



Merredin Energy Pty Ltd
ACN 124 273 025
C/O- Palisade Asset Management
Level 37, 350 Elizabeth Street
Melbourne VIC 3000
Wacek.Lipski@palisadeims.com.au
PO Box 203
Collins Street West VIC 8007
Telephone +61 3 9044 1123

29 September 2026

Energy Policy WA
Department of Energy and Economic Diversification (DEED)
Level 1, 66 St Georges Terrace Perth WA 6000

energymarkets@deed.wa.gov.au

Power System Security and Reliability (PSSR) Standards Review

1. Background

Merredin Energy Pty Ltd (MEPL) owns and operates the 82 MW open cycle gas turbine power station located in Merredin, Western Australia (Merredin Energy Power Station, MEPS) – East Region of the South West Interconnected System (SWIS). The plant is fully dispatchable and can achieve minimum generation levels within 5 minutes and maximum output within 15 minutes or faster. The main purpose of the power station is to provide critical energy security in the form of reserve capacity to ensure that supply reliability is maintained if electricity demand is unusually high and/or there are unforeseen plant outages. In addition, the plant can assist to increase System Strength in the East Region where a higher proportion of Inverter Based Resources (IBR) will be installed in the future.

MEPL welcomes the opportunity to comment on the PSSR Standards Review and the contribution that MEPS can play to address System Strength in the East Region.

2. MEPS Potential Contribution to Increasing System Strength in the East Region

2.1 Physical inertia and frequency resilience

When a MEPS synchronous unit is online, kinetic energy stored in the rotating generator set responds inherently to an imbalance between supply and demand. Following the sudden loss of a large generating unit or network element, that response can moderate the initial Rate of Change of Frequency (RoCoF) and provide additional time for governor response, battery fast frequency response, contingency reserves and protection schemes to act.

Physical inertia from synchronised machines such as MEPS is complementary to fast inverter response; it is not a substitute for modern grid-forming controls, nor should synthetic response be assumed to be identical to stored rotational energy.

Table 1: System Strength Contribution of MEPS

Credible event or condition	Potential MEPS contribution
Large generator or network trip	Immediate inertial response from synchronised rotating mass, moderating initial RoCoF while FCESS and governor responses activate.
High wind and solar output with fewer synchronous units online	A dispatchable source of physical inertia, fault current and voltage control, subject to commitment and operating-point requirements.
Rapid renewable generation changes or demand forecast error	Dispatchable output and governor capability can complement batteries, particularly where battery state of charge is constrained.
Eastern network disturbance or islanding risk	Locally connected synchronous support may assist voltage recovery, protection performance and regional resilience, subject to detailed dynamic studies.

2.2 Locational system strength in the East sub-region

The WEM 2026 ESOO¹ highlighted system strength challenges in the East Region of the SWIS. This included a non-thermal rotor-angle stability transfer limit into the Eastern Goldfields and congestion around the Merredin and Kondinin 132 kV network.

MEPS is located in the relevant eastern network area. When synchronised, MEPS may contribute short-circuit current, dynamic reactive capability and a local voltage source behind synchronous reactance. These attributes may support protection operation, voltage recovery and the ability of nearby inverter-based resources to remain stable. The magnitude and network value of those benefits must be established through Western Power and AEMO studies, including fault-level, voltage stability, rotor-angle and electromagnetic transient assessment as appropriate.

2.3 Firm energy and storage readiness

On 25 August 2025, rapid swings in forecast operational demand of up to approximately 1 GW within an hour, thermal outages and battery state of charge below 40% at the start of the evening obligation period contributed to Lack of Reserve 1 (LOR1) conditions and sustained reliance on gas-fired generation and storage (WEM 2026 ESOO p. 93). MEPS can complement storage by providing dispatchable generation without relying on prior electrical charging, subject to fuel availability, start times and dispatch instructions.

3. Comments on PSSR Standards Review

Regulatory Incentives - Proposal 1.1

Mandating that Electricity Storage Resources (ESR) have grid forming (GFM) capability in areas with existing and forecast low system strength assumes that this is the cheapest way to address system strength shortfalls. Our preference would be for AEMO/WP to highlight future system strength shortfalls in each region and allow participants to propose the best solution (procurement approach) to address the shortfall.

Allow existing synchronous generators, synchronous condensers, grid-forming batteries, hybrid facilities and network solutions to compete to provide common technical service specifications (for System Strength). Evaluation should consider whole-of-system cost, delivery lead time, availability and the number of services delivered by one asset.

