

**DOCKETED**

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# ECM

ENERGY CONTROL MODULE

# POWR2



## POWRBANK

Hybrid Power Systems

# Plug & Play Energy Storage Integration for Generators

## Cut generator run-time down to 4 hours per day\*

The Powr2 POWRBANK integrates lithium ion energy storage with diesel generators to significantly reduce engine hours, emissions and fuel consumption.

The POWRBANK's advanced Energy Control Module (ECM) controls the supply of electricity using stored energy for the majority of the time only turning on the generator when stored energy needs replenishing or the load requires higher power.



# Intelligent Energy Control

## POWR2 Energy Control Module (ECM) & Portal



## Why go hybrid?



### EMISSION FREE

Although Tier 4 engines do a great job of capturing the NOx and PM10 particles that are harmful to humans, CO2 still goes unchecked. Every gallon of diesel burned produces about 22 lbs of CO2.

Integration of Powr2 Hybrid Energy Systems gives you the opportunity to reduce CO2 emissions by up to 80% when compared to running a diesel generator alone.

### OPERATIONAL EFFICIENCY

Integration of a POWR2 POWRBANK ensures the least possible generator downtime by extending service intervals from 10 days to up to 60 days\*.

Operating generators on single shifts rather than triple shifts drastically reduces fuel consumption and engine hours resulting in longer asset life and ultimately a higher resale value.

### THE REAL LOW LOAD SOLUTION

No more call-outs for generators that have failed due to low loads. With the integration of POWRBANK the low load periods are taken care of with stored energy and the generator is shut down.

No need to use load banks and burn fuel unnecessarily for artificial loads; POWRBANK makes more sense.

### POWR2 ECM

POWR2 ECM (Energy Control Module) is the POWRBANK's HMI for the collection, storage and transmission of control data from all connected devices including inverters, batteries, diesel gensets, PV, air quality sensors and many more. POWR2 ECM has a fully customizable UI with multi-layered control logic that creates a unique and personalized control panel according to the application and user requirements. The touch screen facilitates efficient control and monitoring of equipment.

### POWR2 PORTAL

Your energy management cloud platform for reporting and business intelligence. Remote asset management with real time alerts and ability to delegate customer access the POWR2 Portal puts all your data from all sources in one place, displayed however and wherever you want to see it.

Simple : Accessible : Customizable



### POWRBANK Compact

Power: 5kW  
Energy: 10kWh  
Voltage: 120  
Phase: Single



### POWRBANK Pro

Power: 15 - 60kW  
Energy: 30 - 120kWh  
Voltage: 120/240, 208, 400, 480  
Phase: Split or 3



### POWRBANK Hybrid

Battery Power: 15 - 90kW  
Stored Energy: 30 - 120kWh  
Voltage: 120/240, 208, 400, 480  
Phase: Split or 3

\*multiple genset configurations available



### POWRBANK Max

Power: 90kW - 1MW  
Energy: Up to 1MW  
Voltage: 120/240, 208, 400, 480  
Phase: Split or 3

# Case Study Hybrid Power Solution for Engineering News-Record (ENR) Top 20 Green Contractor

## THE CHALLENGE

Many construction companies have active carbon reduction strategies yet on a daily basis they're faced with traditional operational practices that work against these strategies.

One such company realized they could do better by integrating POWRBANKS. On one of their construction sites a generator was running 24/7 as the power source for the site office trailer; this was critical for security lighting, computer server and office fridge among other important appliances. In the site manager's experience, generally, the generator was running well, except that every 2 days the fuel tank had to be refilled and every 10 days it had to be shut down for servicing.

Despite the best efforts of the site manager, and the introduction of an auxiliary fuel tank there were times when fuel ran out causing further down time in the office and giving potential for an overnight lapse in security lighting and server failure.

## THE SOLUTION

Working alongside the site management team, the Powr2 team surveyed the site to determine the most appropriate solution. In order to meet all requirements for power and peak demand, it was decided that a HES-30.60 POWRBANK Energy Storage System would be integrated with the existing 56kW diesel generator.

By installing the POWRBANK the client was able to monitor his energy usage via the POWR2 PORTAL, an online energy management platform, and see that the actual load pulled by the office trailer was between 3 and 6 kw – showing the generator was well oversized for the job.

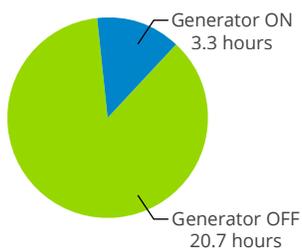
Using load sensing technology, the POWRBANK onboard Energy Control Module was able to automatically turn the generator off and run the trailer on battery power for 20.7 hours out of the 24-hour period. This decreased refueling times from every 2 days to every 7 days and generator service intervals went from every 10 days to every 60 days. Furthermore, the POWRBANK's stored energy allowed the maintenance on the generator to take place without the office losing power.

## THE RESULTS

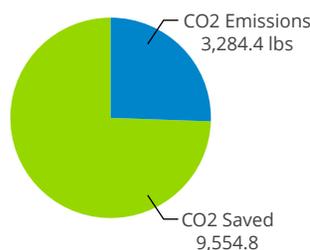
(Data taken August 2019)

By implementing these changes, the client reduced emissions by 74%, reduced fuel usage by 74% and saved significantly on rental and servicing costs.

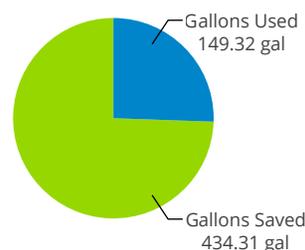
**Generator Running Hours (Daily Ave.)**



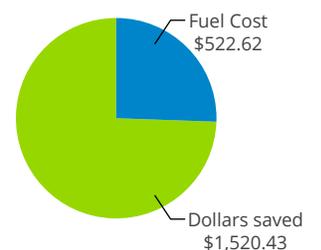
**CO2 Emissions Reduction per Month (Lbs)**



**Monthly Fuel Reduction (Gallons)**



**Monthly Fuel Savings (\$)**



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POWRBANK Hybrid Power Systems