



Cold Climate Housing Research Center

**CCHRC**

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## **For Immediate Release**

### **New solar power testing to begin on Winter Solstice**

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**December 20, 2007 - Fairbanks, Alaska** – The Cold Climate Housing Research Center (CCHRC) will turn on the solar photovoltaic portion of its Hybrid Micro Energy Project (HMEP) on the winter solstice. CCHRC will officially start collecting data on the solar arrays to see the amount of electricity they produce depending on the light available seasonally. CCHRC will be holding a press conference to discuss the commissioning of the new system on Thursday, **December 20<sup>th</sup> at 11:00 AM** at the CCHRC Research and Testing Facility.

“By the summer solstice in June we should have a very good idea of the potential energy that can be generated at this Northern latitude from the sun. All Alaskans understand what the light returning does for our spirits. We would like to add lower energy costs, as well, to the benefits of lengthening days,” said Jack Hébert, President/CEO of CCHRC.

HMEP will provide new alternatives for sustainable and economically sensible energy to homes and villages. The hybrid system addresses the high-latitude challenge of minimal solar energy during the winter when energy demand is greatest and bountiful solar energy in the summer when demand is minimal. HMEP uses multiple sources of renewable energy to provide year round heat and electricity on a small scale to villages and homes. HMEP combines solar photovoltaic, biomass, solar thermal hot water collectors, and wind power.

“The use of combined heat and power systems will help our state reduce its dependence on oil. Local, renewable energy is the future and will reduce reliance on others for our energy needs. Renewable energy *is* homeland security,” said Borough Assembly member Mike Musick.

“The Hybrid Micro-Energy Project will allow us to test new, alternative energy systems for different applications. For the solar photovoltaic systems these include residential units that are tied to the grid as well as stand-alone and rural systems,” said Dr. John Davies, CCHRC Director of Research.

The solar photovoltaic system includes 4 solar photovoltaic tracking arrays which can produce up to 10 kilowatts in an hour, which CCHRC estimates could power a typical Fairbanks household on its own. Each panel is capable of rotating 135 degrees in either direction to track the sun throughout the day. CCHRC will also be aiming at the snow during winter months to find out how much energy can be obtained from sources other than direct sun light.

“We will be testing many different factors, such as the effectiveness of tracking versus fixed systems and different types of solar panels. We’ll monitor how much the reflectance off of snow contributes to the energy produced by the arrays. We will also look at the economics of these systems in a variety of applications,” said Dr. Davies.

“Two cameras and over 80 sensors are measuring the outside environment, incoming solar radiation, solar-tracker operations, and other parameters related to solar power performance and operations in Arctic conditions. This information will help demonstrate, educate, and improve how solar power systems can work in arctic environments,” said Michael Lilly, owner and manager of GW Scientific.

“The performance data provided by most photovoltaic (PV) module companies comes from laboratory tests done under Standard Test Conditions (STC). These “STC numbers” are kind of like EPA mileage estimates – and about as useful. CCHRC on the other hand, will be testing the modules under Alaskan “real world” conditions.” Greg Egan, Remote Power Inc.

“Power from the sun will obviously not be a big producer in midwinter, but by March we anticipate solar energy can meet most of our office’s (and a home’s) electrical and heating needs here in the Tanana Valley. Our goal at the Research and Testing Facility in Fairbanks is to demonstrate what is possible in affordable, renewable systems,” said Jack Hébert.

With efforts from EEInternet data from the solar arrays will be available soon through the internet on CCHRC’s web site to enable people to view the information as it is being gathered. GW scientific and Siemens Technologies have installed the sensors and controls used for data collection.

CCHRC is an industry based, non-profit corporation created to facilitate the development, use, and testing of energy efficient, durable, healthy, and cost effective building technologies for Alaska and the world’s cold climate regions. CCHRC would like to thank its list of HMEP sponsors and collaborators which includes BP, the Fairbanks North Star Borough, AHFC, the State of Alaska, Siemens, GW Scientific, Remote Power Incorporated, University of Alaska Fairbanks, EEInternet, the Cooperative Extension Service, and Golden Valley Electric Association.

More information about the HMEP and other activities at CCHRC can be found at [www.cchrc.org](http://www.cchrc.org) or by calling (907) 457-3454. The CCHRC offers regularly scheduled tours of the Research and Test Facility at 2 p.m. every Thursday. The CCHRC Research and Test Facility is located at 1000 Fairbanks St., Fairbanks Alaska.

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