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## **New Zinc-Air Battery System Surpasses Industry Benchmark for Off-Grid Energy Source**

*Safe and Non-Polluting Portable Power System Utilizing Zinc-Air Battery Technology Exceeds 72 Hour Off-Grid Energy Needs for Mission Critical, Emergency Applications*

**SANTA ANA, Calif. – June 12, 2012** - QuantumSphere, Inc. (QSI), a leading provider of advanced portable power systems, today announced the availability of its MetAir™ Ranger series for on-demand back-up power in off-grid and emergency applications. While already offering the highest energy density of any commercially available primary battery at the lowest cost per kilowatt hour, QSI's MetAir™ Ranger portable power system has received independent validation that it surpasses the industry's 72-hour emergency preparedness benchmark. The system achieved an unprecedented 108 hours – four and a half days – of instantly accessible emergency power.

The MetAir™ Ranger Series portable power product is ideal for first responders, military, home, school, and business emergency preparedness. According to Tracy Lenocker, Mountain Division Chief, Office of Emergency Services, San Bernardino County Fire Department, “In our field tests, QSI's portable zinc-air power system far exceeded our performance expectations. For mission critical applications using amateur and commercial radios we need to have at least 72 hours of battery run-time. Recent testing during actual events and simulated duty cycle tests showed that the MetAir™ Ranger battery life exceeded the 72-hour requirement by 50% or 36 hours, that's 108 hours or four and a half days of constant, hassle-free portable energy. With a long shelf life that guarantees readiness in emergency situations, this reliable back-up power source helps alleviate worries associated with the need for constant re-charging of traditional secondary batteries.”

Kevin Maloney, CEO and president of QSI, explains, “Relying on combustible fuels, or solar- or wind-generated power in an “off-the-grid” emergency power outage or a tactical environment can be dangerous, unpredictable, and inefficient. Fuel may not be available for diesel generators or the sun may not be available for solar panels to recharge a bank of lead acid batteries when you need it most. We know the MetAir™ Ranger portable power system's long shelf life, low cost per kilowatt hour, high power-to-weight ratio, and ease of use will address some real challenges in the \$50 billion dollar portable power market. These impressive test results validate the MetAir™ Ranger's value proposition and reliability.”

The MetAir™ Ranger, a 3.2 kilowatt hour battery system weighing less than 25 pounds, yields energy densities of 352 Wh / Kg and costs per kilowatt hour of less than \$200. The MetAir™ portable power systems utilize QSI's proprietary cathode technology that results in industry

leading performance. While one MetAir™ Ranger system is about the size of a single deep cycle lead acid battery, it is roughly half the weight and has 11 times the equivalent energy per kilogram. It is also designed to easily accept replaceable power cartridges once the initial system is “air” activated and used. The MetAir™ Ranger Series is essentially a “plug and play” box of portable energy and requires no external energy sources to stay charged. The MetAir™ Ranger has an optional 150 watt 110 volt AC inverter with two outlets and a USB charging port. The MetAir™ Ranger contains no hazardous materials or combustible fuels and, unlike large format Lithium batteries, is approved for transport by the Department of Transportation as non-hazardous material.

In comparison to the commonly available battery types used today, such as Lithium-ion, Nickel metal hydride and Lead acid, QSI's technology is based on a safe and proven zinc-air battery chemistry that is cost effective to manufacture and easy to use. Zinc-air batteries are electro-chemical batteries powered by oxidizing zinc metal powder (a non-combustible, non-toxic and abundant domestic material) with oxygen from the air to generate an electrical current. In addition, Zinc-air batteries have very high energy densities and an unprecedented shelf life of up to 10 years before initial use. Sizes range from very small button cells for hearing aids, mid-size for remote portable power applications, to very large systems used for electric vehicle propulsion.

The need for reliable, off-grid, back-up power solutions is clear and growing. According to [FEMA](#), major disaster declarations in the U.S. have grown 400% since 1950. In 2011, [statistics](#) show that there were 3,071 reported power outages across the U.S., affecting 41.8 million people. The chief causes of these outages were commercial system overloads and natural disasters. In a recent [report](#) on U.S. electricity infrastructure, ASCE President Andrew W. Herrmann warns that power interruptions could cost companies thousands of dollars per day.

### *About QuantumSphere*

QSI is an industry leader in the design, development, and manufacture of high performance, low cost zinc-air battery systems targeted at the \$50 billion portable power market. Founded in 2002 and based in Santa Ana, California, QSI's ISO 9001:2008 certified production processes deliver a line of non-toxic, safe, lightweight MetAir™ power generation products with the highest energy density of any commercially available primary battery, and at the lowest cost per kilowatt hour (by weight and volume). The MetAir™ portable power systems are designed for off-the-grid power needs including emergency preparedness & response, outdoor sports & recreation, and back-up power for consumer electronics, as well as military, and electric vehicle applications. For partner or distribution opportunities, additional product information, or to place an order, please visit [www.qsinano.com](http://www.qsinano.com) or call 714-545-6266 x104.



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