COLLGAR
WIND FARM

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Energy Policy WA
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Via email**:** energymarkets@deed.wa.gov.au

Dear Ms Guzeleva

RE: Power System Security and Reliability (PSSR) Standards Review Consultation Paper

I am pleased to provide this submission on behalf of Collgar Renewables (**Collgar**). As an operator committed to best practice and the continued evolution of a reliable and secure power system, Collgar welcomes the opportunity to review and comment on the Power System Security and Reliability (**PSSR**) Standards Review Consultation Paper.

We appreciate the comprehensive and consultative approach adopted in developing these preliminary proposals. In our view, the proposals are generally very well considered and we are broadly supportive of the direction set out in the consultation paper. Our comments below are intended to provide constructive feedback and suggestions to further strengthen the final standards.

For clarity, we have not provided specific commentary on every proposal; where no commentary is included, Collgar is generally supportive of the proposal as outlined.

We would be happy to discuss any aspect of this submission in more detail with you, should you have any questions.

Section 3.2 – The User Facility Standards Framework	
Proposal	**Comments**
Proposal 4	Hybrid facilities are not defined in the Electricity System and Market (**ESM**) Rules, yet the term is increasingly used by industry. Clause 2.29.1 of the ESM Rules outlines allowable facility technology types, and clause 2.29.1B(c) explained that all of these technology types that are connected behind the same measurement point may be treated as a single facility. A 'Hybrid facility' is implied to be an amalgamation of several facility types, however there is no explicit definition under the ESM Rules. Given it's increasing usage, we recommend Energy Policy WA (**EPWA**) consider defining the term 'Hybrid Facility' in the ESM Rules. We support the inclusion of hybrid facilities as loads under the revised PSSR framework. Treating hybrid facilities as loads, where appropriate controls exists ensure no adverse system impact. This provides a practical, low-risk pathway for streamlined compliance. This approach

	recognises that well controlled hybrids can behave passively from the grid's perspective, reducing unnecessary regulatory burden while maintaining system security.
Proposal 5	We support publishing negotiated connection standards and encourage prompt implementation. Many developers are seeking to connect in the eastern South West Interconnected System (**SWIS**) but face costly technical constraints due to weak grid conditions. Making these challenges visible will build the case for coordinated network investment. There is significant renewable investment interest in the region, but without timely transmission upgrades, these projects may be delayed or withdrawn.

Section 3.3 – Suitability of Technical Requirements (connection standards) for new technologies	
Proposal	**Comments**
Proposal 6	The Australian Energy Market Operator (**AEMO**) must consider system strength in planning and system operation (ESM Rule 3.2.5(f)), however there is no direct obligation to maintain (minimum) system strength in the ESM Rules. AEMO's Wholesale Electricity Market (**WEM**) Procedure: Power System Security clause 1.1.4 (e) states "the purpose of this procedure is to document the process to be followed by AEMO to assess and maintain Power System Stability including System Strength" We recommend that this obligation on AEMO is formalised in the ESM Rules. We believe the current framework presents a significant efficiency risk. Requiring each proponent to independently resolve system strength shortfalls at or near the same connection point, without coordination, will likely lead to inefficient and duplicated investment. For example, if three proponents connect near the same node, all may be forced to fund 100% of the required system strength individually, potentially resulting in a total cost up to three times higher than necessary. This is a poor outcome for the power system and a deterrent to investment. We strongly recommend that this review introduces a mechanism for AEMO or Western Power to coordinate and deliver shared system strength at common connection points with appropriate cost recovery or allocation. This would enable more efficient, equitable outcomes and avoid unnecessary overbuild. We recommend that either AEMO or Western Power be assigned a clear obligation to maintain minimum system strength levels (to be defined and regularly revisited) at defined nodes in the SWIS. Without such an obligation, there is a risk that previously compliant inverter-based resources may become unstable or curtailed due to declining system strength over time. Assigning responsibility for maintaining minimum SCR levels would provide greater investment certainty, reduce operational risk, and ensure efficient long-term system planning and stability.
Proposal 9	We acknowledge and support the proposed amendments to disturbance ride-through obligations under Proposal 9, and in particular would like to reiterate the importance of clause A12.9.2.3: "A Generating System and each of its operating Generating Units must remain in Continuous Uninterrupted Operation for a series of up to 15 disturbances within any 5 minute period." This clause provides a valuable benchmark for testing the limits of the technologies being connected to the power system. Experience working with HVDC interconnectors in Europe has demonstrated that such requirements can drive significant improvements in control system performance. While we support the inclusion of flexibility through negotiated performance standards, we caution against diluting this clause, as its firm expectations have been a key driver of system security in other legislations.
Proposal 10	Western Power's 2023 Technical Rules submission, specifically Section 3.7, addresses standards for oscillations but does not explicitly define the term "capability to dampen power system oscillations." Given the increasing reliance on inverter-based resources and the importance of maintaining system stability, we recommend that this review establish a clear and consistent definition of this capability. Doing so would provide greater clarity for proponents and ensure alignment across performance standards, procedures, and technical expectations.

