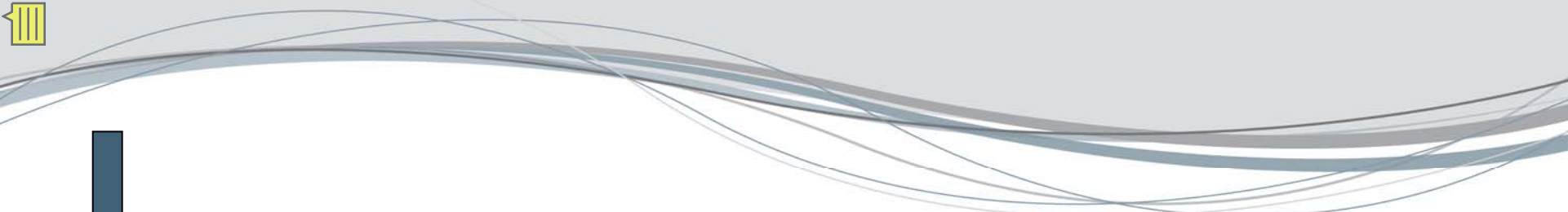




Energy Conservation 101

Energy Savings and Rebate Opportunities for Business
April 6, 2011

Ryan Bruers, Xcel Energy



“As an environmental leader, Xcel Energy considers energy conservation our first line of defense in protecting the environment and addressing issues such as climate change.”

Dick Kelly

Xcel Energy Chairman, President and CEO



Xcel Energy MN Conservation Programs

1990-2008

- **Number of Rebates given: 29,986**
- **Total Rebate Dollars: \$151,000,000**
- **Largest Rebate: \$1,450,000**



Economic Impacts

- **Lower energy bills**
- **Lower operating and maintenance costs**
- **Increased efficiency of operation**
- **Lower energy-efficiency project costs**
 - ◆ **Faster paybacks**
 - ◆ **Lower up-front costs**
 - ◆ **Higher return on investment**
 - ◆ **Increased lifetime savings**



Environmental Impacts

- Reduce emissions
- Pollution prevention
 - ◆ Avoid new power plants
 - More than 3,000 Megawatts of power saved
 - 9 mid-sized power plants

Green Energy

■ Where we are Today...

◆ Top 5 States for Wind Energy Production

■ TX (7,118 MW), IA (2,791 MW), CA (2,517 MW), MN (1,754 MW) and WA (1,447 MW)

◆ Minnesota leads the nation on percentage of energy from Wind (7.48%, IA 7.1%)

◆ Xcel Energy Rated #1 Utility Wind Provider – American Wind Energy Association (AWEA)

http://www.awea.org/newsroom/releases/Annual_Industry_Rankings_2009_041209.html

<http://www.awea.org/publications/reports/AWEA-Annual-Wind-Report-2009.pdf>

Xcel Energy's Renewable Sources

- **WindSource**

- ◆ **Residential and Business Customer Program**

- **Allows the purchase of 100 kWh blocks of Wind Energy (up to 100%)**

- **Other Renewable Sources**

- ◆ **Hydro, Refuse-Derived Fuel, Biomass**

- **As of 2007, 9% of Xcel Energy's Electric Sales come from Renewable sources**

- **Solar Rewards (\$2.25/Watt)**



Highlighted Programs:

- Lighting
- Motors / Variable Frequency Drive's (VFD's)
- Custom



Types of Programs

- **Studies**
- **Prescriptive / fixed rebates**
- **Custom Rebates (\$400/kW or \$5/MCF)**
- **Segment offering**
- **Rates, discounts and other options**



Prescriptive / Fixed Rebates

- **Commonly used energy-efficiency equipment**

Lighting Efficiency

■ Prescriptive Rebates

- ◆ Fixed incentives for installing energy efficient equipment
- ◆ Retrofit rebates for existing facilities of any size
 - One-to-one equipment change outs
- ◆ New construction rebates (new or major renovations)
 - Choose options that are more efficient than the standard
- ◆ ENERGY STAR® Qualified Interior LED's
 - Screw-in, Pin Based, Commercial Down Lights, etc.
- ◆ T12 Bonus Rebate Program
 - 50% Bonus through March 31, 2012

Motor rebates for NEMA Premium® and “Enhanced”* Efficiency Motors

NEMA Premium® Motor	Horsepower	Rebate
New Motor Applications (new equipment or burnout)	1 to 500	\$25 to \$2,250

Or

Replacing operating motor \$200 to \$13,500.

