Preferential Subject 2: CHANGES TO MARKETS AND REGULATION TO ENHANCE RELIABILITY AND RESILIENCE

Q8. Inverter based resources (IBRs) utilizing the grid following (grid supporting) technology need a certain level of system strength to maintain stable operation and, per se, do not sufficiently contribute to system strength, on their own, without inherent transmission systems strength being provided. Whose responsibility should it be to provide enough system strength services to ensure stable operations– transmission service provider or the generators? If the latter, then how does the generator provide this and how are costs recovered? Does making the generator responsible for system strength requirements create an entry barrier for renewable generators?

Under the Australian National Electricity Rules, Transmission Network Service providers (TNSPs) must plan to provide the suitable system strength to support inverter-based resources (IBR) connections that are forecasted by AEMO. New access standards also require generators, loads and market network service providers to guarantee the demand for system strength. Generators and large loads may choose between paying for using the system strength services provided by TNSPs or build their own system strength.

Planning for system strength by Network Service Providers[1] (NSPs) can be an efficient way to manage the system strength required by IBR plants. However, there are some practical issues that can be faced by TNSPs and generators.

- If actual connections of IBR plants do not progress as per the planning forecast, there can be either shortage of the system strength or it can result in stranded assets (over planned).

- It is not practically possible for the TNSP to plan for every IBR plant that may connect to the network under an open access regime. Therefore, not all the plants would have the option to pay for the system strength service planned by NSP, especially the plants that plan to connect to distribution network.

- Under the new regulatory framework, all IBR plants are either expected to pay for the system strength service or self-remediate if the general system strength impact caused by the IBR plant is above the threshold. If the threshold for general system strength impact is not set appropriately, this may force small plants connecting to the distribution network to self-remediate based on reduced available fault level (AFL).

[1] Under the National Electricity Market (NEM), NSPs owns, operates or controls a transmission or distribution system, whereas the Australian Energy Market Operator (AEMO) manages the electricity and gas systems and markets across Australia.