

TECH OFFER

Battery Generators as Sustainable Power



KEY INFORMATION

TECHNOLOGY CATEGORY:

Sustainability - Sustainable Living
Sustainability - Low Carbon Economy
Energy - Battery & SuperCapacitor
Infocomm - Internet of Things

TECHNOLOGY READINESS LEVEL (TRL): **TRL9**

COUNTRY: **SINGAPORE**

ID NUMBER: **TO175316**

OVERVIEW

This technology provides a modular and scalable battery energy storage system, designed to optimize power usage in construction, industrial, and commercial applications. The system integrates Lithium Iron Phosphate (LiFePO4) battery technology, for the benefits on high energy efficiency, extended lifespan, and enhanced safety.

The battery solution includes solar panel integration and pairing, allowing clean energy charging during the day whilst reducing grid dependence and usage of diesel generators.

It addresses the challenge of unreliable and inefficient on-site power sources, replacing fuel-based systems with a clean, quieter, and a more cost-effective alternative. The system also supports remote monitoring via IoT, enabling real-time energy management, predictive maintenance, and optimized performance.

This solution is ideal for construction companies, energy providers, and industrial facilities looking to enhance sustainability, cost savings, and operational efficiency especially in places where noise and space is a concern.

TECHNOLOGY FEATURES & SPECIFICATIONS

The power solutions offer a range of models and customizations from 10 to 100 KVA, catering to diverse industry needs.

- **Advanced Monitoring:** Equipped with an IoT proprietary cloud-based system that provides real-time status tracking for enhanced performance and reliability.
- **Fast Charging:** Supports 0-100% charging in just 2 hours via AC power, ensuring minimal downtime.
- **Modular & Scalable Design:** Allows for daisy-chaining multiple units to seamlessly increase power output as required.

Can be deployed at medical facilities, construction sites, industrial operations, and outdoor events that require off-grid, stable, and uninterrupted power solutions for critical applications.

POTENTIAL APPLICATIONS

- **Construction Sites:** Powers equipment, site offices, and lighting without relying on diesel.
- **Industrial & Commercial Buildings:** Provides backup power and supports peak load shaving.
- **Renewable Energy Storage:** Stores solar and wind energy for off-grid applications.
- **Microgrid Systems:** Enables decentralized energy distribution for remote sites.

Ideal Collaboration Partners includes:

- **Construction & Infrastructure Companies** needing reliable power for site offices/off-grid deployment.
- **Government & ESG-focused organizations** aiming for net-zero emissions.
- **IoT and Smart Energy Tech firms** require reliable power solutions to keep their IoT devices and loggers running for extended periods.

MARKET TRENDS & OPPORTUNITIES

Global energy storage market is projected to grow rapidly, with increasing adoption of clean energy alternatives in construction and industry.

- Governments and businesses are pushing for net-zero emissions, increasing demand for battery energy storage solutions and clean energy generation.
- Cost savings and automation make battery-based solutions more attractive than traditional fuel-based generators.
- Data Collection for carbon reduction and Sustainability reporting

UNIQUE VALUE PROPOSITION

- **Zero Emissions & Noise-Free:** A sustainable alternative to diesel generators, reducing the carbon footprint and improving on-site air quality.
- **Remote Monitoring & Automation:** IoT-enabled system with predictive analytics for real-time energy tracking and

improved efficiency.

- **Compact, Mobile & Scalable:** The battery generators are lightweight, portable, and optimized for flexible deployment, making them ideal for site offices, EV equipment charging, and night work.
- **Tailored Solar & Battery Solutions:** Customized battery generators and solar panel specifications based on each client's unique needs, ensuring optimal energy efficiency and cost-effectiveness.