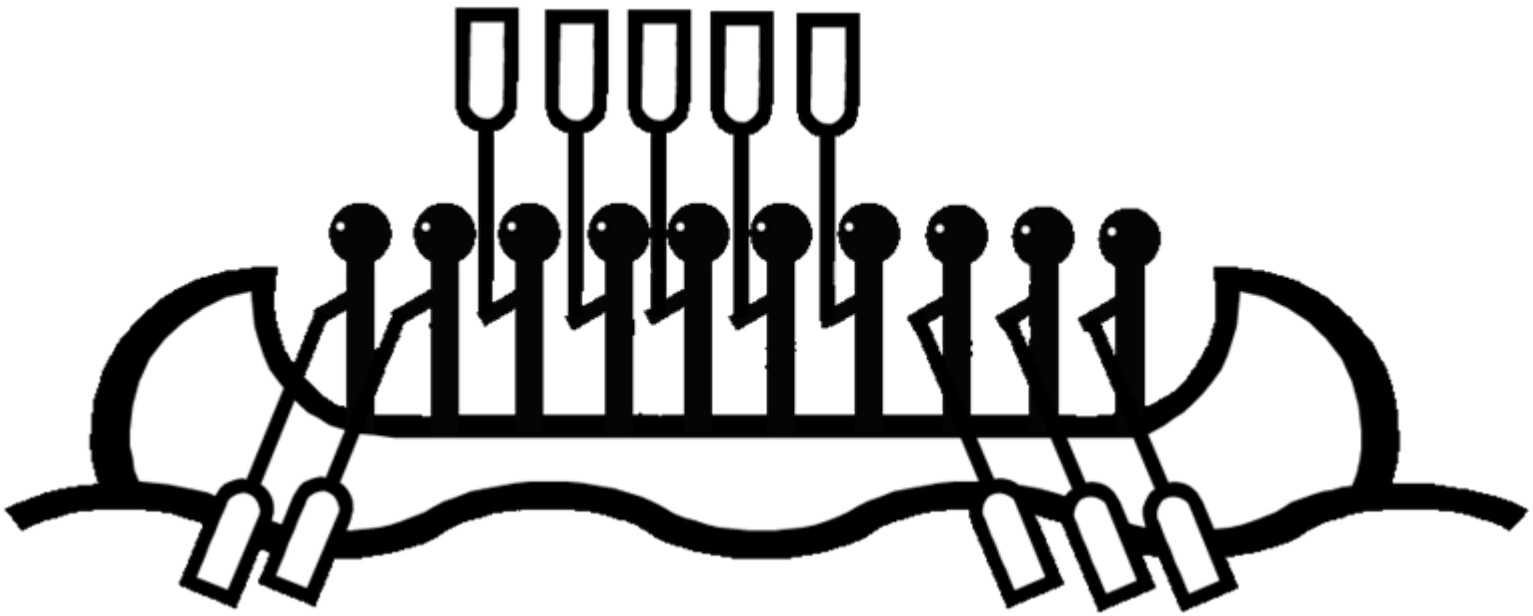
Save Energy Now- focus on the drivers, and communicate with the masses.

Driver	Default	Defiance
20%	50%	30%
Engaged	Sit on Fence	Opposition
Reward	Recruit	Give Information



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From Inefficient TO

Market Shift

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Motor Efficiency Ideas

- Market
  - Behavior
- NEMA Premium Efficiency
  - Relative Opportunity
- Save Energy Now
- Market Impact
  - Service Center - Upside
  - LCC Opportunity Motor Retirement Option
  - Integrated 123 Input Collection
- Regulatory actions
  - IHP and FHP
- Save Energy Now
  - The next generation energy initiative
- Conclusions

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NEMA Standards Provide the Foundation for Motor Efficiency Policy

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Motor Generator Section

Changing Behavior- Carrots and Sticks

- OEM channel [48%] of IHP units
  - Regulations from government
- Small OEM purchased through distribution [18%]
  - Regulations from government
- End Users direct or through distribution [34%]
  - Life cycle cost comparisons of NEMA Premium to used motors or repair
  - Dollar based decisions
    - First cost subsidized by utility or other
    - Stand alone return based
- High level end user commitment
  - Save Energy Now

