



SmartEnergi Power Assurance Service (SPAS™)

Intelligent Battery Energy Storage System (iBESS) vs Diesel Backup Generator

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 important, 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. The table below compares conventional power backup solutions such as diesel generator versus iBESS.

	Backup Diesel Generator	iBESS™
Technology	Diesel fueled generators were invented over 100 years ago and have served their time with respect to backup power	Modern lithium-ion or flow battery micro grid technologies with automatic switching
Reliability	Not as reliable as they appear. The <i>Electric Power Research Institute</i> estimates 20-30% failure rate for backup generators. Moreover, those in the frontlines of disaster management such as FEMA and Army Corps of Engineers believe the failure rate is much higher (about 50%).	Instant-on reliability. Capable of switching over in milliseconds in the event of a power outages or power failures.
Noise	Noisy	Quiet
Environmental Impact	Polluting	Non-polluting
Location of Deployment	Can only be installed outside or in the basement because of excessive noise, pollution, and vibration.	Can be installed where it is impossible to install diesel generators. For example, they can be installed both outdoors and indoors in plain site because they are clean, don't pollute and are not noisy. Can be installed in offices and at higher elevations, including skyscrapers.
Vulnerability to Natural Disasters	Easily damaged because of the location of installation, and could be rendered inoperable when needed the most during a flood or hurricane.	Since it can be installed at higher elevation (For example on a 2 nd or higher floor of a building), it enables continuous operation when it is needed the most during a flood or hurricane.
Flexibility in Deployment	Limited	Maximum flexibility. Can be installed to protect specific equipment (s), specific electrical zone or a whole building or a whole community.
Appropriateness for Clients in Multi-tenant Building	Most client don't control what can be installed outside. However, even the apparently unreliable diesel generator is inappropriate for them because it cannot be installed within their rental space.	Can be installed within the rental space, giving commercial renters control over how they meet their power resiliency needs.
Equipment acquisition and Life time Cost	May have relatively low capital acquisition cost but has expensive lifetime costs because of frequent repairs, maintenance, spare parts and fuel costs.	May appear to have higher capital acquisition cost but has lower life time cost because there is no or negligible repair, maintenance, spare parts and fuel costs.