for embedding incentives for compliance within the proposed LOR-SOC mandate.

The evidence suggests that the existing refund mechanism on its own does not provide sufficiently strong incentive for ESRs to be available during their peak ESROIs. There is an option to add an ESR-only or LOR-SOC obligation only provision to the refund mechanism, to avoid having unnecessary impact on other technology type. The amendment must also have minimal implementation cost and complexity.

Proposal 5: Introduce an addition to the current refund mechanism for ESRs when a LOR-SOC mandate applies

The refund will apply only to ESR Facilities and only when a LOR-SOC condition has been declared by AEMO.

ESR Facilities will pay twice the amount of refunds they usually pay for failing to offer their RCOQ when a SOC obligation applies.

Five of the submissions supported the proposal.

Submitters who did not support the proposal questioned the need for an additional refund directed at ESR only when a Reserve Capacity refund regime already exists.

DEED notes that the Technical Analysis conducted for the Consultation Paper showed that, during some System Stress Events, ESR Facilities entered their ESROIs only with a partial charge. During the morning of those events, the ESRs discharged energy and made revenues in excess of their refund exposure during the ESROIs. This indicates that the refund mechanism on its own may not incentivise compliance with the Reserve Capacity obligations when an LOR-SOC condition applies.

Review Outcome 6

Amend the ESM Rules to introduce an addition to the current refund mechanism for ESRs when a LOR-SOC mandate applies.

The refund will apply only to ESR Facilities and only when a LOR-SOC condition has been declared by AEMO.

ESR Facilities will pay twice the amount of refunds they usually pay for failing to offer their RCOQ when a SOC obligation applies.

Appendices

Appendix A. Response to stakeholder submissions

Stakeholder	Stakeholder Feedback	DEED's Response
No amendments proposed: • The Linearly Derated Method (LDM) for assigning Certified Reserve Capacity for ESRs will be retained. • The current approach for determining Electric Storage Resource Obligation Intervals (ESROIs) will be retained. • No changes will be introduced to tie-break different configurations of Capability Class 2 facilities within the Network Access Quantity (NAQ) prioritisation.		
The following stakeholders indicated that they support or generally support the proposal: • Alinta Energy • Perth Energy • Synergy • Tesla		

Neoen	Neoen supports retaining the LDM as the method to determine CRC for ESR. However, Neoen does not support maintaining the current approach in setting ESROI. Neoen believes that ESROI should be linked to actual peak demand instead of a fixed calendar window as it will less likely lead to suboptimal market pricing. This is evidenced by Figure 7 of the CC2T Review Consultation Paper where spring mornings will require ESR dispatch by 2030-31.	DEED notes: • The ESROIs are set based on the timing of peak demand and periods of high system stress. The future-state modelling in the Consultation Paper dispatched ESR to avoid unserved energy. This analysis indicated that in the short to medium term, ESR dispatch is most likely to be required during the evening peak period. Figure 7 in the Consultation Paper forecasted some ESR dispatch during spring mornings. However, these small average quantities are driven by unserved energy occurring in a few Monte Carlo iterations. For example, if one of the 180 iterations required 300 MW of ESR injection in a Trading Interval to avoid unserved energy, this would appear in the results as an average of 1.667 MW. Accordingly, these low levels of forecasted ESR dispatch do indicate a statistically meaningful trend. • AEMO has the ability to shift ESROIs on any given Scheduling Day if a peak event is forecast not to overlap with the prescribed ESROIs.
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FiNESS	FiNESS seeks clarification on two issues related to retaining the LDM: • FiNESS queries how long the grandfathering of Duration Requirements is intended to continue and on what basis. FiNESS also suggests that the quantum of the ESR Duration Requirement Uplift and its cost be published, so that the transfer between incumbent and new capacity is visible to the participants funding it • FiNESS also queries how the degradation input to the Linearly Derating Methodology is intended to apply to a technology whose maximum Charge Level capability does not degrade with cycling	Regarding FiNESS' first point, DEED notes the following: • There is no intention to remove grandfathering of ESR Duration Requirements at present. • This would be re-examined in the next Capability Class 2 Technologies Review, which will include the Availability Duration Gap and ESR Obligation Duration Uplift calculations in its scope (this review did not as these features of the ESM Rules had not been in place long enough to warrant a meaningful review). • Regarding publication of the ESR Obligation Duration Uplift quantity, DEED notes that this is already published as part of the Electricity Statement of Opportunities (ESOO). Regarding FiNESS's second point DEED notes that: • For the purposes of certification, AEMO requires evidence of the battery's Maximum Charge Level capability over its life as warranted by the OEM. • If a battery's output does not degrade over time, then its OEM warranty should indicate this, which would mean that the Charge Level of the ESR should remain unchanged over its technical life. • Hence the Linearly Derated Methodology would not derate the capacity of that battery.
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Proposal 1:

Amend the ESM Rules (including clause 4.25.2E(a)) to allow AEMO to measure the total energy delivered for assessing ESR performance during Reserve Capacity Tests

The following stakeholders indicated that they support or generally support the proposal:

- AEMO
- Alinta Energy
- Expert Consumer Panel (ECP)
- Neoen
- Perth Energy
- Synergy
- Tesla

Alinta Energy

Alinta Energy supports the proposal to include the total energy delivered in assessing ESR performance during Reserve Capacity Tests as it aligns with physical reality of ESRs.

Alinta Energy also notes that ESRs should be permitted to discharge their full capacity for a period shorter than their ESROD within the ESROI, provided that they deliver the required energy outcome. This would allow ESRs to demonstrate compliance through observation under relatively normal market conditions while avoiding more disruptive market impacts associated with requiring sustained generation at the RCOQ level for the full ESROD.

DEED notes that the purpose of Reserve Capacity Testing is to verify whether an ESR can provide its Required Level over the Trading Intervals comprising its ESROD (i.e. the ESR Duration Requirement (ESRDR)). Hence, irrespective of an ESR being under-sized relative to its ESROD, the ESR must still be tested over its ESRDR to verify compliance against its Required Level.

Tesla	Tesla supports the proposal to include the total energy delivered in assessing ESR performance during Reserve Capacity Tests. Tesla notes the following recommendations: • Drafting should explicitly allow integration of sent-out energy over the full test envelope, including ramps, with a clear meter/SCADA specification in the WEM Procedure. • Provide worked example in Procedure (Level, ramp rates, pass threshold) before rule commences. • Ensure change applies to all ESR Separately Certified Components, including hybrids' storage components.	DEED notes Tesla's support for the proposal and the list of recommendations for the next steps of implementing the proposal.
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Proposal 2a:

The proposed Review outcome is that the ESM Rules are amended to change DSP availability obligation intervals to 8:00 am to 12:00 pm (noon) and 2:00 pm to 10:00 pm on all Business Days.

However, stakeholder feedback will be sought on whether the morning window obligation should be changed to 4:00 am to 8:00 am.

