



# ***Minnesota & Colorado MOTOR EFFICIENCY REBATES***

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# ***Rebate program overview***

- ▶ **Prescriptive**
  - ▶ **Motors (1 - 500 hp) NEMA Premium® efficiency**
    - ▶ **Higher rebates for enhanced efficiency**
  - ▶ **Drives up to 200 hp for pumps & fans**
- ▶ **Custom**
  - ▶ **Motors > 500 hp**
  - ▶ **Drives >200 hp**
- ▶ **Rebates not available for rewind or repaired motors**

# ***Working vs. non-working motors***

- ▶ **New motor rebates are available to eligible customers who install a motor where one never existed, or replace a non-operating (non-working).**
- ▶ **Upgrade motor rebates are available to eligible customers who replace a working inefficient motor with a NEMA Premium® motor.**

# ***Motor rebates for NEMA Premium® Efficiency Motors***

<b>NEMA Premium® Rebate</b>	<b>Horsepower</b>	<b>MN Rebate</b>	<b>CO Rebate</b>
<b>New Motors (new equipment or burnout)</b>	<b>1 to 500</b>	<b>\$4/hp</b>	
<b>Replacing operating motor</b>	<b>1 to 500</b>	<b>\$16.50/hp</b>	
<b>New or replacement</b>	<b>&gt;500</b>	<b>Up to \$400/kW saved</b>	<b>Up to \$400/kW saved</b>

# CO Rebates New Motors

- ▶ More information at [xcelenergy.com](http://xcelenergy.com)
- ▶ Based on NEMA spec - table 12-12

PLAN A – NEW								
MOTOR HP	Open Drip Proof (ODP) – NEMA Premium efficiency criteria			Totally Enclosed Fan Cooled (TEFC) – NEMA Premium efficiency criteria			NEMA Premium Rebate	"Enhanced" NEMA Premium
	1200 rpm	1800 rpm	3600 rpm	1200 rpm	1800 rpm	3600 rpm		
1	82.5	85.5	77.0	82.5	85.5	77.0	\$25	\$30
1.5	86.5	86.5	84.0	87.5	86.5	84.0	\$25	\$30
2	87.5	86.5	85.5	88.5	86.5	85.5	\$25	\$30
3	88.5	89.5	85.5	89.5	89.5	86.5	\$30	\$40
5	89.5	89.5	86.5	89.5	89.5	88.5	\$30	\$40
7.5	90.2	91.0	88.5	91.0	91.7	89.5	\$50	\$60
10	91.7	91.7	89.5	91.0	91.7	90.2	\$50	\$70
15	91.7	93.0	90.2	91.7	92.4	91.0	\$60	\$90
20	92.4	93.0	91.0	91.7	93.0	91.0	\$60	\$120
25	93.0	93.6	91.7	93.0	93.6	91.7	\$100	\$150
30	93.6	94.1	91.7	93.0	93.6	91.7	\$125	\$180
40	94.1	94.1	92.4	94.1	94.1	92.4	\$125	\$220
50	94.1	94.5	93.0	94.1	94.5	93.0	\$150	\$275
60	94.5	95.0	93.6	94.5	95.0	93.6	\$225	\$320
75	94.5	95.0	93.6	94.5	95.4	93.6	\$300	\$375
100	95.0	95.4	93.6	95.0	95.4	94.1	\$350	\$500
125	95.0	95.4	94.1	95.0	95.4	95.0	\$425	\$625
150	95.4	95.8	94.1	95.8	95.8	95.0	\$450	\$750

# ***Motor rebates for Enhanced NEMA Premium® Efficiency Motors***

Enhanced = exceed efficiency percentage by 1 numeral

Example: NEMA = 94%, Enhanced = 95%

Description	Horsepower	MN Rebate	CO Rebate
New motor (new equipment or burnout)	1 to 500	\$6/hp	
Replacing operating motor	1 to 500	\$18.50/hp	
New or replacement	>500	Up to \$400/kW saved	Up to \$400/kW saved

# CO Rebates Replacement Motors

- ▶ More info at [xcelenergy.com](http://xcelenergy.com)
- ▶ Based on NEMA spec - table 12-12

