SCSU picked as test site to monitor solar energy

Technology could convert power into electrical energy

By John Molene
TIMES STAFF WRITER

St. Cloud State University is one of four new solar monitoring sites selected by the Minnesota Department of Public Service for a special project.

The project may lead to future wide-scale use of photovoltaic technology to produce electricity in Minnesota. It also will provide data for the school's solar energy curriculum.

Photovoltaics converts solar radiation from sunlight directly into electrical energy. The technology has been used successfully in Minnesota in small-scale applications since the mid 1980s, but has been limited largely by its high cost.

However, according to DPS officials, the cost has been declining.

"As PV technology becomes more economically competitive with other energy sources, we expect to see a big increase in PV installations, and we need to be prepared," said DPS Commissioner Kris Sanda. "If this monitoring project is as successful as we expect it to be, we will eventually be able to provide an accurate, detailed picture of Minnesota's solar energy resources."

The Solar Resource Monitoring and Assessment Project will result in a model that can be used to assess the solar potential at specific locations in Minnesota. It also can provide maps showing statewide solar resources.

Using the model will reduce the need for costly and time-consuming monitoring at each potential project site. The model also will be useful in estimating the output and economics of PV facilities in various locations.

The solar model was installed at the Mathematics and Sciences Center at St. Cloud State and has been up and running for about two weeks. During the next two years, DPS will collect data from four widely dispersed ground-based monitoring sites. The other three sites are: Eveleth-Gilbert Senior High School in Eveleth, Lincoln Senior High School in Thief River Falls and Worthington Junior High School in Worthington.

A pea-sized sensor on top of the school buildings measures the solar radiation and digital data loggers, powered by solar panels, automatically will record the data. After collecting the new data, DPS will analyze it using historical ground-based measurements and then correlate it with current data from satellite-based monitors.

The data is collected in an enclosure attached to the sensor and then downloaded via modem by DPS researchers.

The project is funded by the U.S. Department of Energy through State Energy Program grants. Initial results are expected by the fall of 1999, after one year of data has been collected by all monitoring stations.