The following stakeholders indicated that they support or generally support the proposal:

- AEMO
- Enel X
- Expert Consumer Panel (ECP) (support for 8:00am to 12:00pm)
- Perth Energy
- Synergy

Alinta Energy	Alinta Energy does not support the proposed changes to the DSP availability obligations. Alinta Energy believes that the existing DSP availability framework remains appropriate and that the proposed amendments would only introduce additional regulatory complexity for limited operational and reliability benefit. Recent market reforms have already introduced significant changes to the operation of DSPs and the RCM, and further amendments risk increasing complexity without delivering a commensurate market benefit. Alinta Energy also does not see a compelling justification for a morning availability window of 4:00 am to 8:00 am when compared to the proposed 8:00 am to 12:00 pm period.	DEED notes that ESM Amending Rules to split the DSP availability obligation intervals have already been made by the Minister for Energy, following stakeholder consultation and general acceptance in a previous WEM development review. These amendments, while already made, were not commenced following concerns by AEMO that the morning window was spanning two Trading Days, increasing the complexity of implementation and the associated costs. DEED considers that the availability obligations for DSPs must be amended to ensure PSSR is maintained, while avoiding unnecessary additional cost to consumers. As noted in the Consultation Paper: • In the 2025 ESOO, AEMO forecast that unserved energy may occur between 8:00 pm and 10:00 pm
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Shell Energy	Shell Energy does not support the proposed changes on the DSP availability obligation window. Shell Energy believes that the evidence presented in the Consultation Paper regarding the split DSP availability periods is not sufficiently strong and compelling enough to warrant changes in the framework. Moreover, moving the morning obligation window to 8:00 am to 12:00 pm from the original 6:00 am to 10:00 am may add additional complexity for participants and customers, without a demonstrated reliability benefit. Further analysis and stakeholder consultation for the 8:00 am to 12:00 pm proposal would be beneficial.	during the Hot Season, when DSPs are unavailable and ESRs are largely depleted. Consequently, AEMO identified a requirement to procure an additional 50 MW of capacity through Supplementary Capacity (SC). • In response to heat conditions on 20 January 2025, AEMO activated a total of 20 MW of DSP response, along with 85 MW procured through the SC and NCESS mechanisms. Hence, DSP dispatch could credibly be required between 8:00 pm to 10:00 pm, and thus the current 8:00 pm cutoff of DSP availability obligation is no longer appropriate. In addition: • Historically, there have been no DSP dispatch events prior to 2:00 pm. • There is, however, some prevalence of low spare capacity intervals during winter mornings. These conclusions have confirmed the need to split the DSP availability obligations. The two options in the Consultation Paper were proposed in consideration of the implementation complexity and cost to AEMO and the feedback provided by the MAC.
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Enel X	Enel X generally supports the proposal to change the DSP availability obligation intervals to 8:00 am to 12:00 pm (noon) and 2:00 pm to 10:00 pm. Enel X notes that their original support of the proposal is for a morning window of 6:00 am to 10:00 am and an evening window of 2:00 pm to 10:00 pm. However, they understand the implementation constraints associated with a 6:00 am to 10:00 am design. Enel X encourages DEED to explicitly assess if the original design of 6:00 am to 10:00 am morning window will yield the same or materially consistent reliability outcome as the alternative 8:00 am to 12:00 pm (noon). Enel X does not have a strong preference on which of the 4:00 am to 8:00 am or the 8:00 am to 12:00 pm windows better align with the system reliability needs. However, they note that: • From a participant perspective, the 4:00 am to 8:00 am option is likely to present operational challenges as many participating facilities do not maintain overnight operational staffing. • The 4:00 am to 8:00 am option is also likely to reduce potential DSP participation and availability capacity relative to the 8:00 am to 12:00 pm option. Enel X notes that if separate morning and evening availability windows are to be introduced, there should be baseline methodologies to appropriately recognise the operational realities faced by participating	DEED notes Enel X's support of the proposal. As noted in section 3, historically, no system stress event has been observed before 8:00 am in the SWIS. In consideration of the expected complexity and implementation cost, the 8:00 am to 12:00 pm morning window was deemed to be the most appropriate option. Regarding Enel X's comment on baseline methodologies needing to reflect the operational realities facing participants providing a response during the two windows, DEED notes that the current availability window obligations for DSPs already include the time between 8:00am and 12:00pm and allow for multiple dispatch events in one day. DEED considers that the existing baseline methods remain appropriate for the new availability obligations, and that DSP providers can address the issue by: • recruiting a diverse portfolio of loads. For example, an aggregator could recruit large C&I loads for the morning window and smaller residential loads for the evening window so that separate loads are activated during the morning and evening windows. • opting to use the unadjusted baseline methodology as an alternative to the adjusted baseline methodology.
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	customers as many may require extended recovery periods following a response event.	
Perth Energy	Perth Energy supports the proposal to change the DSP availability obligation intervals to periods 8:00 am to 12:00 pm (noon) and 2:00 pm to 10:00 pm, as this is a realistic approach to maximising the amount of demand management that can be brought online. Perth Energy does not have an opinion on whether the 4:00 am to 8:00 am morning window is necessary. They believe that AEMO is best placed to advise on this matter. Perth Energy notes, however, that increasing the duration obligation for BESS Facilities to 7 hours implies potential increase in charging duration to around 8 hours. Meaning, BESS Facilities might be well charging during the 4:00 am to 8:00 am period, which could potentially result in DSP being called to allow BESS to charge, which would not be appropriate.	DEED notes Perth Energy's support for the proposal. DEED acknowledges Perth Energy's concern about the 4:00am to 8:00am window and refers to the final Review Outcome to implement the 8:00am to 12:00pm window.

Synergy	Synergy supports the proposal to split the DSP availability obligation intervals to a morning and an evening window. Synergy supports the proposed evening window of 2:00 pm to 10:00 pm. However, Synergy believes that the morning window should be 4:00 am to 8:00 am, based on the understanding that there is a higher likelihood of system stress occurring before 8:00 am on Business Days.	DEED notes Synergy's support of the split DSP availability obligation intervals. However, DEED reiterates that AEMO has advised that a 4:00 am to 8:00 pm morning window would increase implementation complexity and cost as it spans two Trading Days. Moreover, historical analysis has shown that no system stress event has been observed before 8:00 am. DEED therefore deems the morning window of 8:00 am to 12:00 pm (noon) to be the most appropriate option achieving the best outcome for PSSR while minimising costs to consumers.
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Proposal 2b:

The proposed Review outcome is that the ESM Rules are amended to:

- allow a DSP participant to choose only the 2:00pm to 10:00pm obligation window and receive the Reserve Capacity Price derated by 8/12 to reflect the reduced reliability availability; and
- require any DSP participant that chooses only the 2:00pm to 10:00pm obligation window must trade its Capacity Credits through AEMO.

