

Energy Conservation 101

**Energy savings
and rebate opportunities
for businesses**

Conservation Program Overview

▶ Requirement

- ▶ Investor owned utilities in MN are required to spend 1.5% of annual electric revenue and 0.5% of annual gas revenue influencing energy efficiency
- ▶ Office of Energy Security approves efficiency program; we administer them

▶ How we and our customers benefit

- ▶ Conservation is less expensive than producing new power
- ▶ Keeps rates low
- ▶ Reduces reliability issues
- ▶ Avoids emissions

Environmental impacts

- ▶ **Reduce emissions**
- ▶ **Pollution prevention**
 - ▶ **Avoid new power plants**
 - ▶ **8 mid-size gas combined cycle (approximately 250 MW each) since 1990**



Tailored to meet your needs

- ▶ **Simple participation**
- ▶ **Paybacks 2-3 years or lower**
- ▶ **Wide range of equipment retrofits and installations**

Types of programs

- ▶ **Studies**
 - ▶ **Compressed Air, Energy Analysis, Recommissioning**
- ▶ **Prescriptive / fixed rebates**
 - ▶ **Commonly used energy-efficient equipment**
 - ▶ **Cooling, heating, lighting, motors and more**
- ▶ **Custom rebates**
 - ▶ **Custom Efficiency, Efficiency Controls, Energy Design Assistance, Recommissioning, Efficiency Proposal, others**
- ▶ **Segment Offering**
 - ▶ **Commercial Real Estate, Process Efficiency**
- ▶ **Rates, discounts and other options**

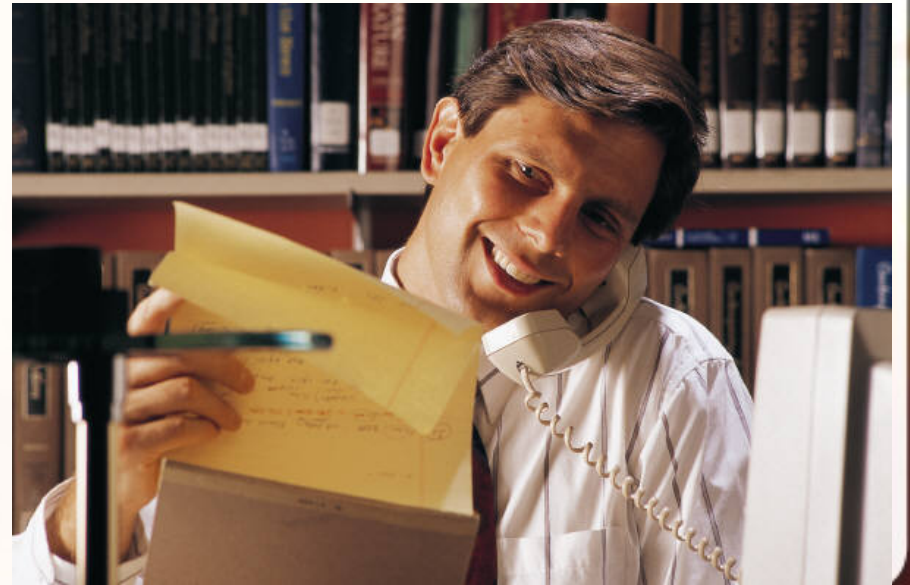
Other programs and services

- ▶ **Energy Services**
- ▶ **Billing/payment options**
- ▶ **WindSourceSM**



Studies

- ▶ **Identify and qualify improvements**
- ▶ **Quantify expected results**



Energy Analysis

- 1. Online energy assessment** - A free starting point to help customers determine how to save on their energy bills
- 2. On-site energy assessment** - an energy engineer to visit the site and the customer will receive a written report
 - ▶ Buildings less than 25,000 square feet = \$200
 - ▶ Buildings 25,000 square feet and above = \$300

Commercial Real Estate Efficiency

- ▶ **Limited-time program**
 - ▶ Jan. 1, 2007 through Dec. 11, 2009
- ▶ **Commercial real estate customers**
 - ▶ **Multi-phase study funding**
 - ▶ **Implementation rebates**
 - ▶ 30% bonus for implementing measures with a less than 3-year payback
 - ▶ **Energy expertise and financial analysis**

Recommissioning

- ▶ **Tune-up existing building systems rather than replacing equipment**
- ▶ **Improve performance**
- ▶ **Save energy**
- ▶ **Measures are low/no cost**



Recommissioning

▶ **Systems**

- ▶ **Central heating/cooling**
- ▶ **Air handling units**
- ▶ **Heat pumps/rooftop units**
- ▶ **Pumping**
- ▶ **Outside air**
- ▶ **Central chilled water loop**

▶ **Controls**

- ▶ **Sequence of operations**
- ▶ **Resets**
- ▶ **Start/stop times**

Recommissioning

▶ Studies

- ▶ Up to 50% study funding, max \$15,000
- ▶ Preapproval is required

▶ Implementation rebates

- ▶ Up to 50% of project cost
- ▶ \$200 per kW or “implied kW”
- ▶ \$2 per MCF (for Xcel Energy gas customers)

**10-15% potential savings
on annual electricity bills**

Refrigeration Recommissioning

- ▶ **Tune up commercial refrigeration systems**
 - ▶ Analyzes compressors, condensers, display cases, operating conditions
 - ▶ Tweaks are made during the investigation
 - ▶ Measures are low/no cost
- ▶ **Available for groceries, convenience stores, grocery warehouses**
- ▶ **Earn a rebate that covers up to 50% of your investigation cost**

