Case Study: Powering Malaysian Universities with All-in-One Battery Energy Storage Systems

Background

Malaysia's universities have faced challenges with power instability, prompting a search for reliable energy solutions that align with environmental sustainability goals. To address these needs, several universities opted for commercial and industrial (C&I) energy storage systems (ESS). This decision not only aimed to stabilize power but also to support Malaysia's commitment to environmental protection and sustainable energy initiatives.

Solution: All-in-One Battery Energy Storage System (BESS)

Solara Power provided an all-in-one Battery Energy Storage System (BESS) tailored to the needs of higher education institutions in Malaysia. The selected system is a High Voltage, Mini C&I ESS that delivers 50kVA power with options for energy storage capacities of 80, 100, 120, and 130 kWh. Key features of the system include:

- **Fully Integrated Design**: The system comes pre-configured with essential components—battery trays, racks, inverters, Battery Management System (BMS), Microgrid Controller, HVAC, fire suppression, islanding switch, and an outdoor-rated enclosure. This integration minimizes on-site installation time.
- **Modular Capacity Expansion**: The modular architecture allows easy expansion of storage capacity, with a single system scalable up to 130kWh.
- **Adaptable Installation**: The rack-mounted design supports flexible installation options suitable for various university settings.
- **Tier 1 LiFePO4 Safety and Stability**: The system's use of Tier 1 LiFePO4 Phosphate chemistry ensures a high level of safety, thermal stability, and reliability.
- **Optimized Energy Management**: The multi-level BMS optimizes and balances the system while supporting up to 130kW rated DC power and handling charge/discharge currents of up to 125A peak discharge for short bursts at optimal temperatures.

Results and Impact

The deployment of this energy storage solution has provided universities with steady and reliable power, reducing interruptions and enabling smoother campus operations. The project gained further recognition at the opening ceremony of Malaysia's first new energy building, the Sustainable Energy Living Laboratory, at the University of Kuala Lumpur. This facility symbolizes a milestone in the country's journey towards sustainability and the advancement of new energy technologies.

Conclusion

This case demonstrates how integrating advanced energy storage systems can enhance energy stability and support sustainability initiatives within educational institutions. Solara Power's all-in-one BESS solution is positioned to help more organizations to achieve reliable power while championing environmental responsibility.