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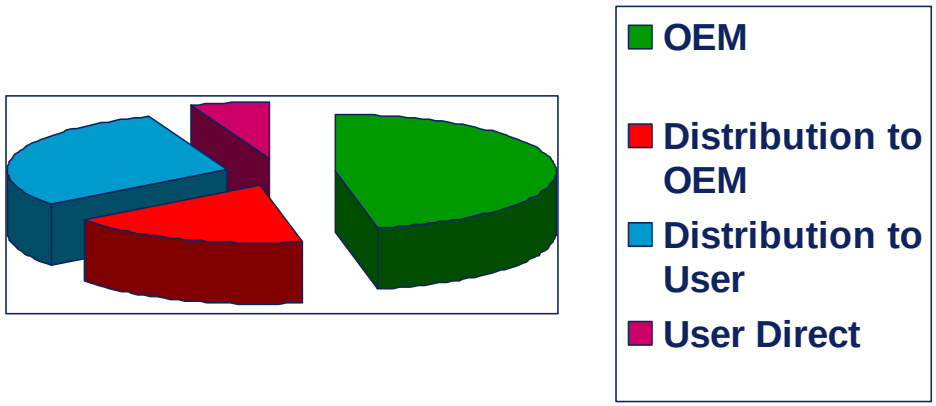
IHP Motor Channels To Market



OEM and Distributor Sales channels are split evenly at approximately 48% each. Small OEMs buy 18% through distribution.

End users buy 30 % through Distribution and 4% direct from manufacturers.

•Of motors not purchased by OEMs, about three-fifths are sold to replace failed motors. The rest are new.

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Efficiency Elements	1992	1997	2001	2005	2007	2008	2010
Covered product	Defined	Implement	Unchanged	Unchanged FEMP	Unchanged FEMP	Unchanged FEMP	Expanded
Efficiency levels	Defined	Implement	NEMA Premium	NEMA Premium	NEMA Premium	NEMA Premium	NEMA PREMIUM
Test Method	Defined	Implement	Unchanged	Unchanged	Unchanged	Unchanged	Unchanged
Lab required	Defined	Implement	Unchanged	Unchanged	Unchanged	Unchanged	Unchanged
Compliance enforce	Defined	Implement	Unchanged	Unchanged	Unchanged	Unchanged	Unchanged
Timing	Defined	Implement	Voluntary	Voluntary	Voluntary	Voluntary	Law
Revisions	Defined			FEMP Added	Discussion Begins	Future Legislation	Addressed

Today's Industrial Motor System

- Motors
  - Regulated since 1997
  - New higher levels scheduled for 2010
- Drives
  - High savings potential no current regulations
- Pumps
  - High savings potential no current regulations
- Gears
  - High savings potential no current regulations

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Voluntary Commitments by Industrial Leaders

- Voluntarily pledge to reduce energy intensity by 25% or more over 10 years
- Make continuous improvements in energy efficiency and carbon reduction as part of robust business strategy
- Gain enhanced access to enabling resources: tailored technical assistance, training, assessments, and more
- Receive high-level recognition for participation and achievements

Source DOE

Reduced energy costs and smaller carbon footprint

What DOE Provides

- Priority access to energy system assessments on multiple industrial systems and emerging advanced technologies
- Tailored assistance in developing the energy baseline and energy management plan, plus ongoing access to expert advice
- Waived fees for training workshops on financing options, advanced technology, energy management, software tools, etc.
- Easy access to proven, energy analysis tools, services, and other resources
- National, high-level recognition for pledge participation and subsequent achievements

Source DOE

Launching the Pledge

- Identify “charter members” among leading industrial companies
  - Publicize their participation in media
- Officially launch with public signing ceremony [at White House]
- Hold Summit
  - Stimulate dialogue among stakeholders (utilities, labs, members of Congress, and manufacturers)
  - Attract more pledges from industry