PLAN B-UPGRADE								
MOTOR HP	Open Drip Proof (ODP) – NEMA Premium efficiency criteria			Totally Enclosed Fan Cooled (TEFC) – NEMA Premium efficiency criteria			NEMA Premium Rebate	"Enhanced" NEMA Premium
	1200 rpm	1800 rpm	3600 rpm	1200 rpm	1800 rpm	3600 rpm		
1	82.5	85.5	77.0	82.5	85.5	77.0	\$200	\$210
1.5	86.5	86.5	84.0	87.5	86.5	84.0	\$200	\$210
2	87.5	86.5	85.5	88.5	86.5	85.5	\$200	\$210
3	88.5	89.5	85.5	89.5	89.5	86.5	\$225	\$240
5	89.5	89.5	86.5	89.5	89.5	88.5	\$300	\$325
7.5	90.2	91.0	88.5	91.0	91.7	89.5	\$450	\$465
10	91.7	91.7	89.5	91.0	91.7	90.2	\$500	\$520
15	91.7	93.0	90.2	91.7	92.4	91.0	\$750	\$780
20	92.4	93.0	91.0	91.7	93.0	91.0	\$850	\$890
25	93.0	93.6	91.7	93.0	93.6	91.7	\$1,000	\$1,050
30	93.6	94.1	91.7	93.0	93.6	91.7	\$1,000	\$1,060
40	94.1	94.1	92.4	94.1	94.1	92.4	\$1,200	\$1,280
50	94.1	94.5	93.0	94.1	94.5	93.0	\$1,500	\$1,600
60	94.5	95.0	93.6	94.5	95.0	93.6	\$1,800	\$1,920
75	94.5	95.0	93.6	94.5	95.4	93.6	\$2,250	\$2,400
100	95.0	95.4	93.6	95.0	95.4	94.1	\$3,000	\$3,200
125	95.0	95.4	94.1	95.0	95.4	95.0	\$3,750	\$4,000
150	95.4	95.8	94.1	95.8	95.8	95.0	\$4,500	\$4,800
200	95.4	95.8	95.0	95.8	96.2	95.4	\$5,000	\$5,400



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# ***Motor Efficiency Variable Frequency Drives (VFDs)***

<b>Description</b>	<b>Horsepower</b>	<b>MN Rebate</b>	<b>CO Rebate</b>
<b>VFDs &gt; 3,000 operating hours fans &amp; pumps only</b>	<b>1 to 200</b>	<b>\$30/hp</b>	
<b>Custom – all others</b>	<b>&gt;200 or non fan/pump or &lt;3,000 hours</b>	<b>Up to \$400/kW saved</b>	<b>Up to \$400/kW saved</b>

**Prescriptive drives must run at two or more operating points less than 55% loaded, 75% of the time and be automatically controlled to vary the motor's speed to match changes in the motor's load.**

# CO Drive Rebates

Drives Tiered HP		Drives Tiered HP	
Motor HP	Prescriptive rebate levels for drives that operate pump or air movement devices.	Motor HP	Prescriptive rebate levels for drives that operate pump or air movement devices.
1	\$400	60	\$4,000
1.5	\$400	75	\$5,000
2	\$400	100	\$6,000
3	\$400	125	\$7,000
5	\$600	150	\$7,000
7.5	\$750	200	\$8,000
10	\$1,000	Larger than 200	Drives on non-fan or non pumps, or equipment larger than 200 hp will be evaluated via Custom Efficiency
15	\$1,250		
20	\$1,600		
25	\$2,000		
30	\$2,400		
40	\$3,000		
50	\$3,500		



