

12 July 2019

Mr Brett Rowse
Chairperson and Commissioner
Essential Services Commission of South Australia
GPO Box 2605
Adelaide SA 5001

Lodged via the ESCOSA website

Dear Mr Rowse,

Licensing arrangements for generators in South Australia

The Clean Energy Council (CEC) is the peak body for the clean energy industry in Australia. We represent and work with hundreds of leading businesses operating in renewable energy and energy storage along with more than 6,000 solar and battery installers. We are committed to accelerating the transformation of Australia's energy system to one that is smarter and cleaner.

The CEC welcomes the opportunity to provide comment on the Essential Services Commission of South Australia (ESCOSA) consultation on licensing arrangements for generators in South Australia (SA). This consultation is important to industry to ensure the licensing arrangements remain fit for purpose considering recent generator technical performance standard (GTPS) changes to the National Electricity Rules (NER). It is also important to ensure SA licensing requirements do not impose unnecessary requirements on generators that may increase connection times.

We support the Australian Energy Market Operator's (AEMO) advice to ESCOSA to remove twelve out of fifteen of the licence conditions as it limits the duplication between the GTPS amendment to the NER and the licencing requirements on generators in SA. We agree that the amended NER addresses the technical requirements of the ESCOSA generation licence for these twelve conditions.

However, we do not support AEMO's advice to retain the remaining three licence conditions for disturbance ride through, system strength and system restart. Retaining these three conditions is not in the interest of ensuring consistency with the GTPS applied across the rest of the National Electricity Market (NEM).

Further, the Australian Energy Market Commission's (AEMC's) recently completed GTPS rule change process ruled on the most appropriate technical framework to assess generator connections across the NEM with the explicit intention that these GTPS would be appropriate as the entire system transitions to one with higher renewables penetration. The industry provided significant comment throughout this process to ensure a balanced outcome. With the AEMC process now complete, we support ESCOSA applying the GTPS as outlined in the NER in SA to ensure consistency across the NEM.

Technical commentary to support this position regarding the three individual conditions ESCOSA is proposing be retained is found in the attachment to this submission.

If, however, ESCOSA elects to retain the final three conditions, then the CEC suggests the remaining three conditions for generator licencing are streamlined alongside the NER

GTPS requirements. Namely, processing a generator application for licencing in SA should occur concurrently with its connection application and GTPS negotiations with the network system provider (NSP). Both processes streamlined in unison will be cost effective and may contribute to easing the connection timing issues that are causing delays throughout industry.

Thank you for the opportunity to comment on this consultation. If you would like to discuss any of the issues raised in this submission, please contact Tom Parkinson, Policy Officer, on (03) 9929 4156 or tparkinson@cleanenergycouncil.org.au, or myself, as outlined below.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Lillian Patterson', written in a cursive style.

Lillian Patterson
Director Energy Transformation
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(03) 9929 4142

CEC comments on three proposed remaining conditions

Disturbance ride-through – Voltage phase angle shift

The existing condition states a requirement for voltage phase shift to not operate for phase angle changes less than 20 degrees. Voltage phase angle shift detection (also known as Vector Shift protection) for anti-islanding is known to be unreliable as it can operate for genuine network switching events when set too sensitively. Desensitising this protection to a value greater than 20 degrees will likely not detect an actual islanding event and it is for this reason that it is not utilised in many other states across the NEM.

Requirements for anti-islanding protection are covered by the relevant NSP across the NEM and also in S5.2.5.8(c) of the NER. Removal of this requirement would be consistent with the rest of the NEM with regards to GTPS.

System Strength

It is noted that as part of the GTPS rule change process, AEMO put forward a similar rule and the AEMC ruled to not include a system strength access standard. Retaining a system strength access standard would be at odds to the AEMC's final ruling and creates inconsistency across the NEM.

Some of the reasoning for this is as follows.¹

- *the extent to which such an obligation may impose upfront costs on connecting participants, to account for a future scenario that may not eventuate, thereby representing a potential barrier to entry for connecting generators.*
- *the manner in which AEMO's proposed system strength access standard interacts with other Commission rule changes*

For example, AEMO considers this proposed access standard to complement the Commission's draft determination for the managing power system fault levels rule change as published on 27 June 2017. The managing power system fault levels draft determination provided an enhanced framework that requires NSPs to maintain system strength, measured in terms of Short Circuit Ratio (SCR) at nominated points in the network above an agreed minimum level under a defined range of conditions. On 19 September 2017, the Commission published a final determination for the Managing power system fault levels rule which has changed the metric used to measure system strength away from the requirement to maintain SCR to determine minimum fault levels at generator connection points. SCRs were viewed as potentially placing an onerous burden on generators, NSPs and AEMO. For many existing generators, determining a minimum SCR was considered to be expensive, particularly if it required the involvement of the original equipment manufacturer.

Instead, the final rule obliges AEMO to develop 'system strength impact guidelines' that will set out a methodology and model to be used by an NSP when undertaking a system strength impact assessment in relation to what harm, if any, a new generator will need to remediate as a result of its connection.

¹ AEMC, Consultation Paper - National Electricity Amendment (Generator Technical Performance Standards) Rule 2017, 19 September 2017

The Commission is also aware of interactions between system strength and a generator's ability to meet its performance standards in other areas, such as reactive power and disturbance ride through. In particular, the reactive power injection requirements for voltage regulation will depend on the system strength conditions faced by the generator. As the generation mix in the power system changes, and the penetration of asynchronous generation increases, system strength may vary significantly across the day. Therefore, generating systems may need capabilities that take into account a range of system strength conditions. Accordingly, the Commission will also consider how an access standard for system strength interacts with access standard settings in other areas, particularly in respect of the range of potential system strength conditions a generator may face.

System Restart

In AEMO's initial submission for revision of GTPS to the AEMC (Section 9.3)², AEMO identified the requirement to aid in system restoration as another key area for review.

In particular, AEMO noted that:

Future work should explore the ability of non-synchronous generation to:

- *Provide voltage and reactive support during system restoration.*
- *Capably provide system restart services.*

In the subsequent GTPS rule change process however, this consideration was not given any further focus (or requirements placed on generators). The role of asynchronous generation in system restoration is important across the NEM, however it should be assessed as part of the overall system restoration process. In particular, any requirements should be captured under a System Restart Ancillary Services (SRAS) agreement on an as required basis. Demonstrating the ability of a generator to operate under very low levels of system strength and supply low levels of load can require extensive studies and add costs to projects. Such requirements should be captured in a SRAS agreement.

² AEMO, Rule Change Proposal – Generator Technical Requirements, 11 August 2017