The following stakeholders indicated that they support or generally support the proposal:

- AEMO
- ECP
- Shell Energy
- Synergy

Alinta Energy	Alinta Energy is concerned that the evening only participation that warrants a derated Reserve Capacity Price might introduce a differentiated Capacity Credit product. Alinta Energy believes that this would reduce the equivalence of Capacity Credits as a notional megawatt of capacity and add unnecessary complexity to the RCM.	DEED notes Alinta Energy’s concerns about the risk of treating the Capacity Credits with the Derated Price as equivalent to other Capacity Credits due to them offering reduced reliability. This issue is addressed by ensuring that Capacity Credits allocated to DSPs which are certified for the 2:00 pm to 10:00 pm window obligation only can be traded through AEMO only. This proposal reflects the reduced level of reliability that these DSPs will provide. Therefore, these Capacity Credits should not be treated as equivalent to other Capacity Credits, particularly regarding a participant’s ability to bilaterally trade them or use them to reduce Individual Reserve Capacity Requirement (IRCR) exposure. DEED notes that different availability requirements apply to different Facilities depending on the technology and Capability Class. Allowing DSPs to opt for the evening window only, extends this approach to reflect that some loads that can provide valuable demand response will not participate in the RCM if they also have to be available in the morning.
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Enel X	Enel X believes that the proposed reduction in Reserve Capacity Price, as consequence of the reduced availability obligation, would only discourage participation in the DSP framework. Many customers compare DSP participation against alternative mechanisms, including the management of the IRCR. If the economic value of DSP participation is materially reduced, it may no longer be commercially attractive for customers. This may then reduce the volume of flexible demand available to support the market, especially on potential morning and Winter system stress events, as the resources are responding for IRCR. Enel X encourages DEED to assess the following: • the likelihood of DSP attrition; • the potential migration of customers towards IRCR-based approaches; and • the net impact on system reliability Enel X also believes that the allocation of Reserve Capacity Payments, where evening window would receive 8/12 Capacity Price, is based solely on the duration of the obligation rather than its contribution to system reliability. This approach implicitly values morning availability obligation at 4/12. Enel X does not consider this assumption sufficiently supported by the rationale for the reform. In the technical analysis presented in the consultation paper, the morning window of 6:00 am to 10:00 am	DEED notes that the reduced Reserve Capacity Price reflects the fact that a DSP participating in the 2:00 pm – 10:00 pm window alone provides lower reliability benefit than a DSP participating in both windows. DEED further notes that this will likely incentivise participation of customers who can only offer availability during the evening periods. Regarding Enel X's comment about the evening window participation providing a greater reliability benefit, DEED notes the following: • DSPs providing capacity during the evening window provide less benefit to the SWIS than a DSP that is available during both windows. • To weigh the price paid to DSPs opting for the evening window only differently to those choosing only the morning window, a mechanism is needed to value the capacity provided by each group. This would require Effective Load Carrying Capability (ELCC) type modelling to quantify the marginal reliability impact of an evening only DSP versus a morning only DSP. The Working Group unanimously indicated an ELCC approach was not desirable for assigning Capacity Credits to DSPs. In the absence of a marginal reliability impact measure, the most prudent approach to weight the Reserve Capacity Price is by using the proportional availability of each group (relative to the full 12-hour requirement).
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contains only approximately 5% of low spare capacity intervals, compared to the 2:00 pm to 10:00 pm window which contains approximately 95% of such intervals. The consultation paper further clarifies that the spare capacity calculation in the morning intervals does not include ESR capacity as this period falls outside of the ESROIs. This suggests that the relative contribution of the morning window to security of supply may be overstated by the spare-capacity analysis alone. Enel X believes that the value assigned to each availability window should reflect its contribution to system reliability rather than being determined solely by its duration.

Proposal 2c:

The proposed Review outcome is that the ESM Rules are amended to:

- remove the option for DSPs to offer availability outside of the availability obligation intervals specified in the ESM Rules;
- allow a DSP to associate different loads within its portfolio to the morning and the evening sets of obligation intervals (for every Trading Day) at least 3 weeks before the associated loads effective date; and
- empower AEMO to conduct Reserve Capacity Tests in the availability obligation windows selected by the DSP.

Synergy indicated its support for the proposal

Enel X	Enel X believes that a testing framework associated with the split morning and evening availability windows may cause separate disruption of site activities. This may lead to risks in production, additional staffing requirements, and communication between site personnel and DSP operators, which would also increase practical burden. Enel X notes that the current DSP framework does not test for every potential dispatch circumstance but has still successfully demonstrated customer capability. Enel X suggests maintaining the existing RC Test requirements where AEMO could conduct testing within either morning or evening availability window and assess capability across the broader DSP fleet through a representative mix of testing outcomes. If DEED and AEMO deem the current RC Testing is insufficient to demonstrate DSP capability, Enel X suggests considering a strengthened contractual requirement instead. Enel X believes this should be considered first before looking at additional testing requirements. If DEED and AEMO deem it necessary to test both morning and evening windows, Enel X encourages adopting an enhanced notification arrangement. In practice, DSP providers rarely receive only two hours of warning. Providers actively monitor demand forecast and market conditions several days in advance of an anticipated system stress events.	DEED considers that testing for both windows is necessary to ensure that DSP can make positive contribution maintaining PSSR. AEMO, and customers paying for Reserve Capacity, require assurance that DSPs can provide a response during the windows that they have been assigned Capacity Credits for. While, currently, DSPs are not tested for every potential dispatch circumstance, this framework did not contemplate small size loads participating as Associated Loads or system stress events emerging in the morning. Testing in both windows is necessary to mitigate DSPs taking an unacceptable risk by recruiting loads only capable of providing response in the evening but applying for Capacity Credits in both windows. To address disruptive impacts on Associated Loads, DEED proposes that DSPs participating in both windows will be tested for each window on separate days.
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Synergy	Synergy supports the proposed changes regarding DSP Participation. However, Synergy seeks clarification if the different loads must be behind the same Transmission Node Identifier (TNI) in the proposal to allow DSPs to associate different loads within their portfolio for the morning and evening obligation intervals.	DEED notes Synergy's support of the proposal. The Associated Loads must be behind the same TNI if they are associated with a single DSP Facility. This does not prevent an aggregator from registering separate DSP Facilities behind different TNIs with each Facility participating in one or both windows as appropriate.
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Proposal 3:

The proposed Review outcome is to amend the ESM Rules to allow a DSP participant (whose Facility was not certified under clause 4.10.1B) to have its Capacity Credits reduced and a corresponding portion of its Reserve Capacity Security returned if:

- an Associated Load greater than 5 MW ceases operations permanently or for the entirety of a Capacity Year in which the relevant DSP has Reserve Capacity obligations;
- the DSP participant notifies AEMO no later than 1 April in Year 3 of the Reserve Capacity Cycle, so that the impact of the load exit on system demand can be factored into the upcoming ESOC; and
- the relevant participant provides sufficient evidence, to be specified in the relevant WEM Procedure, that the Associated Load has ceased operations or will be offline during the relevant Capacity Year.

