

PowerGrant Profiles



UMD:

Energy Efficiency Down to a Science

Education and innovation go hand in hand at the University of Minnesota Duluth (UMD). The new Swenson Science Building, scheduled to open in 2005, is a lesson in energy efficiency and sustainability. The sleek, modern facility is being constructed to rigorous standards that will conserve energy and save millions of dollars in utility costs over its expected 50-75 year lifespan.

John Rashid, AIA, manager of design and construction at UMD, says the University of Minnesota demands that energy efficiency be designed into all campus building and renovation projects.

"The University is very interested in conservation, and, over time, we have found what works," Rashid said. "Every building contract must follow specific performance guidelines in terms of motors, drives and materials to save energy and reduce operating costs."

The 110,000-square-foot Swenson Science Building has conservation down to a science with high performance lighting and controls, variable frequency drives on fan and pump motors and an HVAC system that utilizes variable air volume boxes and heat recovery coils. An innovative energy management system will tie the building into a centralized control center, enabling facility managers to input class schedules and occupancy patterns so heating, air conditioning, ventilation and lighting can be programmed for optimal efficiency.

Minnesota Power energy consultants from Matt Haley & Associates Inc. estimate that technologies incorporated into UMD's new science building will save the University 2,616,795 kWh per year and 133.1 kW of demand per month. That translates to an annual cost savings of \$84,146. The upfront investment in these high performance systems will pay for itself in five years.

Returns already are being realized. Minnesota Power presented UMD with a PowerGrant rebate of \$102,000



Energy saving technologies in UMD's new Swenson Science Building qualified for a \$102,000 PowerGrant rebate from Minnesota Power.

for qualifying systems that have been integrated into the facility. Rashid says UMD has received approximately \$250,000 from Minnesota Power over the past few years for conservation measures in various building projects. Recent construction has included a new library, music hall, residence hall addition, and renovation of the Kirby Student Center.

"With all of the campus construction, it is hard to stay ahead of the curve, so we take our energy rebates and put them into a separate account to plan infrastructure

PowerGrant Contact Information

For more information, please call Minnesota Power's Conservation Improvement Program toll-free at 800-228-4966 ext. 2902.

"Energizing Our Region" through Conservation Improvement

Minnesota Power's Conservation Improvement Program (CIP) works with local leaders, businesses, community groups, other energy providers and government entities to help customers reap the economic and environmental benefits of sustainable energy savings. Minnesota Power and its partners accomplish this through research, education, evaluation and direct impact initiatives.

Find out how you could get a PowerGrant

Minnesota Power awards grants to commercial/industrial customers who use innovative technologies, improve manufacturing processes, undertake renewable electric energy projects, or who need project design assistance. PowerGrant awards are available for a wide variety of projects employing diverse technologies.

Here are some examples of activities or products that could qualify for MP funding under the PowerGrant Program:

- New electro-technologies that lower energy costs per unit of production in a manufacturing process
- Innovative technologies that are new and underutilized in our regional marketplace
- Inclusion of energy-efficient options in the design phase of a project

Maximum annual grants are determined by a customer's average billing demand:

<i>Customer Demand</i>	<i>Maximum Rebate</i>
0 to 100 kW	\$10,000
101 to 300 kW	\$25,000
Over 300 kW	\$50,000

Customers may submit multiple grant requests.

Other MP Products and Services

In addition to PowerGrants, MP CIP offers commercial and industrial customers other energy efficiency products and services. These include energy audits, rebates, dual fuel, storage/off-peak services, outdoor and area lighting and economic development assistance.



MP energy consultant Gary Olson of Matt Haley & Associates identifies energy-saving technologies and estimates their cost-saving potential for clients. Also shown in bottom photo is foreman Donald Wick, Jamar Co.

UMD reinvests energy rebates into building upgrades.

upgrades," Rashid said. For example, UMD is in the process of changing out all of the light bulbs on campus to more energy efficient models.

"All of the designs and plans for UMD projects that we have seen have been very well designed with good conservation included," said Gary Olson, project manager for Matt Haley & Associates. "It is unusual for an organization this size to be so conscientious about energy savings on the front end."

The University of Minnesota is a leader in conservation. Its Center for Sustainable Building Research in the Twin Cities led development of the new State of Minnesota Sustainable Building Guidelines, a tool that emphasizes design principles that minimize resource impact before,

during and after construction. Beginning in 2004, the guidelines are mandatory for all buildings funded by the State's bond proceeds.

A number of major construction projects lie ahead as UMD continues to enjoy record enrollment. They include a new School of Business and Economics and an addition to the Rec Sports facility. Minnesota Power expects to continue working with UMD to identify energy-saving opportunities that save dollars, improve operating efficiency and enhance the educational environment. We call this energizing our region.

"Minnesota Power is good at helping us identify and evaluate projects that will qualify for rebates," Rashid said. "We have a strong working relationship."