Source DOE

Joint Life-Cycle Cost Ideas

- Any one of the four system components alone is a less compelling user motivation
- MG section efforts to promote motors in LCC terms have been met with limited success
- MDM [motor decisions matter] and PDM [pump decisions matter] have raised the question of system collaboration as a means to reach a large audience.
- Is there a play for VFDs and Gears?
- There may be a play to join forces and work through DOE's Save Energy Now program

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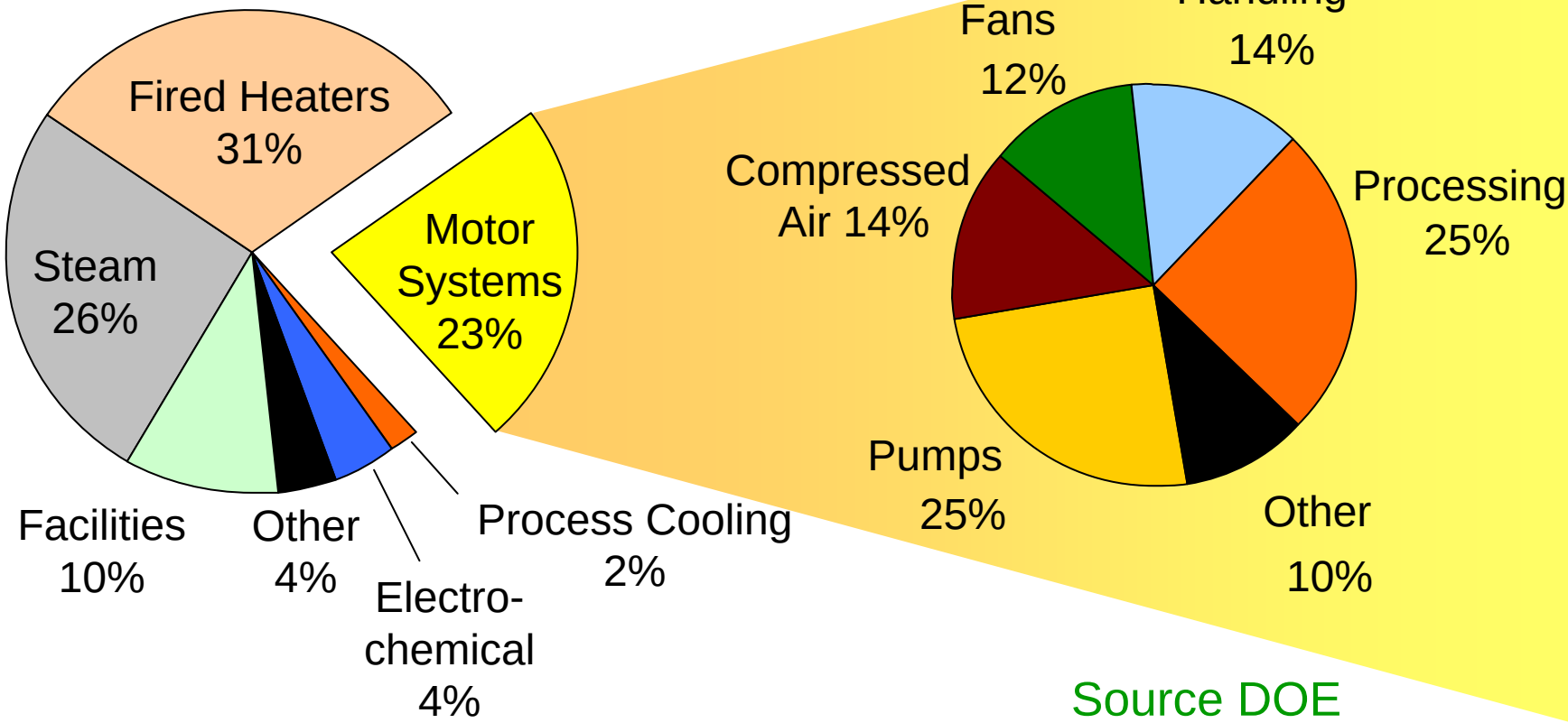
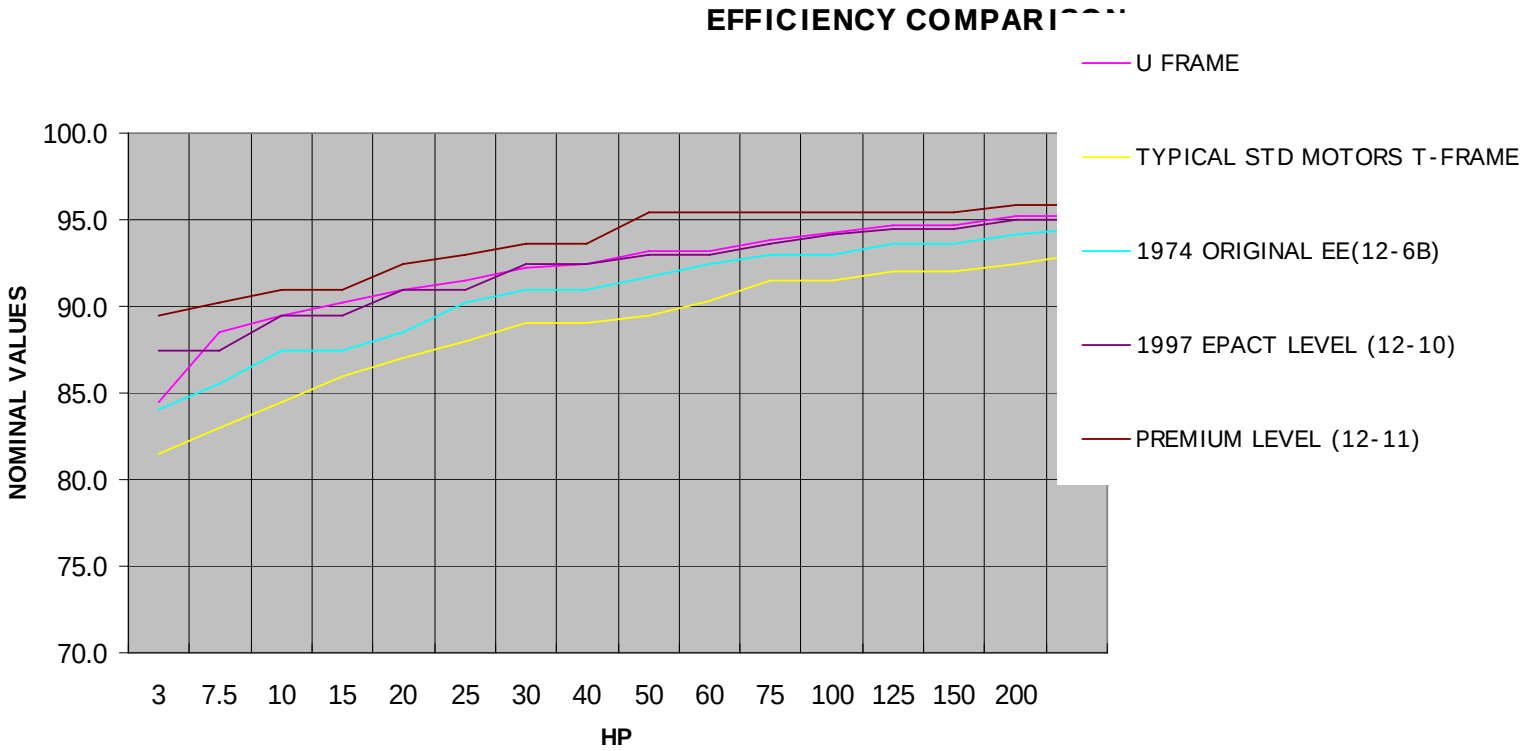
Manufacturing & Mining Energy Use