The ESM Rules are also proposed to be amended to prevent the Associate Load that ceased operations permanently, or on an extended basis, from participating in Supplementary Capacity for the upcoming Capacity Year

The following stakeholders indicated that they support or generally support the proposal:

- AEMO
- Enel X
- ECP
- Perth Energy
- Synergy

Alinta Energy	Alinta Energy does not support the proposed changes to allow DSP Participants to have their Capacity Credits reduced and their corresponding RCS returned. The proposal introduces different treatment for DSPs compared to other Capacity Credit holders, despite having the same requirement to commit to the availability of their certified capacity. Any reduction in delivered capacity should still be reflected though the existing security framework. Alinta Energy also notes that circumstances may arise where a load may recommence operation, that may create potential inconsistencies with the proposed approach. The proposal also introduces additional administrative requirements for AEMO and MP while providing limited value. Alinta Energy believes the existing framework remains appropriate. Moreover, reducing the downside risk associated with load attrition may encourage more speculative DSPs to enter the RCM. Reserve Capacity Outcomes might result in volatile outcomes and therefore reduce the accuracy of price signals used by other capacity providers.	DEED notes that a generator exiting the RCM, while holding Capacity Credits, may lead to a shortfall in capacity and create system reliability risk. Any reliability gap, resulting from such exit, must be filled by emergency processes, such as Supplementary Capacity, to ensure the Reserve Capacity Target continues to be met. The exit of a large load that is an Associated Load, on the other hand, reduces the overall system load and therefore the relevant Reserve Capacity Target, which means AEMO does not have to replace the exiting capacity. DEED notes Alinta's concerns that such a load could recommence operations. DEED will address this risk in the amendments implementation by requiring DSPs to submit evidence that the load is exiting permanently or for a period longer than the relevant Capacity Year.
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Enel X	Enel X supports the proposal to allow DSP Participants to have their Capacity Credits reduced and their corresponding RCS returned. However, Enel X does not believe that there is sufficient rationale for limiting the mechanism to Associated Loads greater than 5 MW. Although they understand that this aligns with the operation of ESM Rule 4.10.1B, Enel X believes that this approach overlooks circumstances in which Associated Loads below 5 MW are nevertheless required to provide TNI information. Any load that permanently ceases operation reduces electricity demand relative to the assumptions that underpinned the original allocation of Capacity Credits. The same consideration of fairness, participant risk, and consistency with actual system demand applies to all loads, above or below the 5 MW threshold. Enel X wishes to extend the proposal to Associated Loads less than 5 MW.	DEED considers that extending the proposal to loads that are less than 5MW, would both create security and reliability risks, lead to costs to consumers. Aggregated DSPs may comprise a large number of Associated Loads with sizes smaller than those specifically taken into account in AEMO's demand forecasts. DEED understands that AEMO reflects the ongoing exit and entry of small loads in its forecast, but does not include loads with sizes smaller than 5 MW specifically. Therefore, the impact of multiple small loads exiting the RCM will not result in a corresponding decrease to the forecast Reserve Capacity Target in practice.
Perth Energy	Perth Energy supports the proposal to allow DSP Participants to have their Capacity Credits reduced and their corresponding RCS returned, as balancing the loss of load with a corresponding reduction in capacity credits is logical and sound. Perth Energy believes that an appropriate mechanism should be put in place to avoid double dipping by the load or increased reliability risk for the market.	DEED notes Perth Energy's support for the proposal. Robust evidence will be critical in AEMO's determination as to whether the load is exiting in practice. Perth Energy's concerns will be addressed as part of implementation phase.

Proposal 4a:

It is proposed to amend the ESM Rules to:

- update clause 3.17.11 (the head of power for the LRC WEM Procedure) to empower AEMO to incorporate a Lack of Reserve – State of Charge (LOR-SOC) condition into the Low Reserve Condition Framework that applies to Peak Certified ESR:
 - The LOR-SOC condition declaration is the trigger for imposing a State of Charge (SOC) obligation on the ESR fleet certified for Peak Certified Reserve Capacity.
 - The LRC WEM Procedure will also be amended to outline:
 - under what system conditions the LOR-SOC obligations will apply; and
 - the methodology AEMO will use to determine the SOC obligation level.
- allow AEMO to withdraw a LOR-SOC condition if it determines they are no longer necessary;
- specify the notification times for AEMO when declaring a LOR-SOC condition:
 - AEMO must use best endeavours to declare the LOR-SOC condition and SOC obligations by 8:00pm on the Scheduling Day; and
 - AEMO must declare the LOR-SOC condition and SOC obligations no later than 8:00am on the Trading Day,
- specify that the LOR-SOC obligation will be a uniform charge level applicable to all Peak Certified ESR Facilities, and that all ESR Facilities must be at that level at the start of their relevant ESROIs;
- specify the information that must be provided to ESR Participants to provide them a reasonable level of certainty regarding the event; and
- specify that the obligation applies to the remaining available capacity of ESRs, taking outages into account.

The following stakeholders indicated that they support or generally support the proposal:

