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Australian Energy Market Operator  
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Dear Sir/Madam

### **Draft 2020 Integrated System Plan Consultation**

Renewable Energy Systems Australia Pty Ltd (RES) welcomes the opportunity to provide a submission to the Australia Energy Market Operator's (AEMO) draft 2020 Integrated System Plan (ISP) consultation.

RES is the world's largest independent renewable energy company with a portfolio of 17 GW of wind, solar, and storage projects, supporting 5.5 GW of operational assets operating across 10 countries. The RES vision is to create a future where everyone has access to affordable zero carbon energy.

RES in Australia is realising this vision by developing high-quality wind, solar and energy storage projects across Queensland, New South Wales, Victoria, and South Australia, bringing together expertise and technology partners from around the world.

RES is supportive of the work AEMO is undertaking to develop a whole-of-system plan and views the ISP as a critical part of facilitating an orderly and efficient transition to affordable, reliable, renewable energy. We broadly agree with the inputs and scenarios considered in the draft ISP and value the consistency in AEMO's messaging and continuation of the development plan from the 2018 ISP to the draft 2020 ISP.

#### **Integration of Renewable Energy Zones within augmentation options**

We strongly support the proposal to target grid augmentations to balance resources and unlock Renewable Energy Zones. Compared to the 2018 ISP, the 2020 Draft ISP has improved interconnector options and considered new augmentations seeking to access and better integrate renewable resources. The proposed options for QNI Medium and the Kerang option for VNI West are great examples where interconnector expansions can improve network access for lower cost renewable developments and provide route diversity to the existing network.

Whilst we commend the draft ISP for identifying the actionable projects, we note that there is an opportunity to develop complementary projects at the sub-transmission level. Sub-transmission investments can help reduce the risk of constraint associated with congestion on lower voltage networks that run in parallel to the higher voltage backbone. These investments could also improve network access

for scale-efficient generation projects that would otherwise be locked out by the high cost of connecting to higher voltages.

We believe a successful energy transition requires diversity in renewable technologies of differing capacities, located throughout each level of the network. Providing the linkage between the transmission and sub-transmission network plan will provide the signal required to facilitate a greater breadth and depth of renewable energy developments and bolster the energy transformation.

### **Determining the whole-of-system technical requirements**

We advocate for further work to determine the whole-of-system technical requirements for new generating systems and network technologies to ensure the generation capacities targeted by the ISP can be fulfilled. We recognise and support the work AEMO is undertaking as part of its Renewable Integration Study (RIS) to quantify the technical renewable penetration limit. However, we encourage AEMO to focus on characterising the desired behaviour from each technology rather than prescribe rigid requirements which risk stifling innovation through new technologies and concepts.

Emerging technology like grid-forming invertors, and similarly novel applications of existing technologies such as battery energy storage in virtual transmission lines (VTL) should not be constrained by legacy technical requirements and should be evaluated in the ISP on equal footing as more established technologies. The ISP's 20-year planning horizon allows enough time for new technologies to develop and mature, and for regulations and the Rules to change and adapt to those new technologies. The ISP should remain firmly technology-neutral and not preclude a technology from participating in the ISP.

### **Transitioning to an alternate market design**

We support the finding that grid-scale renewables are the most cost-effective way to replace Australia's ageing fleet of coal generators. We note that the analysis to date has been based on least cost and has not considered whether there is sufficient market signals for the required level of investment in new generation. We support the ongoing work of the Energy Security Board (ESB) post-2025 market review and believe that an alternative market designs that support the development path outlined in the ISP will support this least cost provision of energy.

In summary, RES is aligned with AEMO on its development options and the optimal development path but strongly recommends that the ISP investigates and lay out the requirements on, network planning, technical, and market design for the ISP to be achieved.

Thank you for the opportunity to comment on this consultation. If you have any questions regarding the submission, please don't hesitate to contact Martin Hemphill on 0421 481 267, or myself on 0402 669 717.

Yours sincerely,



**James Tin**

Grid Commercial and Strategy Manager