# ***Drive Examples***

## **▶ Prescriptive**

- ▶ HVAC fans
- ▶ Pumps
- ▶ Cooling towers
- ▶ Industrial fans

## **▶ Not eligible**

- ▶ Soft start
- ▶ Power-factor corrections

## **▶ Custom**

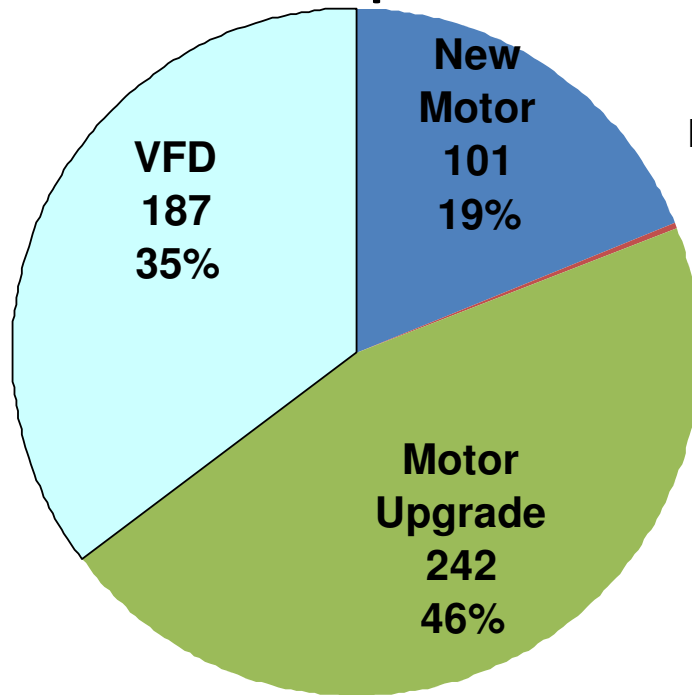
- ▶ Chillers
- ▶ Refrigeration compressors
- ▶ Air compressors
- ▶ Presses
- ▶ Process equipment
- ▶ Extrusion
- ▶ Conveyors

# ***Underlying Assumptions***

- ▶ **75% load factor for motors**
- ▶ **75% load factor for pumping drives**
- ▶ **65% load factor for fan drives**
- ▶ **33% savings for prescriptive drives**
- ▶ **20 year equipment life**
- ▶ **Operating hours vary by building type (office, retail, school ...) and motor application (HVAC pump, ventilation fan, other)**

