15 Feb 2023

Mr Daniel Westerman
CEO, Australian Energy Market Opperator
Lodged by email to: forecasting.planning@aemo.com.au

Dear Mr Westerman,

Response to *Draft 2023 Inputs, Assumptions and Scenarios Report*

Windlab welcomes the opportunity to provide feedback on the Australian Energy Market Opperators (AEMO)'s *Draft 2023 Inputs, Assumptions and Scenarios Report* (Draft IASR) published on 16 December 2022.

Windlab is a member of the Clean Energy Investor Group (CEIG) and fully supports the CEIG's submission.

In addition to what is contained in the CEIG submission, Windlab would like to make two comments on REZ capacity factors & REZ build limits:

- The capacity factor for the "N5, South-West NSW" REZ is given as 29%-30%. Windlab has been monitoring in this region for multiple years, and can confirm that the capacity factors of wind farms in this area are likely to be in the range 38% to 46% before curtailment losses.
- The Build limits for many REZs are zero for wind, but non-zero for solar, or vice-versa. Some of these build limits appear to reflect transmission limits rather than renewable resource limits. Windlab is concerned that these build limit assumptions are being used to drive the relative mix of wind and solar within a REZ, rather than letting the optimisation software determine the optimal ratio. Windlab would like more transparency over how these build limits are determined.

Capacity Factors

Windlab is a global renewable energy development company that has developed over 1 GW of operating wind farms around the world. Windlab's Australian projects include Coopers Gap, Collgar, Oaklands Hill, Kiata and Coonooer Bridge Wind Farms, and the Kennedy Energy Park. The Kiata and Coonooer Bridge wind farms regularly achieve the highest monthly and annual capacity factors of any operating wind farms in Australia. Moreover, Windlab has a long history and proven ability to accurately forecast the pre-

curtailment capacity factor of a wind farm prior to construction, based on measurements of the wind speed.

Windlab has been monitoring in the SW NSW REZ for multiple years, and is confident that wind farms in this region will be able to achieve pre-curtailment capacity factors as high as 46%. Moreover, there is sufficient wind resource in the region to have multiple GW of wind farms in this region with capacity factors over 38%.

Windlab is therefore concerned that the wind traces used by the ISP in this REZ have annual capacity factors of approximately 30% for the high wind trace, and 29% for the medium wind trace.

Windlab believes that the low assumed capacity factors in this region as used by the ISP have underplayed the importance of this REZ. In addition, the SW NSW REZ is predominantly flat, easy to access and construct large infrastructure with low population densities compared to other NSW renewable energy zones. This

Build Limits

Windlab notes that many REZs in the Draft 2023 Input & Assumptions Workbook have build limits of zero MW for wind, but non-zero limits for solar, and in some cases vice-versa.

Given that many of the REZs with a build limit of zero MW for wind have plenty of available land with good quality wind resource, it appears that these build limits are being used to signify transmission constraints rather than renewable resource limits. However, many of these same REZs have a very large build limit for solar, which suggests that the REZ may indeed have spare transmission capacity, but that this is being reserved for solar rather than wind.

Given the above, Windlab is concerned that in some cases these inputs are being used to determine the optimal mix of wind and solar in a particular REZ, rather than letting the optimiser determine this mix. It may be that there's an opinion that a REZ already contains as much wind or solar as is desirable, but it should be the job of the optimiser to determine this.

Windlab recommends that AEMO should reconsider the build limits for wind and solar in each REZ, and should also improve the transparency as to how these build limits are determined. Windlab believes that each REZ should have a transmission limit (as it currently does), but that wind and solar limits should be specified solely by the amount of land available with a given wind or solar resource. The optimal mix of wind and solar should not be determined by the Build limits in the assumptions workbook, but they should be an output of the optimiser.

Windlab thanks AEMO for the opportunity to provide feedback on the *Draft 2023 Inputs, Assumptions and Scenarios Report*, and looks forward to continued engagement on these issues. For any further information about Windlab's submission, please contact David Osmond via the email david.osmond@windlab.com

Yours sincerely

John Martin

Chief Executive Officer

Windlab