Permit Western Power or AEMO, as applicable, to seek services from existing generators through Non-Co-optimised Essential System Services (NCESS) or another transparent contracting route. Products should accommodate operation at minimum stable generation or, where technically feasible, alternative synchronous operating configurations.

¹ AEMO, 2026 Wholesale Electricity Market Electricity Statement of Opportunities, June 2026

Only credit services that are incremental, measurable and available under the contracted operating condition. Technical capability should be demonstrated through validated models, commissioning tests and ongoing compliance monitoring.

MEPL requests that DEED amend the final framework so that system security needs are forecast on a locational, service-by-service basis and procured through a technology-neutral process in which existing synchronous facilities, including MEPS, can offer verified inertia, fault-current, voltage-support and related services.

To support evidence-based procurement, MEPL proposes that DEED's implementation framework enable a structured assessment of existing facilities in regions with current and future system strength shortfalls. This could include:

- machine inertia constants and aggregate stored kinetic energy at relevant commitment states;
- short-circuit contribution and impact on local fault levels and protection performance;
- reactive power capability, voltage-control mode and post-contingency voltage recovery;
- governor response, ramping, minimum stable generation, start time and sustained operating capability;
- performance under credible East sub-region contingencies, including relevant transfer and islanding conditions; and
- commercial configurations that minimise energy-market distortion and emissions while preserving the required security service.

EMT models for existing facilities – Proposal 3

Access to suitable electromagnetic transient (EMT) models is increasingly important for understanding system behaviour and supporting its secure operation. New connection applicants must provide EMT models as part of the connection process, but there is no such requirement for existing facilities.

The proposed requirement for existing proponents to provide EMT models is to address gaps in system visibility, system strength risks and broader power system security needs.

Introducing requirements for the Network Operator to reimburse reasonable costs for the development of these EMT models addresses equity concerns and helps ensure the requirements are proportionate.

Framework for control settings changes – Proposal 4.1

The existing framework provides Western Power with the ability to require changes to documented voltage control settings for system security purposes. The proposal recommends broadening the framework to encompass a wider range of control, protection and performance settings.

MEPL agrees with the broadening of the framework and suggests that assessment processes for facilities include at a minimum, fault level, stable voltage waveforms, inertia/RoCoF resilience, reactive reserves, voltage recovery and relevant oscillatory or rotor-angle stability risks. This should align system-strength planning with the operational concerns identified in the WEM 2026 ESOO.

The proposal also states that Western Power can direct changes to control settings to new and existing facilities to address System Strength issues. While some changes may be accommodated within the facility's approved operational envelope, other requirements could trigger additional technical studies, as well as costs of implementing the required changes. Potential technical studies and facility tests that may be required include:

- New Power Systems Computer Aided Design (PSCAD) studies;
- New Power System Simulator for Engineering (PSSE) studies;
- Control system design reviews;
- Original Equipment Manufacturer (OEM) engineering assessments;

- Commissioning tests;
- Generator Performance Standards (GPS) compliance demonstrations.

In addition, additional costs can be incurred when implementing the new control settings. This includes the costs associated with engineering support, new firmware, and validation testing for the following changes to control settings:

- inverter controller modifications;
- governor retuning;
- excitation system changes;
- plant controller redesign;
- SCADA and protection changes.

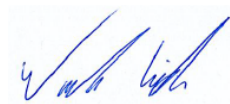
MEPL suggests that if Western Power directs existing facilities to change control settings outside of the approved operational envelope, and that there are associated costs incurred by the facility operator in complying with this request (as outlined above), then the facility operator should be financially compensated for incurring these costs. This could be similar to the compensation mechanism that was outlined in Proposal 3, whereby the Network Operator would reimburse reasonable costs for the development of EMT models.

4. Conclusion

MEPL supports the PSSR reforms and the move toward coordinated system strength planning. The 2026 WEM ESOO demonstrates why the framework must be broader than connection standards for new inverter-based resources. The SWIS is simultaneously losing synchronous plant, adding weather-dependent generation and duration-limited storage, experiencing lower minimum demand and facing locational network and stability constraints.

MEPS offers a potential near-term source of proven synchronous capability in the East sub-region. MEPS does not seek preferential treatment or technology-specific procurement. It seeks a procurement framework for addressing shortfalls in system strength that transparently identifies the services required, values their location and allows existing assets to compete where they can deliver verifiable, least-cost outcomes for the SWIS.

Yours sincerely,



Wacek Lipski
CEO
Merredin Energy