Section 3.4 – SWIS System Strength Framework	
Proposal	**Comments**
Proposal 13	Collgar is highly supportive of Proposal 13 and would welcome the opportunity to be actively involved in the development and consultation process for the proposed fleet outlook methodology and associated guidelines. As noted earlier in our submission, we strongly believe that the role of AEMO and Western Power should extend beyond forecasting alone. There should be clear and enforceable obligations on one or both parties to maintain minimum levels of system strength across the SWIS. Ensuring transparency and planning certainty is important, but it must be accompanied by a proactive commitment to secure and sustain adequate system strength to support future connections and ongoing system reliability. We support a location-based fleet outlook and urge it be used to inform immediate investment planning. The eastern SWIS already hosts committed and advanced-stage renewable projects. Forecasting this future fleet must directly influence the planning of transmission infrastructure, particularly to ensure that fault level and system strength services can be delivered to these emerging zones without delay.
Proposal 14	Collgar supports the intent of Proposal 14 to require the Network Operator to maintain minimum fault levels at main (to be defined what this means) transmission nodes. However, we recommend that the objective be broadened to explicitly include the *stable operation of existing inverter-based resources (**IBR**)*, not just network protection. As noted on page 70 of the consultation paper, there must be a clear distinction in the framework between shortfalls with regard to the level required for protection systems to operate and the level required for IBRs to remain stable. In addition, we recommend placing further obligations on the Network Operator to upgrade or replace protection schemes that are not compatible with operation under low short-circuit ratio (SCR) or weak system conditions. For example, where distance relays are no longer suitable, these should be replaced with more appropriate technologies such as differential protection. This will ensure that protection systems remain effective and do not compromise system security as system strength declines further. This proposal is essential to support urgent investment in the east. Fault levels are already low in eastern parts of the SWIS, and new connections in the region are constrained or face prohibitive costs. We recommend that fault level shortfalls be published and updated annually to clearly identify where transmission or system strength investment is immediately required to unlock renewable generation. We also recommend that AEMO or Western Power maintain minimum fault levels for stable operation of existing generators or IBRs.
Proposal 15	Proposal 15 requires further work and clarification. It raises material concerns for existing generators. There is potential for retrospective retuning of settings and the proposal lacks clarity around cost, process, and compliance obligations. **Retrospective Impact on Generator Settings** The proposal introduces a process whereby AEMO or Western Power can request existing generators to "retune" their settings if they're no longer deemed suitable for the updated system conditions. This creates uncertainty about compliance obligations. For example, Will retuning trigger re-assessment of Generator Performance Standards (**GPS**)s? What if retuning requires hardware upgrades or extensive revalidation? The oscillations in the Merredin area (leading to a disconnection of 132 kV and 220 kV in Merredin Terminal (**MRT**) in normal operation) as a consequence of Cunderdin Battery Electric Storage System (**BESS**) and solar coming online are an example of this.

	Erosion of Technology and Investment Certainty Existing IBR facilities likely invested based on the system strength levels and compliance expectations at the time of commissioning. Proposal 15 implies that those assumptions may no longer hold as the Network Operator forecasts future fleet-based needs. This undermines commercial certainty and technology risk assessments made at the time of investment. **Cost Implications for Retuning or Non-Compliance** It's unclear who bears the cost if a generator must retune settings, validate models again, or worse, mitigate adverse impacts they were not originally responsible for. If a generator fails to meet the revised expectations, will penalties apply? Could this affect access rights or Essential System Services accreditation? **Erosion of Agreed GPS Protections** While GPSs are typically locked in upon connection, this proposal opens the door for retrospective modification through "streamlined" retuning processes. This blurs the boundary between negotiated, locked-in technical standards and future operational expectations. There is no minimum system strength in the GPSs. **Asymmetry of Obligations** Existing generators are subject to retrospective requests, but no clear reciprocal obligation is placed on the Network Operator or AEMO to maintain system strength at previously available levels unless covered under Proposal 14 (network protection). We strongly support a centralised and forward-looking approach. The eastern SWIS is already a focus for renewable developers, but weak system strength and the absence of adequate transmission infrastructure are major barriers. A centrally coordinated transmission investment that is immediately initiated is critical to unlock this region's renewable potential and avoid piecemeal, proponent-led solutions that increase cost and delay connections.

Section 3.5 – Coordinating assumptions and inputs for forecasting	
Proposal	**Comments**
Proposal 16	We would like to re-iterate that it is important to define a minimum level of system strength. In our view, this is one of the most critical steps in the development of a consistent and effective PSSR framework. Without a clearly defined minimum, it will be difficult to ensure that the power system remains secure and that investment decisions by the Network Operator and new proponents are appropriately guided. We support better coordination between EPWA, AEMO, and Western Power and recommend that this includes specific focus on high-interest development zones such as the eastern SWIS. There is already clear investment intent in this region. Forecasting inputs and modelling must reflect the urgency of enabling these projects through targeted transmission upgrades and system strength support in the near term.