- AEMO
- ECP
- Perth Energy
- Synergy

Alinta Energy	Alinta Energy supports the intent of the proposal but suggests further clarification on the trigger criteria and methodology. The LOR-SOC condition declaration and methodology used to determine the required SOC should be codified to provide Market Participants with certainty. Alinta Energy is also concerned about how frequently the obligation will be called, how the required SOC will be determined, and how the framework will interact with the existing Offer Construction obligations. The LOR-SOC framework should be targeted, transparent, and supported by a clear and informed WEM Procedure. Additionally, the Offer Construction Guidelines administered by ERA should address the new framework conditions.	DEED notes Alinta Energy's support of the proposal's intent, and agrees with Alinta Energy that a clear, transparent, and well-informed WEM Procedure on the LOR-SOC mandated obligations will be required.
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FiNESS	FiNESS raises that there is a distinction between a Facility that charges from the network by purchasing energy and a facility whose storage component charges from a generating component behind its own connection point. FiNESS asks that the WEM Procedure under this proposal take into account that facilities charging from a generating component behind the connection point do not draw on the market to comply, and that aggregate demand effect of a declared condition should be assessed on that basis. This distinction matters because the cost of the intervention is not evenly distributed as the market impact AEMO is managing when it declares the condition is driven by the grid-charged share of the fleet, rather than the fleet as a whole. FiNESS also asks that the methodology for Low Reserve Condition in the WEM Procedure shall specify what the uniform charge level is expressed as a proportion of. FiNESS believes that the uniform charge level should be expressed as a reference to the energy required to meet a facility's Reserve Capacity Obligation across its Obligation Intervals rather than its total storage capacity. • If the level is a proportion of total storage capacity, a facility with ten hours of storage holds two and a half times the energy of a four-hour facility at the same level, and may hold it against an identical Reserve Capacity Obligation. Because Obligation Intervals	DEED notes that the source of ESR charging is irrelevant with respect to whether a SOC obligation should apply. The LOR-SOC mandate is designed to ensure ESRs can discharge energy to maintain PSSR during system stress events and while their Reserve Capacity obligations apply. Failure to meet these obligations would yield the same impact to the system, irrespective of how the ESR is charged. Regarding the uniform SOC level, this will be expressed as a percentage of the total Charge Level (MWh) capability of the ESR fleet as opposed to capacity (MW). The specifics of this methodology are to be developed as part of the WEM Procedure change process. DEED acknowledges the comment about the interaction between Proposal 4a and the Guarantee of Origin scheme and notes that in situations where the SOC obligation applies, the priority must be to shift the renewable energy to the time of system stress to ensure PSSR over maximising renewable generation. DEED notes that: • The LOR-SOC condition should bind infrequently and should not have a material impact on an ESR's certificate revenues. • ESR facilities are remunerated for their Capacity Credits to make sure they are available during their ESR Obligation Intervals if the system needs them to address reliability issues.
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	presently run for eight Trading Intervals, a substantial part of that energy is held against an obligation that cannot call on it. • If the level is instead expressed by reference to the energy a facility requires to meet its Reserve Capacity Obligation across its Obligation Intervals, the obligation falls evenly across the fleet in the terms that matter — the capacity each facility has been certified to provide. Finally, FiNESS notes for information purposes only, that the changeover to the Guarantee of Origin scheme (from Large Scale Generation Certificates associated with the RET) means that ESR charging from renewable sources may forgo revenue if they are prevented from discharging in the periods prior to their ESROIs.	
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Neoen	Neoen does not support the proposal as drafted. Neoen believes that the review's focus should shift toward strengthening price signals through LOR periods to allow batteries to respond to genuine scarcity commercially, rather than an SOC compliance framework. However, if the proposal proceeds, Neoen asks that the ESROI itself be permitted to align with actual or peak LOR timing. Any civil penalty or refund liability under the SOC mandate should also be automatically withdrawn where an actual LOR 2 or LOR 3 condition occurs before the start of the ESROI. Batteries that discharge to respond to a genuine LOR 2 or LOR 3 ahead of its ESROI should not be penalised for the resulting shortfall against the SOC target. This should be applied automatically so operators can respond to a real event without weighing compliance risk.	DEED reiterates that the LOR-SOC mandate is a simpler and more effective way to implement ESR response during LOR periods which should occur infrequently. DEED further notes that AEMO will be required to withdraw a LOR-SOC declaration if a LOR condition is no longer likely. Hence, ESROIs with no LOR-SOC in place will not have a SOC mandate applying.
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Smart Energy Council Western Australia (SEC WA)	SEC WA raises the following questions regarding the proposal: • How the uniform SOC level will be calculated, and whether it will vary by facility duration or derating profile rather than applying a single figure across all Peak Certified ESR Facilities. • How AEMO's determination will be made available to Market Participants with sufficient lead time to adjust charging behaviour, particularly given batteries cannot always recover charge lost earlier in the Trading Day. • Whether AEMO will publish ex-post data on the frequency, timing and magnitude of LOR-SOC declarations, so that ESR operators and investors can price this risk into future project development and financing. The proposal suggests that AEMO will declare an LOR-SOC condition by 8:00 pm on the Scheduling Day. However, SEC WA believes that this does not give operators adequate operational certainty given the potential financial consequences of non-compliance SEC WA seeks: • A firmer commitment to early notification wherever system conditions allow, with the 8:00am deadline retained as the backstop only. • Clarification of how AEMO will communicate an LOR-SOC declaration to affected Market	DEED notes SEC WA's concerns around the implementation of the mandate. The issues raised will be addressed as part of the LOR-SOC framework implementation and will be consulted on as part of the WEM Procedure change process. DEED further notes: • The SOC level will be a uniform level applicable to all ESR facilities. • AEMO will be subject to a best endeavours requirement to declare the SOC obligation by 8:00 pm on the Scheduling Day to ensure that longer-duration ESR facilities would have sufficient time to charge. This is a higher threshold than reasonable endeavours. The 8:00 am deadline on the Trading Day is a backstop only. • As with other LOR events, AEMO would be expected to publish data on the details of the event so that the SOC mandate arrangements can be monitored. Regarding SEC WA's concern about the interaction of Proposal 1 and Proposal 4a, DEED notes that there should be no adverse interactions. Reserve Capacity Tests would not be conducted on a day when AEMO expects a LOR-SOC condition to bind. Regarding SEC WA's commercial concerns and related queries, DEED notes that: • LOR-SOC conditions should bind infrequently. Most of the time, ESR Facilities should be able to operate without restrictions to inject. DEED acknowledges that monitoring and reporting will be an important
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	Participants, and the mechanism for withdrawing a declaration once it is no longer required. SEC WA notes the proposed changes to Reserve Capacity Test performance measurement (Proposal 1), including the introduction of ramping requirements. SEC WA seeks assurance that facilities sized under any revised methodology will not be disadvantaged under a subsequent SOC mandate. SEC WA asks DEED and AEMO to confirm that ESR facilities sized appropriately under the revised testing methodology will not be disadvantaged in their ability to comply with a subsequent SOC mandate, and that the two proposals have been assessed together rather than in isolation. SEC WA is concerned that the LOR-SOC framework, as proposed, imposes a cost on ESR operators beyond the doubled refund addressed under Proposal 5: the loss of Real-Time Market (RTM) and Frequency Co-optimised Essential System Service (FCESS) revenue while the SOC obligation applies. SEC WA notes that: • Under Option 1, AEMO would apply Constraint Equations that directly prevent a Peak Certified ESR facility from being dispatched for injection before its ESROIs while an LOR-SOC condition is in effect. This removes the operator's ability to sell into the RTM or provide FCESS during precisely the high price, system stressed periods in which that revenue would otherwise be greatest.	component of the implementation phase to ensure the new arrangements are functioning as designed. • AEMO's constraints will not prevent Energy Injection or FCESS provision if these services are required to maintain PSSR. • Furthermore, the SOC obligation will be designed to be less than 100% by default. The details of the methodology will be developed and consulted on as part of the WEM Procedure change process. DEED reiterates that the establishment of reporting and monitoring obligations on AEMO will enable assessment of whether the arrangements are working as designed.
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- Under Option 2, the same commercial outcome arises through mandatory zero quantity offers and bids rather than a constraint, so the foregone revenue impact is materially the same regardless of which compliance option is adopted.
- AEMO advises that the SOC target is expected to sit below 100 percent, leaving an ESR facility with some residual capacity to participate in the RTM and FCESS ahead of its ESROIs.

With this, SEC WA seeks further inquiry on:

- How much headroom is likely to be left in practice, given this is the only partial offset identified against an otherwise complete loss of discharge revenue during the constrained period.
- quantifying the expected foregone revenue impact of the LOR-SOC constraint on affected ESR facilities, using the same SSE case data set out in Appendix D, so that this cost can be weighed against the reliability benefit the proposal is intended to deliver.

This foregone revenue is a cost to the ESR regardless of whether the facility ultimately complies with its SOC obligation. It should be recognised as a distinct impact from the doubled refund under Proposal 5, which only applies on non-compliance, and factored into any assessment of the overall financial impact of the LOR-SOC framework on the investment case for battery storage.

