



Did you know...

- ...a 10-percent reduction in energy costs for a supermarket can increase gross profit by as much as eight percent?
- ...refrigeration equipment can account for more than 60 percent of the energy budget in a typical supermarket.?

Contact Us

Interested in participating in Business Partners Energy Services? If you are a non-residential NorthWestern Energy electric customer, we may be able to help you reduce your energy costs.

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MONTANA GROCERY STORE SHINES



After purchasing Van's IGA in Great Falls, its new owners set out to retrofit the store's ceiling lighting fixtures.

The owners were looking for a more energy-efficient solution that would also provide higher-quality lighting and improved atmosphere.

Existing lighting was comprised of standard-efficiency T12 fluorescent lamps and ballasts. The four-foot T12

lamps were a mix of 34- and 40-watt lamps. The eight-foot T-12 lamps were a mix of 60- and 75-watt lamps.

Although the ball-driving the old lamps were "energy-saving" magnetic ballasts, they required 20 to 24 watts of power.

By participating in NorthWestern Energy's Commercial Lighting Rebate program, the store was eligible for a cash rebate to help pay the cost of upgrading to T8 lamps, which draw 32 watts for the four-foot lamp, and 56 watts for the eight-foot lamp. The new electronic ballasts draw only 4 watts.

The retrofit included installation of 71 two-lamp fixtures; 27 four-lamp fixtures;

and 290 two-lamp, eight-foot fixtures.

As a result of the project, Van's IGA will save nearly \$10,000 in energy costs each year. But energy savings aren't all the project offers. The new lighting provides a more pleasant and comfortable interior for shoppers and employees. And because the new lighting is more energy-efficient, it also creates less pollution, which helps protect the environment.

Van's IGA Electric Savings

Total annual kWh savings	137,437 kWh
Monthly peak demand savings	19 kW
Estimated cost savings	\$9,932

NCAT AND NWE RENEW CONTRACT

NorthWestern Energy has renewed its agreement with the National Center for Appropriate Technology (NCAT) to continue as an E+ Business Partners Contractor.

The new agreement will allow NCAT to continue providing technical assistance to help customers reduce electric consumption in their facilities.

Eligible projects can receive cash incentives from NorthWestern Energy.

Projects may include measures to improve lighting systems, heating/cooling systems, or hot water systems, as well as improvements to insulation levels. Technologies may include variable-speed drives, improved system controls, or equipment replacement.

The program is open to business, institutional, multi-family residential, agricultural, and industrial electric customers of NorthWestern Energy.

"Rising energy costs are increasingly impacting operat-

ing budgets in Montana businesses. BPES provides a wonderful opportunity for those businesses to take back some control of their energy costs," said Dale Horton, manager of NCAT's energy program.

NCAT is a 30-year-old non-profit with offices in six states, including its headquarters in Butte, Montana. NCAT staff have extensive experience in energy efficiency and renewable energy projects, and have been working on the BPES program since 2005.

PROJECT PROFILE: SUN MOUNTAIN LUMBER

Sun Mountain Lumber in Deer Lodge is enjoying new energy-efficient lighting, thanks to participation in the E+ Business Partners Program.

The mill was a good candidate for a lighting upgrade. Most interior lighting was provided by 400-watt metal halide



fixtures and fixtures containing standard T12 fluorescent lamps and magnetic ballasts. Metal halide lamps were left on continuously and fluorescent fixtures were turned off only sporadically.

Exterior lighting was provided by metal halide, halogen and mercury vapor lamps. Due to absent or non-functional photocells, about 30 percent of the exterior fixtures were on during daylight hours. Under the Business Partners program, about three hundred 400-watt metal halide fixtures were replaced with T5 HO fixtures containing four or

six lamps and two electronic ballasts. Nearly 300 four- and eight-foot T12 fluorescent fixtures were replaced with fluorescent fixtures containing two or four T8 fluorescent lamps and, in the majority of fixtures, one electronic ballast. Incandescent exit lighting was replaced with LED fixtures.

Occupancy sensors were installed on fixtures in several locations, including lunchrooms, offices, conference rooms, rest rooms, parts rooms, some areas of the finger jointer building and sawmill building, and storage areas. Time clocks were installed on a portion

Sun Mountain Lumber Electric Savings

Total annual kWh savings	756,927 kWh
Monthly peak demand savings	75 kW

of the T5 fixtures in the finger jointer building. Photocells were installed on all remaining outdoor lights.

In addition to energy cost savings, the mill will benefit from significantly better lighting quality, leading to increased safety and improved quality control of products. The mill will also see lower lighting maintenance costs.

T5: NEW GENERATION OF FLUORESCENT LIGHTING

T5 lamps are a new generation of fluorescent tube lighting that offer a number of benefits.

Measuring 5/8 inches in diameter, these slim tubes have higher light output, making fewer lamps necessary. High output (HO) T5s provide about twice the light of a T8 (fluorescent tubes measuring one inch in diameter).

T5s can last up 20,000 hours. And, having less glass, phosphor, and gases than their older counterparts, T5s are less

damaging to the environment.

T5s are often a good choice in industrial and commercial settings, particularly as an upgrade for metal halide or other high-intensity discharge (HID) lamps, such as high-pressure sodium and mercury vapor. Their higher light output makes T5HOs a good choice for high-ceiling applications and indirect/direct light fixtures.

Depending on their application, T5s can be a more energy-efficient alternative to other types of lighting, such as metal

halide, for the same or similar amount of light output.

Finally, T5s offer better color rendition and maintain light output better over time.

Lighting designers are increasingly specifying T5s in new construction and renovation. However, while suitable for many applications, keep in mind that T5s are shorter than T8s and, therefore, cannot be used as replacements. T5 ballasts and fixtures must be used in conjunction with the lamps.

Comparison of Fluorescent Lamps			
Lamp Type	T-12	T-8	T-5*
Watts	40	32	54
Initial Lumens	3,200	2,850	5,000
Efficacy (lm/W)	80	89	93
Lumen depreciation**	10%	5%	5%

*High-output T-5 in metric length
 **Percent change from 'initial lumens' to 'design lumens.'
 Source: Philips Lighting

STAFF PROFILE: DAVE HOUSER, P.E.

Dave Houser, NCAT's Energy Services Business Development Director, has been helping industrial and commercial customers participate in the Business Partners Program for many years.

With his extensive background in energy conservation, demand-side management, and energy analysis, Houser focuses his efforts on project development by making sales presentations, communicating with po-

tential customers and trade allies, and conducting walk-through audits of facilities to identify cost-effective electric savings measures.

Once viable projects have been identified, Houser and other professionals at NCAT conduct analyses to determine the cost-effectiveness of potential energy savings investments and work with facility owners to plan the best strategy for getting the measures

installed.

NCAT works directly with NorthWestern Energy to help facility owners qualify for financial incentives for installed measures.

Houser works to recruit NorthWestern Energy electric customers to participate in the Business Partners program. "Energy efficiency may make more sense than almost any other investment a business can make," said Houser.

"Investing in energy efficiency can help protect against future energy price increases, and may also help provide a more comfortable and productive working environment."

"Remember there is no better time than the present to implement cost-effective energy efficiency measures," Houser continued, "because not taking action is already costing you money."