



## **PolarPower.Org – Sharing knowledge about power systems for Polar Regions**

**R. Stehle** (1), T. Dahl (2)

(1) SRI International, 333 Ravenswood Avenue, Menlo Park, CA 94025 USA  
(roy.stehle@sri.com / Phone: +1-650-859-2552), (2) Polar Field Services, 8110 Shaffer  
Parkway, Suite 150, Littleton, CO 80127 USA (polarsolar@hughes.net)

While scientists may be experts in their given fields or research, they may lack the practical knowledge of how to power and deploy research experiments in remote and extreme environments. Researchers have had to either become experts in remote power systems technology or seek outside expertise that is often difficult to locate. The problems of designing systems that will function well in polar environments also complicate the task. Functional, and sometimes creative, approaches have usually fulfilled the power systems' requirements. Unfortunately, just as often, it has resulted in failed power systems and the consequent loss of scientific data that might never be recovered or reproduced.

The US National Science Foundation (NSF) sponsors scientific research throughout the arctic and Antarctic through the Office of Polar Programs (OPP). The NSF's Arctic Sciences Division has taken action to remedy this problem through the sponsorship of a Website (<http://PolarPower.Org>) that allows the polar research community to establish a foundation of knowledge, share experiences, and stay current on technological developments. The development of this Website was the direct result of recommendations from the 1999 Autonomous Systems in Extreme Environments workshop, hosted at the Jet Propulsion Laboratory (JPL), and the 2004 Renewable Energy Working Group meeting/workshop, hosted at the National Renewable Energy Laboratory (NREL). Under the Arctic Research Support and Logistic Services (ARSLS) contract, the VECO Polar Resources partnership develops and solicits content and maintains the Website.

PolarPower.Org offers descriptive write-ups and white papers in the technology areas

of solar and wind power, engine generators, fuel cells, hydroelectric, and energy storage systems. An “examples” section contains numerous descriptions of power systems successfully deployed in Polar Regions and includes small systems developed for and by researchers, as well as larger infrastructure type systems. Supporting technology, such as computers, communications options, enclosures, heating systems, and towers and anchor systems is also covered. Contributions are solicited and welcomed from researchers. A dynamic “Wiki” section exists, where contributors can share their deployment experiences, alert others of new technology, or get questions answered by their peers or outside experts. Listings of governmental and non-profit groups, along with manufacturers, are included in the section of “links” to facilitate searches for information. Finally, there is an “events” page to help keep the scientific research community aware of upcoming events of. Also, bulletins are sent, periodically via e-mail, to subscribers interested in new developments on the site.