Shell Energy	Shell Energy has concerns regarding the practical operation of the proposed LOR-SOC changes. Shell Energy believes that in practice, many reliability risks and low reserve condition can emerge or materially change throughout the day, rather than being fully identifiable the evening before or by 8:00 am of the Trading Day. This results to a risk that some reliability events may not be captured early enough to enable all ESRs to efficiently charge and satisfy the required state of charge by the beginning of the ESROI. Conversely, AEMO may be incentivised to declare an LOR-SOC condition conservatively, based on forecast uncertainty, to ensure sufficient time is available for the fleet to respond. Shell Energy encourages DEED to carefully consider the potential market impacts of these timing arrangements. A significant volume of battery charging required may alter dispatch outcomes and market pricing in a manner that does not reflect supply and demand.	DEED understands that Low Reserve Conditions may emerge or materially change throughout the day. However, this does not change the need for ESRs to be sufficiently charged if their ESROIs occur during a System Stress Event. The LOR-SOC is proposed as the current arrangements do not provide a strong incentive for ESRs to enter their ESROIs with adequate charge levels on every given day. An underlying assumption of the LOR-SOC proposal is that AEMO has sufficiently accurate forecasting processes and tools to give ESR operators certainty that the forecast condition will manifest. DEED notes SEC WA's concern and will take it into consideration during the implementation phase.
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Tesla	Tesla does not support the proposal as they believe that it is open-ended and opaque. Tesla believes that the changes should be conditional on the following: • Trigger discipline - LOR-SOC only when there is a credible path to LOR 2/LOR 3 from insufficient Peak ESR fleet SOC rather than default. Trigger inputs, mandated SOC percentage, notice time, withdrawal time, and whether LOR 2/ LOR 3 was avoided, should be published ex-post each event. • SOC level design - default expectation should be less than 100% must be real in practice. The mandate should be expressed as MWh or percentage of Peak RCOQ over the relevant ESROD, not an abstract percentage. There should also be a tolerance band before non-compliance. • Heterogeneous ESRODs / cannibalisation - Tesla supports the explicit prevention of charge cannibalism. However, rules should not force inefficient fleet behaviour that might increase unserved energy risk. • FCESS and PSSR carve-outs - there should be clear and automatic treatment when AEMO enables FCESS or issues direction to avoid double jeopardy on SOC shortfall or refunds. • Information pack at declaration - The Rules/Procedure should include the mandated SOC percentage or MWh, applicable facilities, expected	DEED notes that the detailed methodology underpinning the LOR-SOC framework and resulting SOC obligations levels will be developed and consulted on as part of the ESM Amending Rules and the relevant WEM Procedure development process. DEED will consider Tesla's concerns during the proposal implementation stage.
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	ESROI windows, forecast conditions relied on, withdrawal criteria, and whether Option 1 constraints or Option 2 offer rules are active. • No retrospective application within a Trading Day beyond the stated notice rules. • Interaction with ERA offer guidelines - The ESM Rules should explicitly authorise SOC-preserving behaviour when LOR-SOC is active, so participants are not caught between AEMO mandate and ERA expectations. • A joint AEMO–ERA guidance note before commencement.	
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Proposal 4b:

It is proposed to amend the ESM Rules to:

- Amend the ESM Rules to empower AEMO to apply Constraint Equations to:
 - constrain ESRs from being dispatched for injection before its peak ESROIs, unless required to provide FCESS or other services to maintain PSSR on a Trading Day when a LOR-SOC is in effect;
 - to constrain ESRs from being dispatched for withdrawal during their peak ESROIs and during the peak ESROIs of any other ESRs, unless required to provide FCESS or other services to maintain PSSR on a Trading Day when a LOR-SOC is in effect;

The following stakeholders indicated that they support or generally support the proposal:

- Alinta Energy
- AEMO
- ECP
- Perth Energy
- Shell Energy
- Synergy

Alinta Energy	Alinta Energy supports Option 1 as presented in the Consultation Paper. Due to the infrequent nature of LOR events and the heightened compliance exposure for Participants bidding into the market under these conditions, the framework would provide the greatest system security by employing AEMO's existing right to direct generators.	DEED notes Alinta Energy's support
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AEMO	AEMO strongly supports option 1 as presented in the Consultation Paper due to the following reasons: • Option 1 enables AEMO to retain visibility of the physically available capacity ESR, so that AEMO can dispatch the ESR to generate or consume as necessary (i.e. to provide energy, ESS or relieve a network constraint), during the SOC mandate. The level of visibility under Option 2 would be much more restricted and would require more operational preparation ahead of Low Reserve Condition days. • The implementation of Option 1 is likely to be more straightforward by avoiding the complexity of configuring WEMDE to work with 0 MW bids and offers, as required under Option 2. It therefore potentially offers a quicker and least-cost solution. • Option 1 can be automated to a greater extent than Option 2, which mostly relies on manual processes. • The amendments required to the ESM Rules to implement Option 1 are likely to be more straightforward, with new prescription mainly focused on making minor changes to rules for the Low Reserve Condition framework. Option 2 would likely require more material changes to the rules for Dispatch. • Only option 1 preserves the bid stack, ensuring an ESR Facility will receive an uplift payment where it is directed by AEMO.	DEED notes AEMO's support
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ECP	ECP supports Option 1 as presented in the Consultation paper, as it requires AEMO to apply constraint equations to prevent ESRs from being dispatched for injection before or withdrawal during their ESROI. ECP believes that Option 2 might increase the risk of	DEED notes ECP's support
FiNESS	FiNESS believes that the two options will not achieve the same outcome by different means for a hybrid Facility. • Option 1, operating on dispatch, would not appear to bind behind-the-meter charging. • Option 2, expressed as a prohibition on charging, would prevent a facility storing its own generation during the very intervals in which it is being directed to hold charge. FiNESS asks clarification on if the restriction, for both options, is intended to bind the charging of a storage component from a generating component behind the same connection point, and that whichever option is adopted be drafted to say so expressly.	DEED clarifies that Proposal 4b is designed to only apply to Facilities registered as a standalone ESR. AEMO dispatches all Facilities at the “sent out” SWIS connection and therefore cannot dispatch just the ESR component of the Facility.

Neoen	Neoen supports option 2 on the compliance mechanism. Relying on participant offer construction rather than direct AEMO Constraint Equations avoids hard-coding what should remain a rare and flexible operational tool, and is consistent with our broader position that price signals, not administered constraints, should drive BESS behaviour through LOR periods.	DEED notes Neoen's preference for Option 2. DEED further notes that while Option 2 may be simpler from some participants' perspective, it reduces AEMO's visibility of an ESR facility's capabilities. This, in turn, increases AEMO's reliance on manual intervention to dispatch ESR facilities in response to unexpected contingencies or for other actions required to maintain PSSR. AEMO has also advised that Option 1 can be more simply incorporated into its operational processes minimising implementation costs.
Perth Energy	Perth Energy believes that AEMO is best placed to choose between the two options proposed in the Consultation Paper. Perth Energy also suggests considering potential energy shortages in winter. It is also likely to have occasions where AEMO must nominate BESS state of charge requirements well ahead of forecast periods of low renewable generation.	DEED notes Perth Energy's support of the proposal, as well as the suggestion to consider winter system stress events.

