

Case Study: VPS 20-12 Battery Pack Powers Construction Site



OVERVIEW

When homes are constructed in rural and remote locations, grid power may not be available for months after the project has been started. Construction timelines are tight, and a source of portable power is required to keep tasks on schedule before grid power is installed.

In the hills of Lake Country, BC, a property owner was building a house on a hillside and did not have the shore power connected by BC hydro yet. The owner required a portable power source for the construction crew to run their tools and heaters, that could overcome the rough terrain of the construction site.

Conventional portable power sources such as gas or diesel generators are noisy and disruptive to neighbouring residents. They can also use upwards of \$40 per day in fuel, and release noxious emissions into the environment. The Lake Country property owner was looking for a solution that could reduce their fuel costs and noise levels.

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I was hoping to reduce the amount of fuel I was using and Valid had a great solution.

~ Tom McWilliam, Property Owner





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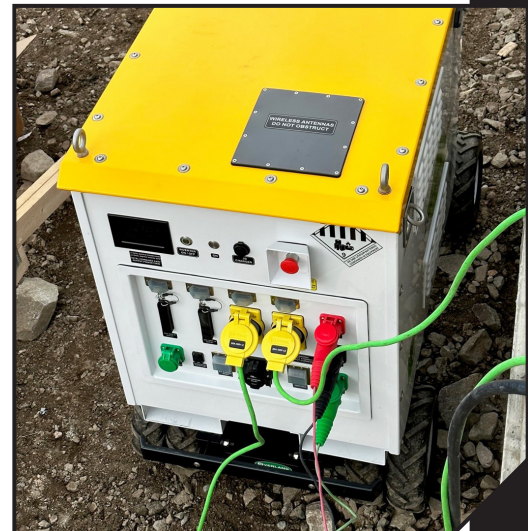
APPROACH

The property owner worked with Valid to determine how much power they would require, and which VPS model would be best suited for the site. The following factors were taken into consideration:

- Project schedule
- Power tool requirements
- Connection points required

Based on the information provided, the Valid team recommended the VPS20-12 battery unit, mounted on a power cart. The power cart would be capable of traversing the hilly terrain around the job site to where power was needed. The 20kWh would also provide ample power for daily use, and based on the tools' power draw, 12kW would be more than enough.

Training was provided to both the property owner and construction site operators. To ensure customer success, the Valid team provides training sessions for anyone using the VPS battery units. Print documentation is also provided for easy reference on site. Finally, Valid's best-in-class support team is always available for any questions.





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RESULTS

The unit was able to power the construction site with a minimal amount of recharging at the end of each day. The charge power was provided by a Honda 11k Generator, which ran for only a few hours each day. Overall, generator runtime was reduced by 75% compared to full-day use for powering the site.

The VPS20-12 was used for the following tasks:

- Providing power for the air compressor
- Charging battery-operated tools
- Powering a 120V AC/ 60Hz heater

The VPS20-12 fuel consumption:

- Total charging time = 14 hours for the week
- Fuel used by the generator to charge the VPS = 43.72 Liters x \$1.60/L = \$69.95
- Typical generator use - \$40/ per day = \$200
- Fuel savings for week = Approx \$130



INVERTER STATE	MON	TUE	WED	THU	FRI	TOTAL
Inverting Hours	0	16.13	19.42	11.28	0	46.83
Standby - Off grid Hours	0	0	0	0	0	0
Standby - On Grid Hours	0	0	0	0	0	0
Charging Hours	0.38	0	3.70	3.02	6.89	13.98
Total Hours	0.38	16.13	23.12	14.30	6.89	60.81
BATTERY POWER OUTPUT / CHARGE						
Total Power Generated (kW*Hr)	0.49	9.28	7.87	9.17	0.38	27.19
Peak Load (kW)	0.03	3.84	4.17	7.21	0.05	7.21
Total Charge Power Consumed (kW*Hr)	-0.73	0.00	-5.62	-4.92	-13.90	-25.17

The most power used in one day was 9.28kWh, with a max peak load of 3.84kW.

CONCLUSION

Use of the VPS 20-12 battery unit drastically reduced both fuel costs and noise pollution. Not only was the property owner satisfied, but their neighbours were happy as well!