



SmartEnergi Power Assurance Service (SPAS™)

Competitive Advantage: SPAS vs Other Behind-The-Meter (BTM) Energy Storage Service Providers

SmartEnergi Power Assurance Service (SPAS™) is offered using our intelligent battery energy storage system (iBESS™) which uses either Lithium ion or Flow battery technology depending on client needs. More importantly, the iBESS is equipped with modern micro grid automatic switching technology. This enables switching over from the main power grid to the micro grid in milliseconds in the event of power outage enabling the iBESS to supply emergency electricity to power critical operations or service.

SPAS offer significant advantages over competing companies offering behind-the-meter energy storage solutions. The table below details some of these advantages.

	Conventional Behind-The-Meter (BTM) Energy Storage Companies	SmartEnergi Power Assurance Service (SPAS™)
<i>Service Offering Advantage</i>		
Electric Power Resiliency	Not the primary focus because these companies lack the financial tools to help customers quantify and justify their investment in resiliency services.	SmartEnergi has proprietary financial modeling tool that allows us to help customers quantify and justify their investment in electric power/energy resiliency services.
Energy Cost Savings	This is the primary focus of these companies because it is easy to justify load shifting to reduce peak demand and save customers on their <i>energy bills</i> .	SmartEnergi can also use the same resiliency energy system to provide customers with <i>bill savings services</i> . <i>Optionally, SmartEnergi can offer a combination of resiliency and energy cost savings services where both the energy bill savings and the benefits of resiliency services can be quantified.</i>
<i>Technology Advantage</i>		
Type of Technology	Mostly Li-ion.	Li-ion or flow battery depending on the load and whether SmartEnergi is supporting short or long-term power interruptions.
Type of Li-ion Technology	Commodity liquid electrolyte Li-ion technology.	Proprietary and safer solid-state Li-ion cell technology.
Cycle Life and Capacity Retention	Relatively shorter cycle life and low capacity retention. Achieves 1000 cycle life when cycled at 0.5C/0.5C charge/discharge rate at 100% depth of discharge (DOD). Need to reduce DOD to 80% (<i>which reduces available energy</i>) in order to achieve 2000 cycles.	Superior capacity retention and over 2 times cycle life advantage. Achieves over 2,000 cycle life when cycled at 0.5C/0.5C charge/discharge rate at 100% DOD. Maintains 86% capacity retention at cycle number 2,000 at 100% DOD.
Performance in High-Temperature Conditions	Tends to degrade significantly when operated in elevated temperatures above 45 °C.	Excellent performance in climates with elevated temperatures. SmartEnergi has successfully cycled our cells at 70 °C (or 158 °F), more than enough to support superior operation of the iBESS in the hottest state in the US.
Performance in Low-Temperature Conditions	Not reliable at temperatures below 0 °C.	Excellent performance under low temperature conditions. For instance, our cells retain 74% of the capacity at -20 °C.