*Enhanced exceed Efficiency Numerically by 1%

Custom motor	Over 500 (per motor)	Individually determined (Custom Efficiency) <i>Preapproval is required</i>
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Motor Efficiency

Variable Frequency Drives (VFDs)

- **Prescriptive VFD's (on Pumps or Fans, Over 3,000 Hours)**
 - ◆ **1 to 200 HP (\$400 to \$8,000)**
- **Custom VFD's (non Pump or Fan application, Less than 3,000 Hours, or Greater than 200 HP)**
 - ◆ **Individually Determined (\$400/KW saved)**

One-Stop Efficiency Shop

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



Center for Energy and Environment

Lighting Redesign Studies & Rebates

■ Study

- ◆ By Lighting Certified (LC) professional
- ◆ Determine proper lighting levels
- ◆ For overlit or mislit space
- ◆ Funding up to 75% of study cost; max of \$25,000

■ Implementation rebates

- ◆ Up to \$400 per kW saved



Custom Rebates

- Custom Efficiency
- Efficiency Controls
- Energy Design Assistance
- Recommissioning
- Efficiency Proposal

Custom Efficiency Program

Rebates for energy-saving projects not covered by our prescriptive equipment programs

- ◆ **Rebates are up to \$400 per kW saved and \$5 per MCF saved**
- ◆ **Pre-approval is required prior to equipment purchase**



Custom Efficiency - Examples

- Refrigeration Equipment
- Non-ENERGY STAR® rated LED Retrofit, LED Display signs
- Ventilation Controls
- Free Cooling

Case Study 1

Lighting Efficiency – Caterpillar Paving Products

Background:

- ◆ 375,000 square foot Facility
- ◆ 2-10 Hour shifts for Production
- ◆ Upgraded lighting 6 years previous
- ◆ Costly and Time consuming
- ◆ Choose a 6 Lamp T8 Fixture in 275,000 Square Feet



Case Study 1

- **Electrical Cost Savings: 45%**
- **Energy Savings: 45%**
- **8% Savings in Maintenance Costs**
- **Rebate paid about 19% of Project Cost**
- **Simple Payback (after Rebate): 1.46 Years**

Closing Thoughts...

- Understand your Energy Bill
- Many No Cost/Low Cost Opportunities
 - ◆ Saver Switch
 - ◆ Programmable Thermostats
 - ◆ Maintenance (Check Door Seals, Shorten Defrost Cycles, Change Filters)
 - ◆ CFL's – Energy Star Rated –
www.responsiblebynature.com - \$1.00
- Start an Energy Team / Energy Day
 - ◆ Help Promote Energy Efficiency at Home



More information

- xcelenergy.com/rebates

- **Business Solutions Center**

 - ◆ 1-800-481-4700

 - ◆ EnergyEfficiency@xcelenergy.com

- **Account Manager or**

 - Ryan.L.Bruers@XcelEnergy.com

 - (612) 630-4212**



FINANCIAL SUMMARY

Lighting Efficiency Project: Caterpillar Paving

Electricity cost savings:* \$79,716 (45 percent) annually

Energy Savings:* 1.5 gWh (45 percent) annually

Demand Savings:* 171.3 kW

Maintenance savings:* \$14,000 annually

Project cost: \$170,722

Xcel Energy rebate: \$34,260

Payback term with rebate: 1.46 years

** estimated values*