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Submitted online to:

<https://www.aemc.gov.au/market-reviews-advice/investigation-system-strength-frameworks-nem>

Dear Mr Hyatt,

Investigation into System Strength Frameworks in the NEM **Reference: EPR0076**

The Australian Energy Council (the “**Energy Council**”) welcomes the opportunity to make a submission in response to the Australian Energy Market Commission’s (“**AEMC**’s”) *Investigation into System Strength Frameworks in the NEM Discussion Paper*.

The Energy Council is the industry body representing 23 electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. These businesses collectively generate the overwhelming majority of electricity in Australia, sell gas and electricity to over ten million homes and businesses, and are major investors in renewable energy generation.

Introduction

The Energy Council appreciates the work the AEMC has done to investigate system strength and notes the overlap with the AEMC’s work on the Coordination of Generation and Transmission Investment, and the Energy Security Board’s (“**ESB**’s”) work programme. The ESB’s work programme includes consideration of system security services, as well as a review of the post-2025 National Electricity Market (“**NEM**”) design. To ensure work is not duplicative and possibly inconsistent, it is important that the conclusions of this investigation are incorporated into related projects, and, most importantly, the ESB’s deliberations.

Discussion

Managing the power system is a complex task which requires the balancing of many different technical and economic parameters to ensure that reliability, safety and security are maintained. An overall consideration of this balancing of technical and economic considerations is for efficient investment to occur, and the long-term interests of consumers to be considered, but these long-term needs may be in conflict with the short-term demands of managing technical parameters. To resolve these issues, the Australian Energy Market Operator (“**AEMO**”) issues regular planning reports, such as the Integrated System Plan (“**ISP**”),¹ but also *ad hoc* reports, such as the South Australia System Strength Assessment.²

Reports such as these indicate existing (if any) and possible future system strength shortfalls, and can provide the impetus for such shortfalls to be addressed. It then comes down to the most efficient method of resolving such shortfalls, bearing in mind the technical parameters which must be satisfied

¹ For example, Australian Energy Market Operator, *Integrated System Plan*, July 2018

² Australian Energy Market Operator, *South Australia System Strength Assessment*, September 2017

in doing so, and the costs involved in implementing a solution. Given the complex nature of system strength assessment and modelling, some solutions may be correspondingly complicated, for little additional benefit.

The AEMC has proposed four possible models for addressing system strength issues, each of which has different strengths and weaknesses in providing system strength, while at the same time offering the most economically efficient means of doing so. In each case it is important that, besides satisfying the system strength requirements, the obligations imposed on new entrant generators are not an impediment to timely connection.

Centrally Coordinated

The Energy Council recognises the complexities of system strength assessments, and appreciates the simplicity of the model set out in the Discussion Paper, which is also likely to be a small additional cost compared with the capital being expended to build the connecting generators which are anticipated to affect system strength. There are concerns that the model will result in additional unnecessary costs due to forecast error, modelling limitations and premature, over-purchasing of system needs, and in addition there is no signal to the connecting generators to solve the problem for themselves. However the Energy Council would like to see more consideration of this option, since it appears to offer promise.

Decentralised Approach

With system strength needs telegraphed by AEMO in good time, a market-based solution will offer the flexibility and efficiency to provide what is necessary at the least cost and in the most innovative way possible. However this is a very complicated solution, requiring amendment to the NEM Dispatch Engine, and while this would further contribute to ensuring that energy and system services were optimised, the cost and complexity of the solution may not reap the rewards necessary to justify the expenditure. Nevertheless this will ensure that investment and operational decisions rest with those parties which are best able to manage them, and drive productive efficiency for the broader market. On this basis, the Energy Council believes that this option should be further explored by the AEMC.

Mandatory Service Provision

There are attractions in the simplicity of having each generator provide system strength, however despite individual generators seeking the lowest-cost option to satisfy their obligations, the individual nature of the obligation will stifle the ability of generators to reach agreement with other generators, and implement a joint arrangement to satisfy the system strength needs. This will result in over-investment for the broader generator fleet, and additional costs for individual generators, which may compromise project viability, and cause investment (and connection) delays. In addition, the incentive to resolve the system strength problem is removed, and therefore the Energy Council does not support this model.

Access Standard Mechanism

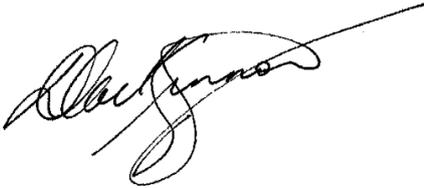
The Energy Council notes the proposal to use an access standard mechanism to ensure that all generators are able to withstand low system strength conditions. While this would make new generators more tolerant to periods of low system strength, it does not address the issue of maintaining adequate system strength, and additional arrangements would need to be put in place to ensure system security. It is the Energy Council's understanding that the network fundamentally needs a degree of system strength, and it is unlikely that the overall network could be operated in a low system strength mode. In addition, it is likely that existing generators and equipment are not likely to be tolerant of such network operation. On this basis the Energy Council discounts this proposal as an adequate solution.

Conclusion

In conclusion, the Energy Council supports the AEMC continuing work to examine and better define what system strength is, how it is measured, and what standards apply. However the Energy Council recommends that the AEMC should work closely with the ESB to ensure that any conclusions made by the AEMC are incorporated into the ESB's deliberations.

Any questions about this submission should be addressed to the writer, by e-mail to Duncan.MacKinnon@energycouncil.com.au or by telephone on (03) 9205 3103.

Yours sincerely,

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

Duncan MacKinnon
Wholesale Policy Manager
Australian Energy Council