Hybrid Energy Container

The Saskatchewan Research Council's (SRC) Hybrid Energy Container is a decentralized energy solution that integrates conventional diesel generation with energy storage and power management technology. The system reduces generator runtime providing substantial fuel savings and reduced maintenance. This customizable solution serves as a platform for renewable integration to further offset diesel consumption.

Features:

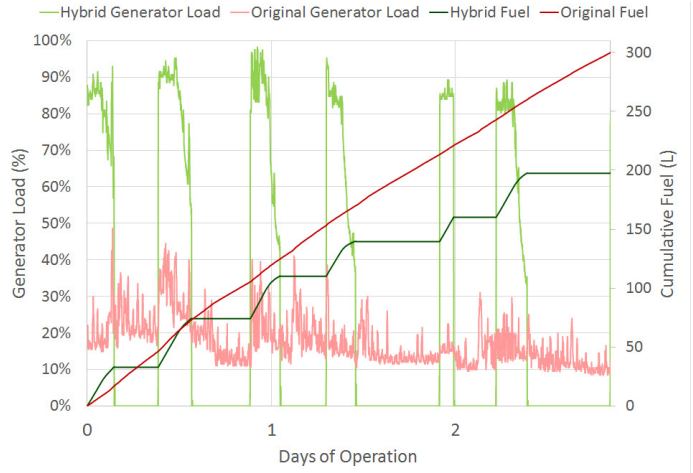
- Designed to operate in environmental extremes
- Intermodal container equipped with industrial skid
- Integrated HVAC
- Online monitoring
- Automated control
- Input for auxiliary energy sources (e.g., solar, wind, grid)
- Integrated solar for battery maintenance
- Microgrid controller

Applications:

Originally developed for use at abandoned mine sites in northern Canada, the Hybrid Energy Container is a proven and reliable solution for providing power to:

- Industrial sites
- Remote communities
- Disaster relief areas
- Exploration and research camps

Figure 1: Comparison of fuel used by hybrid vs. conventional generator



	HEC-60	HEC-225
Electrical Output		
Voltage (VAC)	400	600
Phase	3	3
Current (A)	100	350
Power (kVA)	60	225
Frequency (Hz)	60	60
Connection Point	Breaker Terminals	Breaker Terminals
Auxiliary Input		
Voltage (VAC, 3Ø, 60 Hz)	400	600
Voltage (VDC)	48	700 - 800
Diesel Engine		
Fuel Type	Diesel	Diesel
Brand	Isuzu	Isuzu
Type	4JJ1X	6UZ1X
HP @ 1800 RPM	101	359
Cylinders	In-line 4	In-line 6
Oil Change Interval	500 hrs	500 hrs
US EPA Tier	3	3
Fuel Pump	Electric, self-priming	Electric, self-priming
Electronics	12VDC	24VDC
Generator	Newage-Stamford	Newage-Stamford
Battery		
Type	Sealed Lead-Acid	Lithium-Ion
Capacity (kWh)	259	250
Voltage (VDC)	48	600 - 800
Physical		
Container	20 ft ISO Container	2 x 20 ft ISO Containers
Mass (kg)	19,000	2 x 15,000
Container Dimensions (l x w x h)	6.2m x 2.6m x 2.9m	6.2m x 2.6m x 2.9m (x2)
Operating Temperature (°C)	-40 to +45	-40 to +45
Humidity	100% Non-condensing	100% Non-condensing
Other		
Remote Management	Yes	Yes
Data Logging System	Yes	Yes
Certification	Intertek	Intertek
Standard Warranty (months)	18	18

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