

Minnesota & Colorado Motor Efficiency Programs

Presented by:

Bruce Peterson – Product Portfolio Mgr.
Brian Hammarsten – MN Trade Relations Mgr.
Bill Gruen – CO Trade Relations Mgr.

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Agenda

- Demand Side Management
- MN Conservation Improvement Program (CIP)
- MN Motor Program
- CO DSM Conservation
- CO Motor Program
- CO & MN Motor Program Similarities
- Program Results
- Questions

About us

- Combination electricity and natural gas energy company
 - 3.3 million electricity customers
 - 1.8 million natural gas customers.
- Regulated operations in 8 Western and Midwestern states
 - Revenue of \$10 billion annually
 - Operate power plants that generate over 15,200 megawatts of electric power
 - 33,000 miles of natural gas pipelines

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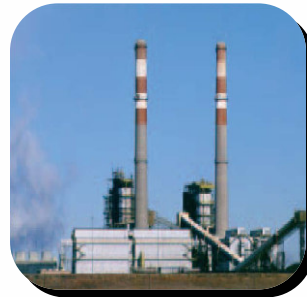
Demand Side Management (DSM)

- Utility programs that encourage customers to conserve energy or shift the time of day they use energy

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Utility interest in DSM

- Reduction of emissions
 - DSM accounted for a 53% CO₂ reduction in emissions in 2004
- Pollution prevention
 - Avoiding new power plants
 - 7 mid-size gas combined cycle (approximately 250 MW each) plants have not been built in Minnesota due to DSM



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Xcel Energy's MN CIP programs

- MN Dept. of Commerce (DOC) required spending to encourage energy efficiency
 - 2% of electric revenue
 - 0.5% of gas revenue
- Xcel Energy is responsible for administering energy efficiency programs upon approval from MN DOC
- Xcel Energy must justify spending with documented energy savings

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Tailored to meet customer needs

- Aim to keep participation simple and easy for customers
- Keep paybacks between 2-3 years; perhaps even lower
- Focus on most applicable equipment retrofits and installations

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MN electricity conservation programs

- Cooling Efficiency
- Compressed Air Efficiency
- Custom Efficiency
- Electric Reduction Savings
- Energy Analysis
- Energy Design Assistance
- Lighting Efficiency
- Motor Efficiency
- Recommissioning
- Refrigeration Efficiency
- Roofing Efficiency
- Saver's Switch®

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MN Motor Efficiency program

- New motor applications (due to new equipment installation or burnout)
- or
- Replace existing, operating motors with NEMA Premium® efficiency motors before burnout



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MN Motor Efficiency NEMA Premium® efficiency motors

Description	Horsepower	Rebate
New motor - due to new equipment installation or burnout	1 hp – 200 hp	\$5/hp
Replacing operating motor	1 hp – 200 hp	\$16.50/hp
Custom motor	Over 200 hp	Individually determined under the Custom Efficiency program



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CO Demand Side Management (DSM) programs

- 2003 Least Cost Plan component
- Environmental benefits
- Help customers manage electricity bills

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New conservation goals in Colorado

- 320 MW
- 800 GWh
- 2006 – 2013
- All Xcel Energy Colorado business electricity customers are eligible



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CO Electricity Conservation Programs

Current Programs

- Cooling Efficiency
- Custom Efficiency
- Energy Design Assistance
- Lighting Efficiency
- Motor Efficiency
- Recommissioning
- Compressed Air Efficiency

Future Programs

- Energy Management Systems (EMS)



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CO Motor Efficiency

- Purchase new motor
 - When replacing existing, working motor
 - Due to motor burnout
 - Installing new equipment
- Two years from date of purchase to install motor, apply for rebate
 - Allows customer to plan ahead in anticipation of motor failures



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CO Motor Efficiency: NEMA Premium® efficiency motors

Description	Horsepower	Rebate
New motor - due to new equipment installation or burnout	1 hp – 200 hp	Fixed - Varies by HP
Custom motor	Over 200 hp	Individually determined under the Custom Efficiency program



