SUBMISSION TO THE AUSTRALIAN ENERGY MARKET COMMISSION – SMALL CHANGES TO INTEGRATING PRICE RESPONSIVE RESOURCES RULES (ERC0430)

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Submission made in a personal capacity

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Professional Disclaimer

This submission is provided in my personal capacity. The views expressed are my own and do not represent the views of my employer, past employers, or any affiliated organisation.

Executive Summary: Optimising the Velocity of Flexibility

This submission addresses a critical structural friction point in the Integrating Price-Responsive Resources (IPRR) framework: the "Commercial Hibernation Trap." Whilst I support the Australian Energy Market Operator's (AEMO) request to expedite ERC0430, the current regulatory architecture risks imposing legacy "coal-era" administrative constraints on high-velocity distributed assets.

Strategic Insights & Recommendations:

- **Systemic Financial Risk (WACC):** Administrative friction in transitioning assets from "Hibernated" to "Active" creates a "compliance lag" that artificially inflates the Weighted Average Cost of Capital (WACC) for Virtual Power Plant (VPP) projects. This "administrative basis risk" erodes the Net Present Value (NPV) of flexibility, stifling capital investment in the energy transition.
- **Revenue Erosion & Market Failure:** Quantifiable lags in re-activation result in direct revenue losses of $1,500–$3,000/day per 10MW unit in incentive payments alone. This excludes the significant opportunity cost of missed wholesale arbitrage during high-volatility events, representing a failure to capture efficient market signals.
- **The "Telemetry-Validated Reserve" (TVR) Solution:** To resolve the "Security vs. Velocity" paradox, I propose a new TVR status. This provides AEMO with a "Confidence

Score" via real-time heartbeat and State of Charge (SoC) telemetry, allowing hibernated assets to be deployed into active dispatch within a single 5-minute interval without compromising system security.

- **Architecting the "Dynamic Return-to-Service" Protocol:** I recommend a transition toward API-based status toggles and Automated Compliance Safe Harbours. By replacing manual, multi-day notice periods with high-fidelity telemetry, we ensure that "scheduled" status in the NEM facilitates, rather than hinders, the velocity of flexibility required for a resilient grid.

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1. Introduction

I support AEMO's request to expedite ERC0430 to streamline the implementation of the IPRR framework.

However, a "non-controversial" rule change must not overlook the Commercial Hibernation Trap. As the NEM moves toward the May 23, 2027, IPRR start date, the transition between "Active," "Deactivated," and "Hibernated" states for Voluntarily Scheduled Resources (VSRs) remains a critical friction point. If the regulatory architecture remains too rigid, it will inadvertently sideline the very flexibility the IPRR was designed to unlock.

2. The Problem: The "Visibility vs. Velocity" Trade-off

The proposed amendments aim to align VSR non-conformance and ramp rate requirements with scheduled resources. Whilst this creates a level playing field, it risks imposing legacy "coal-era" compliance burdens on highly agile distributed assets.

The Hibernation Gap: Under current VSR Guidelines, deactivation for maintenance is treated differently than long-term hibernation. If ERC0430 does not clarify the Return-to-Service (RTS) velocity, VPP operators will face a "compliance lag."

Operational Risk Example: Consider an aggregator that hibernates a residential battery fleet during a low-volatility spring. If a sudden heatwave triggers a price spike in early summer—similar to the NSW events in late 2025 where prices exceeded $5,000/MWh three times—a bureaucratic 14-day "notice period" could prevent that capacity from reacting, even if the hardware is physically ready. In this scenario, the market loses the stabilising influence of the VSR, potentially forcing AEMO to rely on more expensive, emissions-intensive interventions.

This 'administrative basis risk' significantly impacts the WACC for new VPP projects. For project financiers, revenue streams subject to opaque, manual regulatory delays require a higher risk premium. By increasing the hurdle rate for distributed flexibility, the current 'Hibernation Gap' inadvertently reduces the NPV of these assets, stifling the very transition the IPRR was designed to accelerate.

