

Date: **29 September 2026**

Subject: **Power System Security and Reliability (PSSR) Standards Review – Consultation Paper (System Strength regulatory incentives framework and Technical standards for hybrid systems) and Exposure Draft of ESM Amending Rules, 20 August 2026**

To: Energy Markets (via email): energymarkets@deed.wa.gov.au

Nomad Energy (**Nomad**) welcomes the opportunity to provide feedback on the PSSR Consultation Paper (System Strength regulatory incentives framework and Technical standards for hybrid systems) and the Exposure Draft of ESM Amending Rules, both published on 20 August 2026, and endorses changes to the ESM Rules that facilitate the participation of grid forming (GFM) technologies into the South-West Interconnected System (SWIS).

Nomad is an active market participant in WA's Electricity System and Market (ESM), being the original developer of the largest operational solar farm (Merredin Solar Farm – 132MWp/100MWac) and more recently delivering the Merredin BESS (100MW/400MWh) project into construction with our joint venture partners Atmos Renewables. Nomad's development pipeline consists of hybrid facilities (solar and storage, wind and storage) located in electrically weak parts of the SWIS and designed around GFM capability. This submission is written from that perspective and is a principles-based response.

Nomad notes that the position taken in our August 2025 and February 2026 submissions on the voltage phase angle jump withstand – reducing the proposed 60° to 25° – has been adopted in the Information Paper and Exposure Draft, and we **support** that outcome. We also welcome that guidance on hybrid facilities, which we requested in both submissions, has now been proposed.

The critical element that remains absent is an underlying **financial support mechanism** which incentivises proponents to opt for GFM technologies. The Consultation Paper now rejects all financial options and relies on curtailment of facilities that have not converted as the only lever. Curtailment penalises facilities which do not migrate across from GFL to GFM and it offers no incentive to proponents that utilise GFM IBRs from the outset at locations on the network with low system strength.

Whilst not commenting on all proposals, we have endeavoured to respond to those we consider most important to get right for GFM and hybrid facilities connecting in weak parts of the network.

Nomad notes that under Section 2 – System strength incentives framework, specifically **Proposals 1:1 to 1:5** (consultation questions 1(a) and 1(b)), the following:

- 1) We support a targeted GFM requirement for new Electric Storage Resources (ESR) in low system strength regions (Proposal 1:1). However, "low system strength region" does not exist in the Exposure Draft, which defines only a System Strength Shortfall (clause 4.5D.6) and defers the methodology to a WEM Procedure. A designation that decides whether a mandate applies and where a facility sits in the curtailment order must be defined in the ESM Rules, with the quantitative criteria and an indicative list of candidate Transmission Nodes published before the requirement commences. Inverter technology is fixed at connection application and OEM

selection, years before R0 – proponents need to know the designation at that point, not at the first System Strength Report;

- 2) The commitment test that exempts a project (R0 GPS registration or a standard access contract) is inconsistent with new clause 3A.5.1A, which protects only projects with an executed Arrangement for Access. The two tests should be aligned, met at the earlier of R0 registration or an executed Arrangement for Access, and the commencement date should be stated in the Rules. The Rules should also confirm that a hybrid whose ESR sub-system has GFM capability satisfies Proposal 1:1, consistent with the sub-system assessment in Proposal 2:1;
- 3) We **support** items 1 and 3 of the curtailment prioritisation framework (Proposal 1:4). We **do not support** items 2 and 4 as drafted. Table 2:4 states that “GFM IBR or equivalent capability should result in more favourable constraint treatment where justified”, but this appears nowhere in the proposed rule text – a GFM facility is curtailed under item 4 with every other facility in the region, including GFL wind and solar to which Proposal 1:1 never applied. The favourable treatment should be set out in the Rules rather than left to a clarifying comment;
- 4) Proposal 1:4 is to be implemented through the Limit Advice and Constraint Equations framework. The same Constraint Equations are used in the Network Access Quantity process that determines Capacity Credits under the Reserve Capacity Mechanism. The package does not say whether a system strength constraint at a node will reduce the Network Access Quantities of non-GFM facilities there, or how curtailment under Proposal 1:4 is treated for Reserve Capacity Obligations and testing. Nomad asks the Department to confirm how this will be treated, and that the favourable treatment of GFM facilities sought above is reflected in that process as well.