Shell Energy	Shell Energy supports Option 1 as presented in the Consultation Paper as this would enable AEMO to manage the requirement through the central dispatch processes, where the framework can respond consistently across the ESR fleet without requiring participants to make frequent manual adjustments. Shell Energy also believes that a constraint-based approach is more likely to support reliable and predictable outcomes during system stress events. Shell Energy encourages DEED and AEMO to ensure that there is appropriate transparency regarding the circumstances in which LOR-SOC constraints may be invoked, how minimum SOC requirements will be determined, and how participants will be informed of changing operational requirements. Clear visibility of these processes will assist participants in managing commercial impacts and maintaining confidence in the operation of the framework.	DEED notes Shell Energy's preference for Option 1, as well as the suggestion to be transparent regarding the specifics of the LOR-SOC obligations or requirements. These details will be further developed and consulted on as part of the WEM Procedure change process.
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Smart Energy Council Western Australia (SEC WA)	SEC WA believes that the Consultation Paper does not fully resolve the relative merits of Option 1 and Option 2. • DEED should confirm that AEMO has, or will resource, the systems and processes needed to apply Constraint Equations reliably and in a timeline manner under Option 1. • SEC WA seeks compliance safe harbour or grace period for operators under Option 2, due to the commercial consequences of getting a manual adjustment wrong. Further information from AEMO on the relative implementation cost and timeframe of each option, as well as how each option is expected to perform during an actual LOR-SOC declaration, would help stakeholders in comparing and deciding.	DEED notes that Option 1 is preferred to Option 2 as the latter reduces AEMO’s visibility of an ESR facility’s capabilities. This, in turn, increases AEMO’s reliance on manual intervention to dispatch ESR facilities in response to unexpected contingencies or for other actions required to maintain PSSR. AEMO has also advised that Option 1 can be more simply incorporated into its operational processes minimising implementation costs.
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Tesla	Tesla has raised the following concerns regarding Option 1: • Constraint Equations are a hard codification of what should be a rare and flexible WEM Procedure (logic, when binding, FCESS/PSSR override). • Consideration is needed for overrides – e.g. for FCESS/PSSR are deemed AEMO directions with matching RCOQ/refund relief for residual ESROI shortfalls caused by the override. • Participants need to retain the ability to update offers consistent with physical capability; hard coded constraints could create unexplained non-compliance. • AEMO must commit to performance metrics (constraint bind hours, manual directions, settlement disputes) in the first two summers and evolution of its methods over time to avoid ongoing application of conservative directions. Tesla suggests further details on Option 2, as reduced AEMO visibility during LOR-SOC increases direction risk and uneven outcomes across the ESR fleet.	DEED advises that: • The Constraint Equations envisaged under Option 1 would only be used during LOR-SOC conditions. The principles governing these constraints will be developed and consulted on as part of the implementation phase. • Reporting and monitoring requirements will be considered as part of implementation so that AEMO's decisions and actions during a LOR-SOC conditions are transparent and improvements can be introduced if necessary.
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Proposal 5:

It is proposed to amend the ESM Rules to introduce an addition to the current refund mechanism for ESRs when a LOR-SOC mandate applies.

- The refund will apply only to ESR Facilities and only when a LOR-SOC condition has been declared by AEMO.
- ESR Facilities will pay twice the amount of refunds they usually pay for failing to offer their RCOQ when a SOC obligation applies

The following stakeholders indicated that they support or generally support the proposal:

