

Anna Collyer
Chair
Australian Energy Market Commission
Level 15, 60 Castlereagh Street
Sydney NSW 2000
Lodged via <https://www.aemc.gov.au/contact-us/lodge-submission>

Melbourne, 29. January 2025

Dear Ms. Collyer,

Re: ERC0393: Improving the NEM access standards – Package 1

Vestas welcomes the opportunity to provide our feedback on the AEMC's Draft Rule Determination released on 5 December 2024 regarding the access standards established in Chapter 5 of the National Electricity Rules (NER) and its respective schedules.

Vestas' vision is to become the global leader in sustainable energy solutions, and everything we do revolves around the development and deployment of these solutions.

We would like to express our general support for this Rule Change request proposed by the Australian Energy Market Operator (AEMO) with the aim to improve the access standards for the National Electricity Market (NEM) – Package 1.

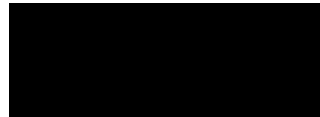
However, there are some proposed changes that would impose technical barriers for some generators to meet the Automatic Access Standard (AAS) requirements, and the NER should be technology neutral. In addition, this Rule Change should not impose unnecessary additional work and costs for generators and original equipment manufacturers to comply without delivering material system benefits.

Please refer to the appendix for our feedback on specific topics on the Draft Rule Determination.

Should you wish to discuss any aspect of our comments, please contact Marco Aurelio Lenzi Castro via mlzto@vestas.com or [REDACTED], or the undersigned.

Yours sincerely

Vestas - Australian Wind Technology Pty. Ltd.



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Appendix

AEMC's Draft Determination	Vestas' Feedback
Clause S5.2.5.1 – Reactive power capability	
Reducing voltage range for full reactive power capability	Vestas agree with the proposal and welcomes the changes as it relieves the requirement on additional reactive power devices such as STATCOMs to meet the shortfalls on (a) inductive reactive power at higher active power levels and (b) capacitive reactive power at lower active power levels which is typical reactive power capability achieved with wind turbine generators (WTGs) only. Vestas also welcomes the amendments in S5.2.5.1 (e1) in the draft rule where the flexibility to reflect reduced number of units online is considered.
Clarifying and amending reactive power capability requirements considering temperature derating	Vestas does not support including the temperature derating as one of the conditions to meet the Automatic Access Standard (AAS). This proposed change would impose unnecessary barrier for some technologies to reach the AAS, once the generator would not reduce its reactive power capabilities at 50°C, but it will be certainly exposed to derating and maybe forced to stop operation for temperatures above 40°C. The rules should be technology neutral. In addition, Vestas considers that some level of clarity is required to demonstrate the <i>'proportional derating of active power and reactive power at equipment level, projected to the connection point'</i>.
Clause S5.2.5.4 – Response to voltage disturbances	
Bounding requirements for over-voltages above 130% and introducing obligations to minimise recurring switching surges	It is likely that the updated GPS template may include some form of S5.2.3(b)(4A) placing an obligation for the generator to demonstrate that the plant does not cause network equipment or other Network Users' facilities to experience recurring slow front over-voltages (switching surges). This requirement has the potential to result in unnecessary requests from the NSPs to demonstrate compliance. In addition, it is important to set a clear voltage limit once the proposed wording <i>'...at least marginally exceeding 130%'</i> opens the door for different interpretations.
Clarifying the meaning of <i>'continuous uninterrupted operation'</i> for disturbances within 90-110% of nominal voltage	Vestas welcomes these changes. However, we would like to highlight that some NSPs are currently requesting demonstration of CUO for temperatures where the plant derates, which adds a considerable modelling time and effort for OEMs. The new rule does not appear to have removed this potential unnecessary burden.
Clause S5.2.5.5A - Responses to disturbances following contingency events	
Amending rise time, settling time and commencement time requirements for reactive current injection.	Proposal to remove the settling time is welcome. However, in Vestas' opinion, even the new draft rule has failed to distinguish the type of reactive current (for both the level of reactive current provision for 1% positive sequence voltage reduction or increase and rise time of that quantity). For the purposes of level of reactive current provision or the rise time, the rule should specify the reactive current as <i>'positive sequence reactive current'</i> instead of keeping it ambiguous. Further, the reactive current rise time is now assessed for a step-like voltage profile at the connection point. What this would mean is our

	standard assessment approach of using faults for reactive current assessment is no longer applicable. The methodology to apply a step-like voltage profile at the connection point that is not affected by the reactive current contribution should be explicitly mentioned within the rules to avoid different interpretations. The criteria for well damped in terms of the expected damping ratio needs to be clearly articulated for avoidance of doubt.
Defining a control objective for both balanced and unbalanced faults, and recognise that negative sequence current contributions may contribute to better system outcomes	Introducing negative sequence response is challenging not only for the regulator, but also for generators, once it would impose unnecessary work and costs to comply with the proposed change, without delivering material benefits. The GPS would become even more complex if the positive and/or negative sequence components have to be recorded and would not increase the system security.
Clause S5.2.5.7 – Partial load rejection	
Limiting application of S5.2.5.7 to synchronous generators only	Historically this clause was only applied to synchronous generators only, but it was mandated for asynchronous generators. It is prudent that this requirement is removed from the asynchronous generators in the proposed rules.
Clause S5.2.5.8 — Protection from power system disturbances	
Moving the minimum requirement for vector shift protection or similar functions to clause S5.2.5.8	Vestas welcomes this change, as it reduces engineers effort to performe another series of studies for S5.2.5.16.
Clause S5.2.5.13 — Voltage and reactive power control	
Prioritising stability over speed of responses across a range of typical to highest system impedances	Vestas welcomes the proposed changes. It worth to highlight that transparency in calculating the system impedance is key to keep a consistent procedure in the NEM.
Adding materiality thresholds on settling time error bands	This is a good move to eliminate the non-compliance cases due to insignificant active power changes due to voltage disturbances.
Ensure that assessments for clause S5.2.5.13 should consider the system strength services to be provided by a SSSP	Vestas recommends that more clarity should be provided to explain how generators who opt to pay system strength charges face less onerous requirements. It is hard to see any differences in assessment approach between a self-remediating generator and a sytem strength charge paying generator in the proposed NER wording. Also, Vestas understands that it is worthwhile clarifying how the highest impedance is calculated or considered for a self-remediating generator and for a system strength charge paying generator.
Consequential NER amendments	
Removing references to superseded standards	In latest AEMO GPS template, for S5.2.5.2, there is still reference to AS/NZS 61000.3.6:2001 as the standard related to voltage unbalance limit assessment. This should be corrected to IEC TR 61000-3-13:2008. It is interesting however that NER does not mention any standard for 'S5.1a.7 Voltage unbalance'. Either the correct reference should be introduced to the GPS template or completely removed. Alternatively, the correct standard should be included in both GPS template and S5.1a.7 of NER.