Nomad proposes:

- 1) expressly stated incentives and compensation for existing GFL facilities to convert to GFM (Option 6) are reinstated. A proponent converting an operating facility faces a GPS modification of undefined scope, and in our experience Western Power is not yet in a position to advise how a converted facility re-undertakes commissioning and hold point testing. Until that pathway is defined, and the loss of income during re-testing, the OEM and consultant costs and the re-registration timeframe are recognised, the commercial risk of switching technologies is real and material, and the framework offers no incentive proportionate to it. Compensation should apply at least where conversion is the lowest whole-of-system cost solution, and the cost-causation principle stated in the Information Paper should be reconciled with NCESS cost recovery through network tariffs.

Nomad notes that under Section 3 – Hybrid systems framework, specifically **Proposals 2:1 to 2:4** (consultation questions 2(a) and 2(b)), the following:

- 1) We **support** assessment of hybrid systems as integrated facilities at the Connection Point or Measurement Point, with GFM capability assessed at the sub-system level, an operating-mode matrix and classification at R0. This is in line with our previous consultation responses and it removes a material source of uncertainty with respect to GPS testing points;
- 2) Table 3:2 Case A (a DC-coupled hybrid presenting through a shared inverter, assessed under a single Registered GPS) describes a large share of new hybrid development in the SWIS and should be **confirmed in the ESM Rules**, not left to the WEM Procedure and case-by-case assessment. In a DC-coupled plant the GFM capability is a property of the power conversion system, not the DC source behind it – the operating-mode matrix in Table 3:1 is written for AC-coupled GFM storage

beside a separate GFL generator and should be adapted so that modes are defined by the shared inverter's available current and energy headroom;

- 3) Table 3:1 identifies Mode 5 (low state of charge with high active power export) as the likely reference qualification case and the most onerous credible mode governs. If that mode must be met at full rating, a proponent must oversize storage or inverters, accept state of charge floors and reserved headroom that reduce revenue, or lose GFM classification – the first is the most expensive outcome for consumers and the third works against Proposal 1:1. The Rules should provide that **declared operational constraints** (a state of charge floor, reserved current headroom, PV curtailment logic that preserves GFM headroom), recorded in the Registered GPS and monitored, are acceptable evidence of compliance in the reference mode rather than requiring physical oversizing;
- 4) GFL-only operation (Mode 3) must remain a recognised credible mode with a defined re-entry path. An integrated facility classified GFM should remain classified GFM, and should **not** be moved in the curtailment order, when it is operating in a declared credible mode in which the GFM sub-system is unavailable or at its limits – operating in a declared mode is compliance, not non-compliance;
- 5) Proposal 2:4 puts the assessment at R0 to avoid late-stage design changes. That purpose fails if the WEM Procedure is not in force when the first hybrid facilities reach R0, which for projects already in Western Power's connection queue will be during 2027. The Procedure should be published in draft with the enabling rules, or the transitional arrangements should provide an interim guideline with a **no-detriment reassessment right** once the Procedure is made. Nomad regards certainty on when these proposals will take effect as one of the largest risks in the current development pathway; a published implementation timetable would materially de-risk projects already in development;
- 6) On question 2(b), the Chapter 3A Relevant Generator Modification process is workable in principle for adding a GFM sub-system behind an existing Connection Point, and clause 3A.5.1B is a sensible anchor, but it is **not sufficient as it stands**: partial sub-system assessment should be the default where the addition does not alter the registered performance of the existing sub-system; the scope of reassessment should be declared at the determination; the process should be time-bound; and a single Registered GPS with annexures should be the default for retrofits (not the multiple GPSs in Table 3:2 Case D), with the burden of justifying additional layers resting with the assessor. Without this, an existing GFL generator adding GFM storage – the conversion pathway the framework most needs – faces a re-registration of unknown scope and duration while it sits in item 2 of the curtailment order.

