Taipei energy storage for renewable energy

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TAIPEI (Taiwan News) — AsTaiwan’s renewable energy industry faces turbulence in the renewable wind sector, it must stride forward to meet its goal of an energy storage system of 1,500 MW by 2025.

Taiwan will only achieve this goal by installing Battery Energy Storage Systems (BESS). At an event hosted by the Australia New Zealand Chamber of Commerce in Taiwan (ANZCham), the Australian Trade and Investment Commission (Austrade), and Australian energy company Akaysha Energy, Counselor to Taiwan’s Ministry of Economic Affairs (MOEA) Wu Chih-wei ()said BESS provides overall stabilization and regulation of the power grid.

On the grid-side, it strengthens grid resilience and flexibility, with a focus on frequency regulation and reserve capacity. On the generation-side, it enables integration with other renewable energy sources by providing supply for peak demand periods and regulates large-scale consumers by requiring them to install energy storage to meet their own use and prepare for contingency needs.

However, it is apparent there have been some ongoing issues with energy supply and demand, both domestically and commercially, continuing to rise, as will the recently announced costs to the consumers. Taipower has to do better.

Akaysha Energy is a large-scale utility battery energy storage developer, asset manager, and owner operator. In October 2022, Australia’s New South Wales government awarded Akaysha by competitive tender the bid to construct, own, and operate the world’s most powerful battery, the Waratah Super Battery (850 MW/1680 MWh).

Akaysha advocates a BESS PPA procurement model, where a PPA is simply a long-term electricity supply agreement between 2 parties, usually a power producer and an electricity consumer or trader. The BESS PPA procurement model is the preferred model in the Australian energy market and some later statistics provide a very interesting comparison between Australia and Taiwan’s current journey in renewables.

Akaysha’s representatives believe BESS PPAs are advantageous as the battery project risk is transferred to the private sector, and to specific project owners through the Build, Own, and Operate model. This spreads BESS cost outlays and associated risks out over the duration of the PPA concession, even more so with liquidated damage regimes in place to incentivize high contract performance.

Traditional public sector constraints are minimized under a BESS PPA by reducing budget, approvals and timing constraints normally experienced with capital-intensive projects. Further, BESS PPAs reduces balance

sheet limitations, and makes more efficient use of capital and allows for greater diversification.

BESS PPAs also mean that governments are not required to find the specialised skills required to build, own, and operate BESS assets. Those requirements are fully addressed by companies such as Akaysha who develop and maintain the workforce, provide HR, training, performance, reporting requirements, construction expertise, project management, contract management, sub-contractor arrangements, safety, and reporting obligations.

Akaysha prefers to build its BESS on decommissioned sites. In the case of the Waratah project, Akaysha is utilizing a decommissioned coal fired power station site, thus minimizing the potential of local objections to the use of scarce land resources.

Taiwan has an urgent need for large scale storage and Taipower urgently requires large BESS. Similar to other power systems, the electricity network in Taiwan is facing real risks that can be mitigated with BESS technologies.

Northeast network deficits — The rapidly changing energy mix in Taiwan with the planned thermal and nuclear decommissions have already resulted in energy shortfalls. The Northeast Network will have around a 5-6 GW shortfall for the next 5 years.

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