

Via Online Submission

3 February 2023

AEMC RULE CHANGE: EFFICIENT REACTIVE CURRENT ACCESS STANDARDS FOR INVERTER-BASED RESOURCES – CONSULTATION RESPONSE

APD Engineering welcomes the opportunity to provide feedback on AEMC's consultation on draft determination and draft rule in relation to the rule change project "Efficient reactive current access standards for inverter-based resources" (ERC0272).

APD strongly supports this consultation which will develop a more preferable rule for reactive current provision by inverter-based resources eliminating the requirement to meet a minimum access standard which impacted a large number of projects over the past five years since the commencement of the current rule in 2018 with little to no system security benefits.

ABOUT APD

APD Engineering is an electrical engineering consultancy highly skilled and experienced in the delivery of power system studies, network modelling, engineering design services and project commissioning for a broad range of clients. APD hosts one of the largest Power Systems teams in the world and provides power system modelling and technical advisory services to clients across Australia and New Zealand.

Our engineers have detailed knowledge and understanding of different types of technologies in the market including photovoltaic inverters, wind turbine generators, storage technologies etc. APD is at the forefront of challenges, deriving strategic and pragmatic solutions for successful connection of complex renewable energy projects.

APD has a broad range of experience gained from working with AEMO and NSP's (NEM, NT, WA, New Zealand), renewable energy developers, EPCs, partnering consultancies and OEMs. Our detailed knowledge of Australia's and New Zealand's energy markets, Rules, regulatory requirements, and stakeholders provide immense value in delivering positive outcomes for renewable energy developments across Australia and New Zealand.

Our comments and queries on the draft determination and draft rule is attached as Appendix A.

Please do not hesitate to contact Dr Lasantha Perera on Lasantha.perera@apdeng.com.au if you would like to discuss this submission in further detail.

Yours sincerely,



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APPENDIX A – COMMENTS AND QUERIES ON THE DRAFT

DETERMINATION AND DRAFT RULE

Q1. The active power recovery and stabilisation of connection point voltage: Schedule 1 - [6] S5.2.5.5

In the draft rule, S5.2.5.5(n)(2) has been revised to introduce more flexibility to establish active power recovery in conjunction with connection point voltage recovery and stabilisation. However, the wording for S5.2.5.5(e)(3) has been retained. Does this mean that the automatic access standard requirement regarding active power recovery remains the same regardless of the voltage recovery after the fault clearance?

Q2. The reactive current must be adequately controlled: Schedule 1 - [7] S5.2.5.5

In the draft rule, the term 'adequately damped' has been replaced with 'adequately controlled'. APD understands the rationale for this update as described in the draft determination. However, APD sees this as an item for differences in opinion among AEMO, NSPs, OEMs and proponents in comparison to the previous term with a more prescriptive definition in the Glossary (Chapter 10 of the Rules). This new term will be part of the normal next, i.e. not italicized. This may lead into some form of ambiguity among stakeholders similar to the term 'maximum continuous current'. Therefore, APD proposes the new rule to include clear and concise definition to the term 'adequately controlled' in the Glossary. An example may be to define what is not 'adequately damped'.

Q3. The location at which the reactive current rise time is measured: Schedule 1 - [7] S5.2.5.5

Similar to the existing rule, the draft rule does not specify the exact location to measure the reactive current rise time. The draft rule is specific about where to assess the reactive current response commencement, i.e., it may be measured at either the generating unit terminals or the connection point. The draft rule is also clear on the location where the reactive current provision is to be assessed which is the connection point. Therefore, APD believes it would be prudent to include wording similar to S5.2.5.5(o)(6) in the draft rule, i.e., the reactive current rise time may be measured at either the generating/production unit terminals or the connection point. AEMC to decide whether to provide the flexibility to establish the rise time at the generating unit terminals or at the connection point based on the objectives of the draft rule.

Q4. Maximum continuous current definition: Schedule 1 - [17] Chapter 10

APD expects that this definition with its reference to the normal voltage removes the likelihood of NSPs requesting proponents to base the maximum continuous current calculation on 0.9pu connection point voltage.

However, the use of the term normal voltage still has some ambiguity and may be subject to change. While normal voltage is used throughout the NER, it is observed often a GPS will specify the connection point normal voltage equal to the Connection point nominal voltage, regardless of historical voltage on site, as the voltage on site is

subject to change over the lifetime of the plant as the network changes. We propose due consideration be given to if the Chapter 10 definition for maximum continuous current should use the term nominal voltage rather than normal voltage to further remove ambiguity over the lifetime of the project as is the intention of this change.