Ricketts Point Power Pty Ltd

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31 January 2018

Re: Submission Regarding ISP Development

Dear AEMO team,

Please find attached to this cover letter Ricketts Point Power's submission to the ISP program questions 1.1 and 1.2.

Thanks for the opportunity to provide feedback. Please do not hesitate to contact us with any further questions regarding this submission.

Best Regards,

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ATTACHMENT 1

1.1.1 The material questions the ISP seeks to address are in Section 1.3.1. Are there any other questions the ISP should address?

Response

…….“To what extent could aggregated load shifting and price-responsive load management, made available through investment into distributed energy resources (DER), reduce the need for large-scale generation and transmission development to replace the existing generation fleet as it reaches end of life, while maintaining power system reliability and security…”

It is suggested that this point could be expanded to explore system architectures where significant DER microgrids form the major element of the energy system and the large-scale generation and transmission is only needed to supply large industrial loads and to provide ‘back-up’ to micro grids which only need to import a minor percentage of yearly load requirements.

This would be a step beyond ‘aggregated load shifting’ to a more significant load removal.

Rationale

Ongoing modeling (being conducted in support of business development activities) by Ricketts Point Power (RPP) suggests that it is becoming possible to design PV/Battery/CHP ICE microgrids that could be totally disconnected from the existing grid and provide 20 year LCOE of electrical and heat energy at around 30 c/KWh using present day technologies and costs. For such systems grid energy would be competing against the marginal cost of ICE capital / running costs, where ICE runtimes are limited to approximately 1500 hours per annum.

A modeling task is presently underway looking at a micro grid based around a Melbourne local council area (i.e. Bayside). It is looking like for such a suburban area, with a mix of domestic, light commercial and limited industrial loads, it will be commercially viable to design a microgrid that requires import energy (from either the external grid or from ICE back-up generation) for only 1500 to 2500 hours per annum.

This modeling takes into account the available space for PV arrays, long-term probability distributions for incident solar energy and battery capacity based on consecutive run of days probability distribution for days of reduced solar incident energy.

1.2 The scenarios the modelling will use to inform the ISP are outlined in Section 1.4. Recognising the time limitations to produce the first ISP in mid-2018, are these suitable scenarios to address at a high level? Should these be expanded in more detailed analysis following the first high-level ISP?

Response

Based on the above discussion there may be a need for a variation of the ‘slow change’ scenario that includes ‘Strong’ Rooftop PV and ‘Strong’ distributed storage (but storage for microgrid use not wider grid export.)

Rationale

The two proposed bookend scenarios assume a “business as usual’ system architecture. As noted above there is a reasonable possibility be that there could be a permanent reduction in the ‘average load’ required to be supported by the larger extant grid. This scenario involves a grid that provides support to microgrids for limited hours per annum rather than a gird that has growth in its load requirements reduced or suppressed over time.

…..end