3. Deep Dive into Consultation Questions

Question 1: Do stakeholders support aligning cost recovery payments with the monthly schedule for VIM payments?

- *Do stakeholders consider this will impose any meaningful costs or risks on market participants?*

Response: I support aligning cost recovery with monthly payments to maintain AEMO's operational neutrality. Moving from an annual to a monthly cycle ensures AEMO's operational neutrality by preventing debt accumulation.

However, monthly cycles must not become a barrier to entry. If an asset is "Hibernated," it loses VSR Incentive Mechanism (VIM) eligibility. For example, if a 10MW VPP fleet is stuck in "administrative hibernation" due to a legacy 14-day notice period, the provider loses approximately $1,500–$3,000/day in VIM incentive payments alone, plus the far larger opportunity cost of wholesale arbitrage during high-price events.

Beyond the $1,500–$3,000/day in lost VIM payments, the inability to capture wholesale arbitrage during volatility—such as the late 2025 events where prices exceeded $5,000/MWh —represents a structural failure in market signals. We are essentially forcing participants to choose between 'Active' non-conformance during maintenance or 'Hibernated' commercial suicide.

Question 2: Do stakeholders support delaying the transitional requirement for AEMO to update the FCFP to allow for consideration of whether FPPS should apply to VSRs?

Response: I support the deferral of the deadline to update the Frequency Contribution Factors Procedures (FCFP).

If the implementation costs of Frequency Performance Payments (FPPs) for VSRs outweigh the benefits, a pause is prudent.

This delay prevents inefficient or duplicative procedural changes whilst a separate, more detailed rule change request is considered.

Question 3: Do stakeholders support including VSRs in the definition of minimum ramp rate requirements as proposed by AEMO, i.e. with the same requirements as bidirectional units?

- *Do stakeholders consider this will impose any undue costs on the market?*

Response: Yes, VSRs should be included in the Chapter 10 definition of minimum ramp rate requirements, aligned with the standards for bidirectional units.

This ensures consistency across different resource types and clarifies obligations for all dispatchable resources.

Accurate and consistent ramp rate requirements are essential for the secure and reliable operation of the power system as more price-responsive resources participate in central dispatch.

Including VSRs in these definitions is necessary for system security.

However, AEMO must recognise that VSR "ramp rates" are often instantaneous compared to thermal plant. The rules should not force these agile resources to mimic the slower response times of traditional generators simply for administrative convenience.

Engineers recognise that inverter-based VSRs can ramp to full capacity in milliseconds—far exceeding the bidirectional units they are being compared to.

To address concerns regarding dispatch engine stability, I propose a new intermediate status: Telemetry-Validated Reserve (TVR). Assets in TVR would remain administratively 'Hibernated'—avoiding non-conformance penalties —whilst providing real-time 'Heartbeat' telemetry and State of Charge (SoC) data to AEMO. This creates a 'Confidence Score' for the dispatch engine, allowing these agile resources to be 'pulled' into active dispatch with millisecond precision only when system security demands it.

We should move toward Telemetry-Led Verification. If a VSR can prove "heartbeat," state of charge, and health via AEMO's APIs, the administrative status in the Market Management System (MMS) should toggle to "Active" within one dispatch interval (5 minutes).

Question 4: Do stakeholders support aligning VSR non-conformance with scheduled resources?

- *Do stakeholders consider this will impose any significant costs on VSRs or the market?*
- *Do stakeholders consider it is feasible for VSRPs to be required to meet an output or consumption target?*
- *Do stakeholders have views on AEMO's proposed legal drafting included in the rule change request?*

Response: I support aligning VSR non-conformance provisions with the existing framework for scheduled resources.

The current notice-based approach, which limits AEMO to setting upper limits rather than specific consumption/generation targets, creates unnecessary operational risk.

Given that VSRs are voluntarily choosing to participate in central dispatch, it is reasonable to expect them to meet specific targets to ensure efficient price outcomes and manageable dispatch risks.

