

Solar Stik Completes Development of 1kW/2kW Hybrid Power System for Soldier and Small Unit Power

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/EINPresswire.com/ -- The U.S. Army has six modernization priorities that address the challenges of future operational environments, notably the need for reliable, resilient power systems in sustaining Multi-Domain Operations (MDO). Specifically, the Soldier Lethality priority includes a requirement for expeditionary power systems to serve small units and soldiers by providing 2 kW of reliable, man-portable power. The U.S. Marine Corps also has a demand for a small power system capable of reducing energy logistics and extending the operational reach of its current and future weapon systems for expeditionary units.



2kW Hybrid Power System with Li Expander Pak 1300s (left), PRO-Verter S 2000 (middle), Novatio 2kW Generator (right)

[Solar Stik](#)[®], Inc., a hybrid power company located in St. Augustine, Florida, had predicted the eventual requirement for a lightweight, turnkey solution to meet the small-power capabilities gap almost five years ago and began developing the 1kW/2kW Hybrid Power System (HPS) in response. This system required a series of longstanding partnerships and resulted in the 1kW/2kW HPS utilized today.

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Brian Bosley, Solar Stik CEO

The outcome of one of these partnerships, the 34-pound Li Expander Pak 1300, serves as the perfect baseline battery for the system with an energy density of over 84 Wh/kg, the highest energy density among lithium iron phosphate batteries.

According to Brian Bosley, Solar Stik's CEO and Cofounder, “The batteries are the heart of any hybrid power system,

so our partnership with Ultralife Corporation in developing a man-portable energy storage solution that is maximized for capacity was crucial to the 1kW/2kW HPS.”

Alongside Solar Stik's efforts to develop the energy storage for the 1kW/2kW HPS, the company partnered with Novatio Technologies to develop an auto-start capability for Novatio's 1kW Ranger and 2kW Defender portable generators. The Novatio generators operate on JP-8, enabling the Warfighter to maintain the one-fuel concept on the battlefield. The auto-start function for the Novatio generators is seamlessly integrated in the PRO-Verter S 2000, the primary power management and distribution module of the 1kW/2kW HPS. The PRO-Verter S

2000 allows AC waveform synchronization between the generator and inverter for a transfer time of less than 1 ms, which is necessary for small scale hybrid power systems. The PRO-Verter S 2000 can support 120 VAC and 24 VDC simultaneously. It provides for an inverting capability of 1200 watt continuous in pure sine wave output and a surge of up to 2400 watts. It also includes the ability to accept solar power, further enabling autonomous operation.

The 1kW/2kW HPS's open-architecture design enables the system to connect with other power systems as a part of the tactical microgrid solution. The ruggedized and modular design of the 1kW/2kW HPS maintains the highly expeditionary nature required by the Warfighter conducting distributed operations in contested environments against near-peer adversaries.

Mission-critical communications, surveillance, and medical equipment are only as reliable as their power source. Employment of the 1kW/2kW system increases small unit operational readiness, providing the Warfighter the power to complete their missions, anywhere in the world. This idea is echoed by Ronaldo Lachica, Director of Program Management for Solar Stik, who stated "the 1kW/2kW HPS not only allows for the precision logistics necessary for sustaining MDO, but also increases Soldier Lethality by enabling longer sustained operations with limited resupply."

To learn more about the 1kW/2kW HPS and other expeditionary power and energy solutions, please contact Solar Stik at 800-793-4364 ext. 140 or at tech@solarstik.com.

Your mission is your focus. Providing the power for it is ours.

George Winsten
Solar Stik, Inc
+1 800-793-4364

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