

DER Program
Australian Energy Market Operator
Level 2, 20 Bond St
Sydney NSW 2000

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Thank you for the opportunity to contribute to AEMO's consultation process on Distributed Energy Resources (DER) minimum technical standards.

Reposit was a vocal participant in the public forum held as part of this consultation on the 16th of September. The views articulated in that forum will be reflected in this submission.

In short Reposit considers AEMO's approach to DER to be inconsistent with AEMO's approach to other sources of MWh and MW. As the market operator, AEMO should be agnostic to the source and destination of MWh. The loss of this agnosticism will result in an erosion of investment certainty, leading to inefficient capital allocation and ultimately higher prices for Australian electricity consumers.

Reposit appreciates that AEMO is also the system operator and hence electrical and system control concerns must be taken into account. They should not however be paramount. AEMO's proposed DER minimum technical standards do not consider the efficient operation of the market. As a result, they are unlikely to be compatible with the National Electricity Objective.

AEMO is correct to be concerned with short duration undervoltage and minimum demand issues. However the solutions to each of these are relatively simple and can be implemented using existing NEM mechanisms. Reposit is at a loss however to understand how these issues trigger AEMO's consideration of interoperability, cyber security, DNSP hosting capacity, DNSP islanding or other varied concerns raised in these minimum technical standards.

VDRT

As discussed in the public forum, the AS4777.2:2015 standard is explicit in its definition of Maximum Disconnection Time for undervoltage. What is lacking is an explicit test procedure for testing inverter behavior during short undervoltage disturbances. AEMO is applauded for identifying this omission and contributing this procedure to the Standards Australia review of the standard. Reposit considers this issue to have been efficiently addressed, however questions the need for a public consultation as part of this action.

Minimum Demand

Growing unscheduled solar generation and delayed uptake of electric vehicles will create minimum demand issues. Reposit recognises that South Australia is already subject to frequent Directions due to minimum demand, and that other states may soon follow. AEMO's preferred solution for this problem is to apply system controls to remove solar generation from the market. This has already been implemented in South Australia on both centralised and decentralised solar generation.

Reposit considers this mechanism to be anti-market, technology specific, inefficient and laden with unintended consequences. It is also unnecessary as mature NEM mechanisms exist to manage minimum demand more effectively, with fewer side effects and without unintended side-effects.

Reposit suggests that sustained periods of negative energy pricing during daylight hours in a NEM region will achieve the outcomes that the system operator requires at a much lower cost and in considerably less time. This can be achieved by providing strong price signals for inertia and system strength via AEMO-contracted Network Support and Control Ancillary Services (NSCAS) or through introducing new markets for these services. In either case, synchronous generation would be able to generate sustainably at negative prices due to revenues earned from system strength and inertia services. Solar generating units (both decentralised and centralised) would run at a loss for each MWh generated. This would create a clear incentive for solar units to be curtailed.

Providing synchronous generation with a means of outcompeting solar PV via negative prices is more efficient than implementing system controls to curtail solar PV. The minimum negative price could be lowered if additional response is required, but doing so may be not necessary.

This mechanism makes use of market design (negative prices) to achieve system control outcomes. Reposit asserts that many of AEMO's current system control problems can be addressed by a market design feature if the market and wider regulatory system are allowed to operate as they were designed.

Emergency System Controls

AEMO stated during the public forum that the DER minimum technical standards are there for emergency use only, however were unclear as to what is considered an emergency. Additionally, many of the proposed standards listed do not seem to address emergency situations, but instead describe nominal operating mechanisms. As such, they are inferior to the control systems currently being operated by Reposit and similar organisations with coordination being delivered by existing market mechanisms, such as the bid stack.

Reposit suggests that AEMO look internally to the procedures, technology and stakeholder relationships that have worked so well for many years with centralised generators for emergency control, and formulate a consistent functional specification for emergency control of DER. The formulation of functional specifications will allow relevant stakeholders to allocate specialised resources to an AEMO-led effort to implement, develop and test emergency system controls promptly and without distraction.

Reposit does not feel that the current consultation process around minimum standards has a scope of "emergency controls", nor is it outcomes focused.

Continued Engagement

It is clear that AEMO is genuinely concerned about how DER will impact the operation of the power system. It is less clear that AEMO is considering the impact of DER, or AEMO system controls for DER, on the National Electricity Market for which it is the market operator.

Reposit would welcome the opportunity to more fully discuss AEMO's thoughts on DER in the future.

Kind Regards,



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