The "Manual" non-conformance override must be automated. Small-scale resources should not be penalised for non-conformance if the discrepancy is caused by AEMO's own internal processing lag in updating an asset's status from "Hibernated" to "Active".

Aligning VSR non-conformance with scheduled resources is necessary for market integrity. However, compliance systems must distinguish between technical non-conformance and administrative lag.

Question 5: Do stakeholders agree that these proposed changes align with the intention of the IPRR rule?

- *Do stakeholders have views on AEMO's proposed legal drafting included in the rule change request?*

Response: I agree that the proposed changes regarding deactivated and hibernated VSRs align with the original IPRR final determination.

Clarifying that these resources remain eligible for contingency FCAS (excluding regulation FCAS) provides necessary regulatory certainty.

The proposed changes to NER 3.8.2B(c) and related provisions are minor technical corrections that resolve ambiguity without altering the established policy.

4. Evidence: Q4 2025 Price Spikes as a Proxy

The Australian Energy Regulator (AER) reported in January 2026 that high-price events in late 2025 were frequently exacerbated by generating units being unable to start or ramp quickly enough during sudden drops in rooftop solar. VSRs are the precise technical solution to this "duck curve" volatility.

However, if these resources are tethered to "Hibernation" status due to administrative notice requirements, they remain invisible to the dispatch engine exactly when they are needed most.

5. Recommendation: The "Dynamic Return-to-Service" Protocol

I recommend the AEMC mandates that AEMO's subsequent VSR Guidelines and Procedure updates include the following practical mechanisms to ensure ERC0430 achieves its policy intent without stifling market flexibility:

1. **VSR Guidelines** and **MSATS** Procedures: AEMO should update the VSR Guidelines and MSATS Procedures to include a 'Fast-Track Flag' in the Market Management System (MMS). Under a revised NER 3.8.2B(c), VSRPs meeting a 'High-Fidelity Telemetry' standard should be permitted an Interval-Based Re-activation, allowing the administrative status to toggle to 'Active' within a single 5-minute dispatch interval.
2. **Implementation of a "Fast-Track Return-to-Service" (RTS) Protocol:** AEMO should replace manual, multi-day notice periods with an automated API-based status toggle. For VSRPs meeting a "High-Fidelity Telemetry" standard (verified via real-time "heartbeat" data), the transition from Hibernated to Active should occur within one dispatch interval. This ensures that "scheduled" does not mean "slow" in a high-volatility environment.
3. **Automated Compliance "Safe Harbours" During Status Transitions:** To support Change #4 (Non-conformance), the AEMC should mandate a "Grace Interval" during the first 30 minutes following an RTS activation. This prevents a VSR from being flagged for non-conformance whilst AEMO's internal systems synchronise with the asset's physical telemetry, reducing the GRC burden on providers.

4. **Dynamic VIM Eligibility Re-Activation:** The rules must clarify that VIM incentive eligibility is restored immediately upon the "Active" toggle in the MMS. A delay in restoring eligibility until the next monthly billing cycle would create a perverse commercial incentive for providers to remain "Active" (and potentially non-conforming) during maintenance windows rather than utilising the Hibernation status.

5. **Standardisation of "Hibernation Visibility" in Pre-Dispatch:** AEMO should include a "Ready-but-Hibernated" capacity figure in pre-dispatch and PASA (Probability of Ageing Substation Assessment) reports. This allows the market to see the volume of fast-start flexibility that is physically available but currently administratively sidelined, providing a more accurate signal for price-responsive behaviour.

6. Conclusion

The IPRR framework is the most significant shift in consumer-side energy since the introduction of the NEM. To fulfill the National Electricity Objective (NEO), we must prioritise the Velocity of Flexibility. The AEMC has a chance with ERC0430 to ensure that "scheduled" does not mean "slow." We must close the Hibernation Gap to ensure the NEM remains resilient in the face of increasing weather-driven volatility.

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