

Energy partnerships thrive under the sun and on the waterfront

From a downtown rooftop to the shore of Lake Superior, Minnesota Power is helping customers find ways to use energy more efficiently and maximize renewable investments. Projects are underway at St. Louis County's Government Services Building and at the Great Lakes Aquarium in Duluth.

A place in the sun

Photovoltaic panels on the roof of the Government Services Building in downtown Duluth are the product of a unique energy research partnership involving Minnesota Power, St. Louis County and the University of Minnesota-Duluth's Natural Resources Research Institute.

Working with Minnesota Power and NRRI, the county purchased and installed three kinds of PV panels on the roof of the 33-year-old building. The panels will generate power for the building while being part of a research study on solar panel technology.

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Photo of sunrise on Lake Superior by Dennis O'Hara.

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Curtain rises on theater programs focused on electricity

Minnesota Power is committed to educating young people about the safe and responsible use of our main product—electricity.

That's why we're again working with the National Theatre for Children to deliver a live, theatrical production focusing on electrical safety and designed for students in kindergarten through sixth grade.

The program will reach thousands of students from 26 schools across our service territory from International Falls, Virginia and Duluth to Browerville, Staples and Brainerd.

MP helps farmers find stray voltage

Minnesota Power works with farmers to help detect and reduce stray voltage in confined animal operations.

This low-level voltage can be found on metal objects that farm animals touch, such as water pipes and stanchions.

The voltage level is usually so slight that humans cannot feel it, but animals may. It can be caused by many factors, including faulty wiring or improper grounding.

For more information or to schedule a free stray voltage review, contact Kevin McLean at 320-635-5078, ext. 5078, or 1-800-228-4966, ext. 5031.

Partnerships thrive at government building, aquarium

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NRRI, as a neutral agency, will monitor energy output and report data regarding the three systems' operations, measuring and calculating how well each type of system performs. Two of the three systems are Minnesota made and the third is a commodity panel currently prevalent in the marketplace. Together they can generate about 30,000 watts of electricity.

The three PV systems together cost \$170,000. Minnesota Power, through a combination of conservation program research dollars, design assistance and SolarSense rebates, contributed nearly \$116,000.

Minnesota Power will be able to use the insights gained from the three-year research study as part of its ongoing effort to provide educational resources for customers about solar energy installations and energy efficiency.

The research will help to supply direct, objective experience using PV solar in regional residential and community settings, while providing valuable supplemental information to existing solar studies from



LED lights on the water wall in the lobby of the Great Lakes Aquarium demonstrate energy savings and versatility.

around the nation by using region-specific results.

At the aquarium

The Great Lakes Aquarium on Duluth's waterfront recently kicked off construction on the Discovery Center, a project that will transform an underused section on the second floor of the GLA into a multiuse classroom and meeting space. The space will be used to educate students and guests about the health and vitality of the Great Lakes. In total, the Minnesota Power Foundation has committed \$125,000 in grants to the project.

But the partnership with the GLA goes deeper than the Discovery Center. Minnesota Power's Power of One®

conservation program has formed an energy team with the aquarium in an ongoing effort to help find ways to reduce energy use. Aquarium officials hope to reduce electricity use in the 64,000-square-foot building by 30 percent by 2016.

With funding and design support from Minnesota Power, the aquarium installed an LED lighting system on the water wall in the aquarium's lobby that resulted in dramatic energy savings. The aquarium also is installing energy-efficient, variable speed drives on pumps that move water through its tanks and filtration systems and will integrate energy-efficient lighting into the Discovery Center.

Watch the falcons



This peregrine falcon chick is one of more than 60 chicks banded at our facilities since 1993 as part of Minnesota Power's partnership with the Raptor Resource Project in Decorah, Iowa.

*In a typical year, peregrines return to nesting boxes at Hibbard Renewable Energy Center in Duluth and Boswell Energy Center near Cohasset in March, eggs are laid in mid-April and the chicks hatch in late May. You can follow along with our **FalconCam at mnpower.com**.*



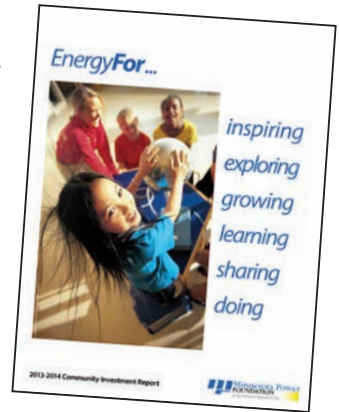
mnpower.com/safety

Report showcases MP's role in the community

The employees of ALLETE have a culture of sharing skills, knowledge and experience to benefit customers and communities. The investments they make in the region are personal and profound, going far beyond financial contributions.

We hope you'll take time to read our 2013-2014 Community Investment Report at

mnpower.com/community to learn more about how our employees and the Minnesota Power Foundation work to advance the region's comfort, security and quality of life.



The right tree in the right place

The Right Tree brochure provides tips for selecting and siting trees to ensure the safety and reliability of electric service. Read the brochure online at **mnpower.com/treebook** or call 800-228-4966 to receive a free copy.

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