- AEMO
- ECP
- FiNESS
- Perth Energy
- Synergy

Alinta Energy	Alinta Energy strongly opposes the introduction of an additional refund mechanism for ESRs. The proposed LOR-SOC framework already introduces a new operation obligation on Market Participants and provides AEMO with additional tools to manage system reliability. There is no evidence suggesting that the existing compliance and enforcement is insufficient. Alinta Energy also notes that Market Participants already have significant incentives to comply through existing refund exposure and compliance requirement as refund liabilities are already expected on LOR-SOC events. The additional refund mechanism would only increase financial exposure of ESR operators, along with existing refund provisions, civil penalties, and compliance obligations. This risks creating a disproportionate punitive framework.	DEED considers that applying the refund multiplier will incentivise the right behaviour in times of system stress and support PSSR as a result. As outlined in section 6, the Technical Analysis provided in the Consultation Paper has shown that during some System Stress Events, ESR Facilities entered their ESROIs with partial charge. During the morning of those events, the ESRs discharged energy and made revenues in excess of their refund exposure during the ESROIs. This indicates that the refund mechanism on its own may not incentivise compliance with Reserve Capacity or LOR-SOC obligations during system stress events. Additionally, DEED anticipates that the LOR-SOC condition should bind infrequently. DEED acknowledges reporting processes will be important to monitor if this assumption is correct.
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FiNESS	FiNESS supports the proposal of adding the LOR-SOC mandate on the refund mechanism. However, FiNESS asks that the framework is designed to be capable of distinction of two different failures: • ESRs that charge from the network and do not reach the SOC mandate, but declined to pay the prevailing price for the energy required. This is the behaviour that the refund should penalise. • ESRs that charge from its own generating unit and does not reach the SOC mandate, but cannot buy its way to compliance by charging from the grid since its charging energy is not for sale. The same configuration that makes compliance costless in ordinary conditions, makes it less certain in adverse conditions. FiNESS seeks to clarify if the refund mechanism proposed is capable of distinguishing a shortfall arising from the unavailability of a facility's own generating component, from a shortfall arising from the participant's election to not acquire energy from the market.	DEED notes that the source of failure leading to not meeting the SOC obligation is not relevant for mitigating the resulting risk to PSSR . Hence DEED does not consider it appropriate to design refund application based on whether the source of the failure was BTM generation versus failure to charge from the grid.
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Neoen	Neoen does not support the automatic doubling of refund calculation. Neoen believes that stacking the 2x multiplier on top of existing refund exposure and civil penalty risk under Proposal 4a would lead to an increased capacity risk premium of WA ESR investment, that would lead to a higher consumer cost. Any new or enhanced refund liability should apply prospectively, with existing Certified Reserve Capacity grandfathered. Consistent with Neoen's stand on Proposal 4a, any refund liability should be automatically withdrawn where an actual LOR 2 or LOR 3 condition occurs before the start of the ESROIs. If the proposal proceeds, Neoen believes that the refund should be capped, and should consider AEMO-directed or late-notice non-compliance, as well as sunset pending review.	DEED considers that applying the refund multiplier will incentivise the right behaviour in times of system stress and support PSSR as a result. See response to Alinta Energy's comments above. DEED notes that AEMO will withdraw a LOR-SOC declaration if the low reserve condition is no longer likely to manifest during the ESROIs.
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Perth Energy	Perth Energy understands the intent of the proposal. However, it raises a broader issue that ESRs are paid reserve capacity payments but are not sufficiently charged to meet any sudden obligation. Perth Energy believes that this needs further review as more reliance will be placed on ESRs once coal-fired plants retire. If ESRs do not recharge when renewable energy is available, it is likely that gas plants would have to run more than necessary. It is unclear if AEMO's LOR-SOC approach will drive this behaviour.	DEED considers that the LOR-SOC obligations (combined with the additional refund) should incentivise ESR facilities to be charged when entering their ESROIs during system stress conditions. DEED acknowledges reporting mechanisms will be important in ensuring the mechanism functions as designed. DEED further notes that the ESROD and ESROI methodology functions by identifying the period (centred on the Mid-Peak ESROI) in which there is insufficient CC1 and CC3 capacity to meet demand without ESR technologies. As coal plants retire, it is likely that the ESROD will increase in duration so that new entrant ESRs will have to be available for longer periods. These ESRs will have to ensure they are sufficiently charged to meet the longer duration obligation.
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Shell Energy	Shell Energy does not support the proposed introduction of an additional charge shortfall refund mechanism for ESRs. Shell Energy believes that an additional refund mechanism is necessary when participants are already subject to explicit SOC obligations and associated compliance consequences including civil penalties. The proposed framework risks imposing multiple layers of consequences for the same underlying behaviour. If an ESR operator is required to maintain a minimum state of charge during a declared LOR-SOC event and is already exposed to enforcement action or civil penalty provisions for non-compliance, introducing a separate refund mechanism may create a disproportionate compliance regime that is not applied consistently across all capacity providers. Shell Energy encourages DEED to maintain a technology-neutral approach to capacity obligations and compliance arrangements. The introduction of ESR-specific refund mechanisms risks creating an uneven compliance framework under which storage resources are exposed to additional financial penalties beyond those faced by other capacity providers. Shell Energy believes that existing compliance and enforcement mechanisms should be sufficient to support any new LOR-SOC obligation.	DEED considers that applying the refund multiplier will incentivise the right behaviour in times of system stress and support PSSR as a result. See the response to Alinta Energy's comments above.
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Smart Energy Council Western Australia (SEC WA)	SEC WA raises the following questions regarding Proposal 5: • The combination of a doubled refund and a civil penalty for the same underlying conduct risks a disproportionate compliance burden. SEC WA request clarification on how the two enforcement mechanisms are intended to interact. They also seek clarification on whether a non-compliant facility will face compounding financial consequences for a single instance of non-compliance. • SEC WA seeks confirmation of the evidentiary basis for setting the multiplier at two times the standard refund, and if this figure will be reviewed once operational experience of LOR-SOC is available. • SEC WA requests that the implementation of the double refund be paired with transparency and notification improvements sought under Proposal 4a, so that ESR operators have a genuine and timely opportunity to comply before the higher refund can apply.	DEED advises the following: • While the SOC obligation will be made a Civil Penalty provision, this Review Outcome adopts a "compliance by design" approach to ensure that there are no adverse impacts on PSSR during system stress conditions. • The 2x multiplier was set to meet two objectives: – ESR Facilities must face higher refund amounts if they fail to comply with the SOC mandate; and – To minimise implementation complexity and cost, a minor adjustment to the current refund mechanism is placed DEED notes SEC WA's comments around ensuring transparency of AEMO's decisions and actions and relating to notifications. These details will be developed and consulted on as part of the implementation phase.
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Tesla	Tesla does not support the automatic 2x refund multiplies without tighter scoping. Tesla believes the proposal is not technology-neutral and poses a direct penalty on batteries. Moreover, the combination of the 2x refund multiplier, civil penalty, and opportunity cost of withheld discharge may increase risk for operators and investors, and consequently lead to higher long-run consumer cost. Tesla also notes that non-compliance of batteries may also stem from forecast error, late notice, forced FCESS, network limits, or BMS protection, instead of willful unavailability. As such, the proposal should include safe harbours so batteries are not penalised for late notice or AEMO directions or treated unfairly relative to other technologies. Tesla states that they will support the proposal if all of the following apply: 1. Multiplier applies only when: – LOR-SOC was declared with notice meeting the Rules; and – facility SOC at ESROI start was below mandate outside the tolerance band; and – shortfall is not caused by AEMO direction/FCESS enablement/network constraint. 2. Multiplier is capped (e.g. 2x on the shortfall MW only during LOR-SOC-effective intervals, with a	DEED considers that applying the refund multiplier will incentivise the right behaviour in times of system stress and support PSSR as a result. As Outlined in section 6, the Technical Analysis provided in the Consultation Paper has shown that during some System Stress Events, ESR Facilities entered their ESROIs with partial charge. During the morning of those events, the ESRs discharged energy and made revenues in excess of their refund exposure during the ESROIs. This indicates that the refund mechanism on its own may not incentivise compliance with Reserve Capacity obligations. DEED notes the conditions presented by Tesla and will consider these during the implementation phase.
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	daily/event cap tied to a fraction of annual capacity revenue). 3. No double recovery with civil penalties for the same facts without clear hierarchy (e.g. refunds first; civil penalty for aggravated/repeated breach). 4. AEMO/ERA publishes an annual LOR-SOC compliance report (events, average mandate level, compliance rate, refunds raised). 5. Sunset or mandatory review after two Hot Seasons on whether behaviour improved and whether 2x remains necessary. The following could also be considered as alternative: • Graduated factor (e.g. 1.5x first event in a Capacity Year, 2x for repeat) or • Make LOR-SOC shortfall a defined refund trigger at standard rates plus a modest fixed scarcity adder, rather than blanket doubling of the entire refund calculation.	
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Appendix B. Review Outcomes for No Amendment Items

B.1 ESR Derating Approach

The review outcome is to retain the existing LDM approach for derating ESR capacity for the purposes of CRC, due to the complexity and cost of alternative options.

Analysis showed the LDM status quo performing best against the State Electricity Objectives (SEO) due to its simplicity, transparency, and predictability. Moreover, the Working Group and MAC members supported retaining the LDM due to concerns regarding uncertainty in capacity allocation and high implementation costs under the alternative approaches.

Submissions generally supported retaining the LDM approach noting that the existing framework is fit-for-purpose and maintains simplicity, transparency, and predictability.

B.2 The method for determining the ESROIs

The review outcome is to make no amendments to the existing approach for setting Peak ESROIs.

The Technical Analysis in the Consultation Paper concluded that the existing approach to setting Peak ESROIs is fit-for-purpose and is aligned with the SEO.

Submissions generally supported the proposal and its intent. Alinta Energy, Perth Energy, Synergy, and Tesla expressed their support to maintain the current approach for setting Peak ESROI.

B.3 Capability Class 2 split for NAQ prioritisation

The review outcome is to make no amendments on the tie-breaking settings within Capability Class 2 technologies for the NAQ prioritisation.

Submissions generally supported retaining the existing NAQ prioritisation order for tie-breaking.

Tesla noted support in its submissions and further suggested conducting a triggered reassessment of the NAQ tie-break configurations when, for instance, hybrid facility applications have exceeded a defined share in the CC2T Certified Reserve Capacity, or when the NAQ ties have become material.

DEED notes Tesla's suggestion. The Consultation Paper noted that the prioritisation order would be revisited if this emerges as a policy issue in the future.