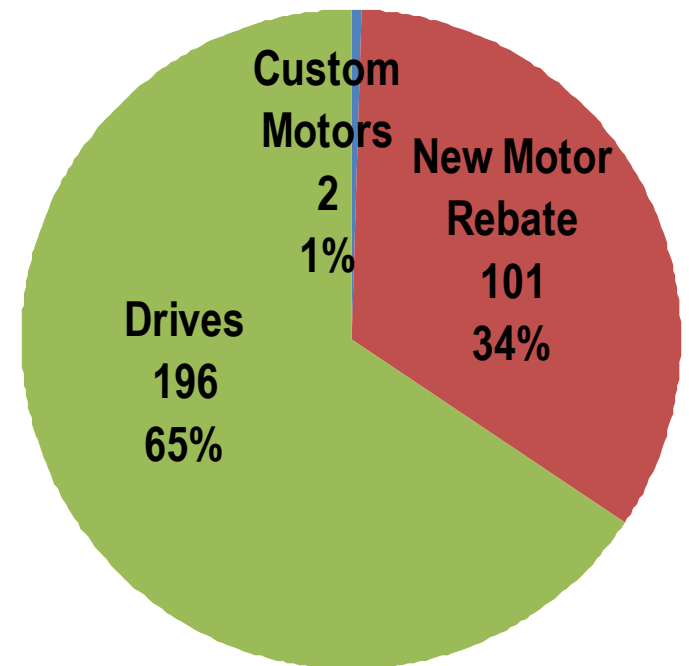
# 2008 Motor Program Participation

% of Participants - MN



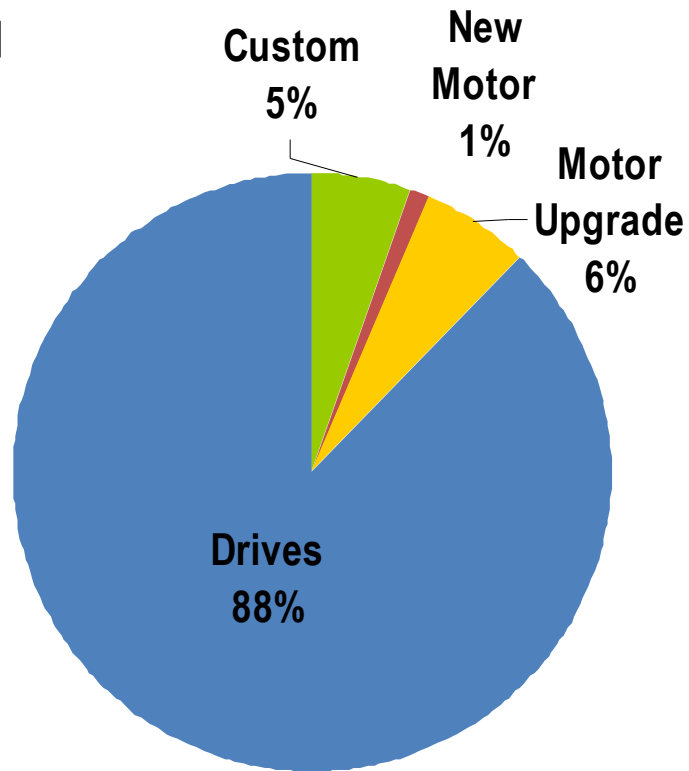
% of Participants - CO

New Motor  
Enhanced  
1  
0%

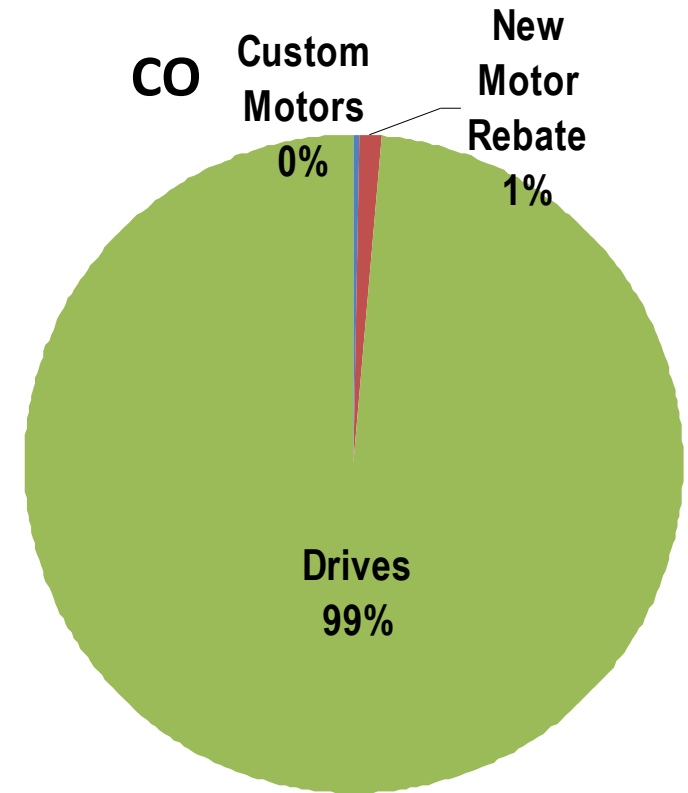


# 2008 Motor Program Achievement

MN



CO



# ***Motors contribution to 2009 portfolio***

- ▶ **MN Business goal 276 GWh**
  - ▶ **Motors goal 27 GWh (10%)**
- ▶ **CO Business goal 116 GWh**
  - ▶ **Motors goal 21 GWh (18%)**

## ***2010 Program Changes***

- ▶ **Proposed changing MN to closely mirror CO rebate levels and structure**
- ▶ **Increased goals to 30.5 GWh (was 27)**

# ***VFD/ASD Program Success***

## **▶ MN**

- ▶ 66% of customers use drives**
- ▶ 53% report additional drive potential**
- ▶ >53% of program achievement YTD**

# ***Small Business Challenges***

- ▶ **Small business = big challenge**
- ▶ **Half employ <20 people**
- ▶ **20-25% of annual motor sales**
- ▶ **< 6% of program achievements YTD**

# Trade Partner Success

\*Cash incentives for Motor Rebates available to trade partners:

<b>TIER 1</b>	1 – 999	\$1/HP
<b>TIER 2</b>	1000 HP – 2499 HP	\$2/HP
<b>TIER 3</b>	2500 HP and above	\$3/HP

- ▶ **Require paperwork attached**
- ▶ **Improves internal processes**
- ▶ **Paid as check to individual or firm**

\*Motor trade partners can receive cash incentives for submitting Motor Efficiency rebate leads on behalf of their customers.

# Questions