Rebates help bring energy-saving projects to life



Cooling Efficiency

- ▶ **Reduce your cooling load**
- ▶ **Upgrade equipment or add new units**



Cooling Efficiency rebates

- ▶ **More-efficient equipment → higher rebates**
- ▶ **Rebate main system components**
- ▶ **Rebates available on a \$/ton basis**
 - ▶ **Efficiency bonus**
- ▶ **Program will change when MN adopts new energy code**
 - ▶ **Sometime in 2009**

Cooling Efficiency rebates

Equipment	Rebate amount
PTAC	\$7.50/ton Plus \$1.25 or \$2.50/ton per .1 EER above base
Rooftop unit (RTU)	\$14/ton Plus \$4/ton per .1 EER above base
Condensing units	\$14/ton Plus \$4/ton per .1 EER above base)
Chillers	\$20/ton Plus \$5/ton per .01 kW/ton below base)

Cooling Efficiency rebates

Equipment	Rebate amount
Oversized cooling towers	\$3/nominal tower ton
VAV	\$200/VAV box
Water-source heat pumps	\$10/ton (plus \$1/ton per 1 EER above base)
Economizers	\$10/ton
Hotel room controllers	\$100/unit



Heating Efficiency Boiler rebates

- ▶ **Upgrade**
- ▶ **Maintain**
- ▶ **Save on utility bills**
- ▶ **Significant changes for 2007**

Heating Efficiency - boilers

► New-equipment rebates

Size (BTU/hr input)	Thermal efficiency requirements		
	Hot water*	Low pressure	High pressure
≤ 300,000	85% AFUE	83% AFUE	81.5% AFUE
> 300,000	83% AFUE	83% AFUE	81.5% AFUE

* ≤ 300,000 BTU/hr hot-water boilers must be ENERGY STAR® compliant

Heating Efficiency - boilers

Equipment	Rebate amount
Burners 5:1 turndown ratio	25% up to \$2,500
Burners 10:1 turndown ratio	25% up to \$5,000
Steam traps	\$250 per trap
Boiler tune-ups	25% up to \$250
O2 trim controls	25% up to \$5,000
Stack dampers	25% up to \$250

Lighting Efficiency

▶ **Retrofit rebates**

- ▶ **Existing facilities of any size**
- ▶ **One-to-one equipment change outs**
- ▶ **Help offset cost of replacing current lighting with more-efficient equipment**



Lighting Efficiency retrofit rebates

EQUIPMENT	REBATE
Fluorescent T8 or Super T8 lamps with electronic ballasts	\$8.00 - \$18.00
Low-wattage 4' fluorescent T8 lamps (28W or less)	\$0.75/lamp
High-efficiency electronic ballasts	\$0.75/ballast
Fluorescent T5 lamps with electronic ballasts	\$10.00 - \$16.00
High-bay fluorescent fixtures, replacing 250W to 1000W HID Systems	\$50.00 - \$125.00
Hardwired and pin-based CFL fixtures	\$8.00 - \$24.00

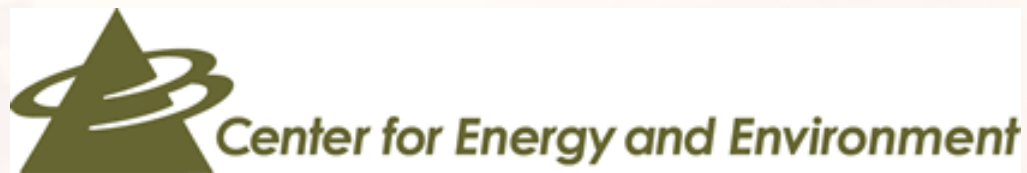


Lighting Efficiency retrofit rebates

EQUIPMENT	REBATE
Metal halide and high pressure sodium (151 W or greater)	\$28.00 - \$45.00
Ceramic metal halide fixtures	\$20.00 - \$60.00
Pulse start metal halide	\$25.00 - \$65.00
Reflectors	\$0.50/sq. ft.
Occupancy sensors and photocells	\$12.00 - \$36.00
LED exit signs	\$6.00
LED traffic signals (red and green)	\$15.00 - \$65.00

Lighting Efficiency One-Stop Efficiency Shop

- ▶ **Special rebate levels and services**
 - ▶ **Small and mid-sized facilities**
 - ▶ **Peak facility demand of 400 kW or less**
 - ▶ **Center for Energy and Environment**
 - ▶ **Call 612-335-3487 to verify eligibility and energy-savings potential**



Lighting Efficiency redesign studies & rebates

▶ **Study**

- ▶ **By Lighting Certified (LC) professional or lighting professional with demonstrable design experience**
- ▶ **Determine proper lighting levels**
- ▶ **For overlit or mislit space**
- ▶ **Funding up to 50% of study cost; max of \$15,000**

▶ **Implementation rebates**

- ▶ **Up to \$400 per kW saved**

Efficiency Controls rebates

- ▶ **Energy Management Systems (EMS) and Automated Building Controls**
 - ▶ **Control Lighting, Heating, Cooling, Ventilation, etc.**
 - ▶ Add new system to building
 - ▶ Add control points to existing system
 - ▶ Microprocessor-based controlling
 - ▶ **Model-based analysis**
 - ▶ **Rebate: up to \$200/kW saved and up to \$400 for lighting measures**
 - ▶ **Easy to participate**
 - ▶ EMS preapproval application
 - ▶ Random verifications





What's your savings potential?

Call 1-800-481-4700

- ▶ **Business Solutions Center**
- ▶ **Determine program eligibility, savings potential**
- ▶ **xcelenergy.com/rebates**
 - ▶ **search for the program name**