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CO Motor Rebate Levels

Motor HP	Incremental Cost	Rebate Amount	Net Cost	Energy Savings	Simple Payback (yrs)
1	\$ 46	\$ 10	\$ 36	\$ 7	5.1
1.5	\$ 51	\$ 15	\$ 36	\$ 10	3.7
2	\$ 52	\$ 20	\$ 32	\$ 12	2.7
3	\$ 63	\$ 25	\$ 38	\$ 15	2.6
5	\$ 66	\$ 35	\$ 31	\$ 23	1.3
7.5	\$ 104	\$ 50	\$ 54	\$ 42	1.3
10	\$ 128	\$ 65	\$ 63	\$ 49	1.3
15	\$ 143	\$ 75	\$ 68	\$ 67	1.0
20	\$ 181	\$ 100	\$ 81	\$ 88	.9

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CO Motor Rebate Levels

Motor HP	Incremental Cost	Rebate Amount	Net Cost	Energy Savings	Simple Payback (yrs)
25	\$ 194	\$ 125	\$ 69	\$ 98	0.7
30	\$ 216	\$ 150	\$ 66	\$ 112	0.6
40	\$ 317	\$ 200	\$ 117	\$ 131	0.9
50	\$ 351	\$ 250	\$ 101	\$ 158	0.6
60	\$ 466	\$ 300	\$ 166	\$ 173	1.0
75	\$ 514	\$ 350	\$ 164	\$ 207	0.8
100	\$ 690	\$ 450	\$ 240	\$ 268	0.9
125	\$ 659	\$ 500	\$ 159	\$ 327	0.5
150	\$ 588	\$ 550	\$ 38	\$ 371	0.1
200	\$ 812	\$ 600	\$ 212	\$ 483	0.4

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MN & CO Motor Efficiency

Program Similarities

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MN & CO Motor Efficiency

- Programs target
 - Large commercial and industrial customers
 - Small business customers
- Primary sales channels
 - Xcel Energy account managers
 - Motor trade: vendors & manufacturers
 - Xcel Energy call center agents (BSC)

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MN & CO Motor Efficiency

- Motors or VFDs 1-200 HP
 - Purchase qualifying equipment and submit a completed prescriptive rebate application
- Motors or VFDs 200 HP or greater
 - Prior to purchasing, submit an application to our Custom Efficiency program for preapproval

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MN & CO Motor Efficiency NEMA Premium[®] efficiency motors

- To qualify, motors must meet the following criteria:
 - Meet or exceed the NEMA Premium[®] efficiency standards.
 - AC polyphase induction motor.
 - Squirrel cage rotor design.
 - NEMA design B torque characteristics.
 - Synchronous speeds of 3600, 1800, or 1200

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MN & CO Motor Efficiency Variable Frequency Drives (VFDs)

Description	Horsepower	Rebate
VFDs	1 hp – 200 hp	\$30/hp
Custom VFDs	Over 200 hp	Individually determined under the Custom Efficiency program

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MN & CO Motor Efficiency Variable Frequency Drives (VFDs)

- The system where the VFD is being used must
 - operate at least 4,000 hours per year
 - run at two or more operating points less than 55% loaded, 75% of the time
 - be tied to an automated control system
 - be installed on qualifying applications
 - be a new VFD with True Power Factor of 0.90 and above

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MN & CO Motor Efficiency Variable Frequency Drives (VFDs)

- Applications not eligible for prescriptive rebates include:
 - Chillers
 - Refrigeration and air compressors

Note: Motors over 200 HP may be submitted for evaluation through our Custom Efficiency program for chillers, refrigeration and air compressors.

- Additional applications not eligible for rebate
 - Soft-start
 - Power-factor correction

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MN & CO Motor Efficiency

	MN		CO*	
	2005	2006 YTD	2005	2006 YTD
Participants	521	368	na	32
Approximate Energy Savings (GWh)	29.0	10.70	na	4.52
Incentives Paid	\$1,284,000	\$516,000	na	\$141,000

* Program new in 2006

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Contact Information

- Bruce Peterson – Product Manager
 - (303) 294-2263
 - Email: bruce.peterson@xcelenergy.com
- Brian Hammarsten – MN Trade Relations Manager
 - (612) 330-7769
 - Email: Brian.hammarsten@xcelenergy.com
- Bill Gruen – CO Trade Relations Manager
 - (303) 294-2082
 - Email: william.gruen@xcelenergy.com

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QUESTIONS?

Visit our website: xcelenergy.com

- Enter CO or MN Zip code and click "GO," then drag cursor over "Commercial & Industrial," and click on "Programs & Resources"
- In the left hand navigation box, click on "Conservation Rebates & Incentives," then click on "Motors/VFDs"