Nomad notes that under Section 4 – Submission of EMT models by existing facilities, specifically **Proposals 3:1 to 3:3** (consultation questions 3(a) to 3(c)), the following:

- 1) We **support** all three proposals, consistent with our support for item 3 of the curtailment order above, including curtailment for non-compliance. New connections already provide EMT models as a condition of connection; existing facilities at the same nodes should be modelled to the same standard. Better models mean less conservative limit advice and constraint equations at weak nodes, which benefits every facility there, and they are a precondition for the control settings framework in Proposal 4 to function;

- 2) “Reasonable costs” under Proposal 3:2 should be defined to include model development and any OEM licence or update fees, validation and verification, grid consultant costs, physical testing including any hold point re-testing, and any outage or loss of income while the facility is derated or offline for testing, with a dispute pathway; the staging and prioritisation criteria should be published; and a reasonable endeavours pathway should exist for legacy facilities whose manufacturer has exited, so that curtailment under item 3 is reserved for facilities that will not comply rather than facilities that cannot.

Nomad notes that under Section 5 – Framework for control settings changes, specifically **Proposal 4:1** (consultation questions 4(a) to 4(c)), the following:

- 1) We **support** the intent of distinguishing registered capability from operational settings, and Western Power having a clearly defined power to require settings changes for system security, provided the WEM Procedure setting the circumstances, triggers and consultation requirements is published in draft and consulted on before the enabling rules are made. We note that capability and settings are generally not independent, and that a facility’s continued compliance with its Registered GPS after a settings change cannot be assumed without reassessment – the framework should set out how that reassessment is scoped and how its cost is allocated;
- 2) The framework should **run both ways**. Our August 2025 and February 2026 submissions both raised that a single set of settings demonstrated against a worst-case withstand SCR will be sub-optimally tuned for the actual fault level at most sites, leading to IBRs tuned for GPS compliance rather than grid performance. Review outcome 2.2 defers “alternative settings” to further work; Proposal 4:1 is that further work. If Western Power may require a facility to change settings to suit regional conditions, a Market Participant should be able to hold, or seek approval for, settings tuned to the conditions at its site through the same streamlined process and governance. In particular, the settings used to demonstrate withstand SCR under Part A12.9A should be permitted to differ from those used in normal operation (review outcome 2.2). Otherwise every facility is tuned as a weak-grid facility regardless of its actual connection point, with reduced performance in normal operation and, we expect, difficulty for many projects in meeting the Automatic Access Standards for voltage control speed, reactive current rise time and active power recovery when assessed at the withstand SCR;
- 3) On question 4(b): the power to require re-tuning should be **limited to the voltage and reactive power control settings within the plant-level controller**, and should exclude changes to the settings of the generating units (inverters) themselves. Unit-level settings – GFM control parameters, current limiter priority, ride-through profiles and protection – are inseparable from registered capability and OEM warranty; any change to them carries a significant cost impact and belongs in the modification process. Energy management and state of charge settings that determine commercial dispatch should also be out of scope. There should be a defined maximum frequency for requiring changes (for example once every five years), linked to the System Strength Report and Transmission System Plan cycle;
- 4) On question 4(c): a directed settings change alters the plant’s dynamic behaviour and the proponent carries the consequences. The framework should address OEM warranty and support for the changed settings; liability where a directed change contributes to a failure or adverse interaction; lost output and loss of income during any hold point re-testing, and the cost of implementation, re-testing and outages; coordination where changes are made across several facilities at a node; and the curtailment order – a facility complying with a direction must **not** be

elevated to item 1 while its GPS modification is pending. Western Power should also not direct a change on the basis of a proxy model where the facility has provided a validated one.

Nomad notes the following in relation to the **Exposure Draft of ESM Amending Rules**, which we otherwise support:

- 1) **Part A12.9A – withstand SCR** – a single withstand SCR for GFL and GFM is a good change. However clause A12.9A.4.1 provides no Negotiation Criteria, and there should be a mechanism to negotiate a higher withstand SCR where warranted: a facility whose actual and 10-year forecast SCR is well above 3 (a wind farm with long MV feeders, or a small facility in a strong part of the network) would otherwise install reactive support equipment that may sit idle for the life of the facility. We support a compromise under which withstand SCR 3 is demonstrated at the GPS stage but installation of any additional equipment is deferred until a trigger is reached (for example the facility SCR projected to fall below 5 within a five-year planning horizon). We also note the discrepancy between the explanatory note and clause A12.9A.3.1, which requires Continuous Uninterrupted Operation “while meeting all other Technical Requirements” at SCR 3 or less – a significantly higher burden than the explanatory note and the Information Paper outcome describe;
- 2) **Clause A12.9A.1.3** – we **support** the intent that a facility is not in breach when network conditions fall below the withstand SCR it was assessed against. However the clause is framed in SCR terms although review outcome 2.3 states the requirement is framed in system impedance terms consistent with the NER, and it is a compliance protection only. A GFM facility that connects early at a weak node may find conditions moved by later GFL connections at the same node; the “do no harm” provisions relied on in the Consultation Paper are not identified in the package and should be confirmed to protect connected facilities, not only the network;
- 3) **Clauses 4.5D.3, 4.5D.6 and 4.5D.7** – the System Strength Report identifies shortfalls by Transmission Node but reports the magnitude aggregated by technology type and region. A proponent deciding whether to offer GFM capability into a shortfall needs the magnitude at its node and which limb of clause 4.5D.6 drives it. The AEMO case studies in Appendix A assume GFM contributes to voltage waveform stability but **zero** to the minimum three-phase fault level; the clause 4.5D.7 methodology should credit demonstrated GFM contribution, otherwise GFM providers will be at a structural disadvantage in NCESS procurement, notwithstanding the policy intent;
- 4) **Clause 2.2C.1(cc)** – the Network Operator’s obligation to alleviate a shortfall appears once, in a list of functions, with no trigger, timeframe or standard, whereas section 4.5D contains seven clauses on identifying shortfalls. Clause 4.5B.4(a) should be extended so the Transmission System Plan reports the market cost of constraints and curtailment applied for system strength purposes;
- 5) **Measurement Location** – we welcome the amended definition and the pathway to agree an alternative location. The WEM Procedure replacing the GPS Guideline should treat inverter-terminal assessment for plants with long internal feeders as a standard case rather than one requiring bespoke justification;
- 6) **Sequencing and commencement** – the curtailment framework, hybrid framework, EMT obligation and control settings power all require further rule text and at least three WEM Procedures, and the Exposure Draft rules are to commence on a date to be gazetted by the Minister that is not yet known. Nomad asks the Department to publish an implementation timetable: the commencement

date of the Exposure Draft rules, the timetable for a second Exposure Draft, the WEM Procedures in draft alongside it, and confirmation that industry will have the opportunity to comment before those rules are made. Certainty on timing is, in our view, one of the largest risks facing projects currently in development.

Nomad looks forward to engaging constructively with the Department, Western Power, AEMO and other key stakeholders to ensure the roll out of these amendments to the ESM Rules supports and rewards the connection of GFM technologies in the parts of the SWIS that most need the system strength they provide.

Sincerely

A handwritten signature in black ink, appearing to read 'Guy Beesley', with a long, sweeping horizontal stroke extending to the right.

Guy Beesley

guy.beesley@nomadenergy.com.au

Managing Director
Nomad Energy Pty Ltd
Unit 5, 6 Short Street
Fremantle, WA 6160