Source DOE

Includes electricity generation/distribution/transmission losses

Various Efficiency Levels Exist Within MG 1



Test methods use IEEE 112 method B
IEC 60034-2-1

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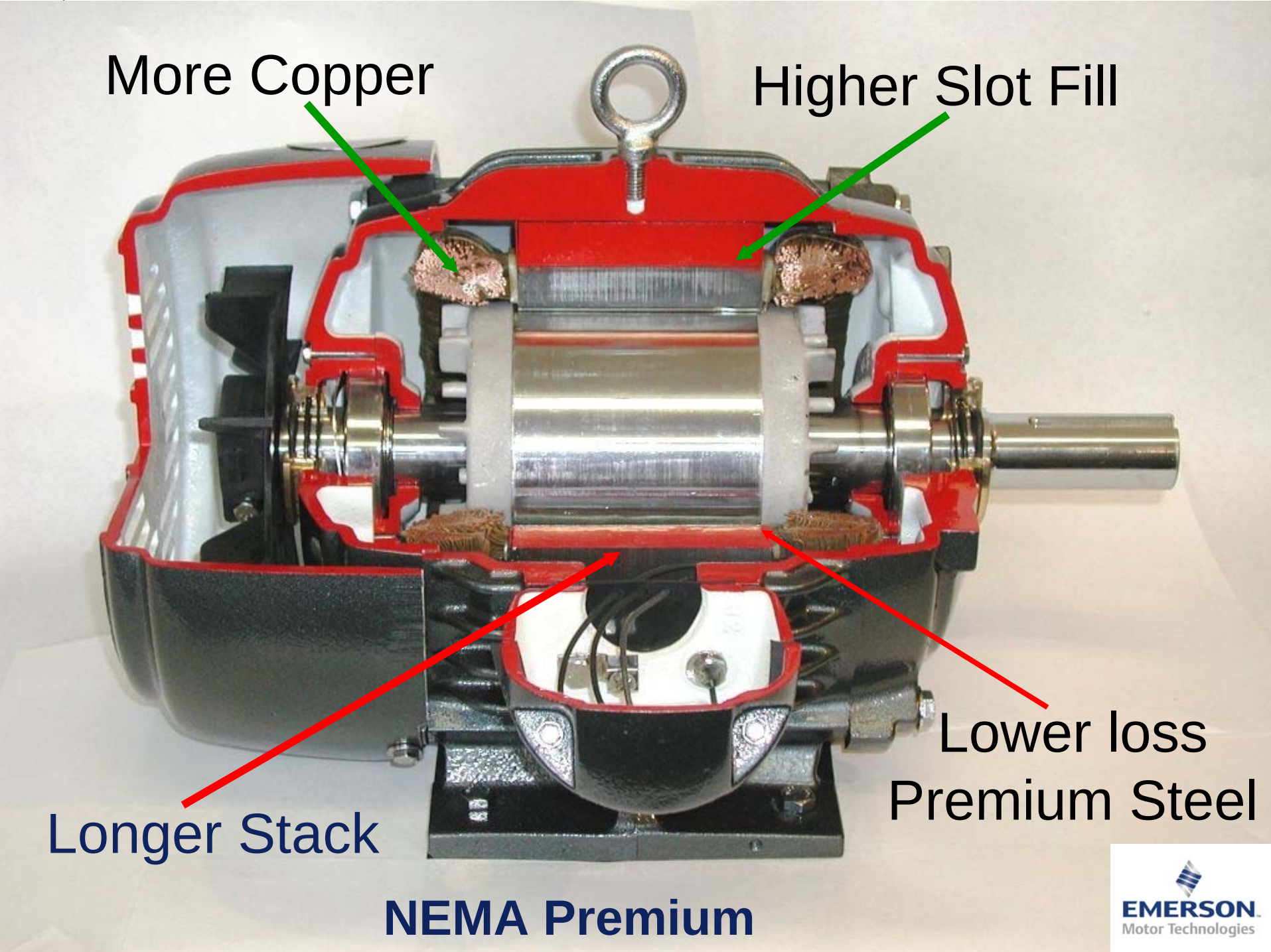
NEMA Premium 2001

- Establish a national motor efficiency **Identity!**
- NEMA Premium is a registered trade mark
- Expand scope of product to include a much greater number of potential units
- Create a testing and labeling scenario that is consistent with existing federal energy code
- Add NEMA premium to MG1 in two new tables as an ANCI standard [12-12 and 12-13]
- Align utility rebates and state energy programs to use/refer to NEMA Premium

NEMA Premium



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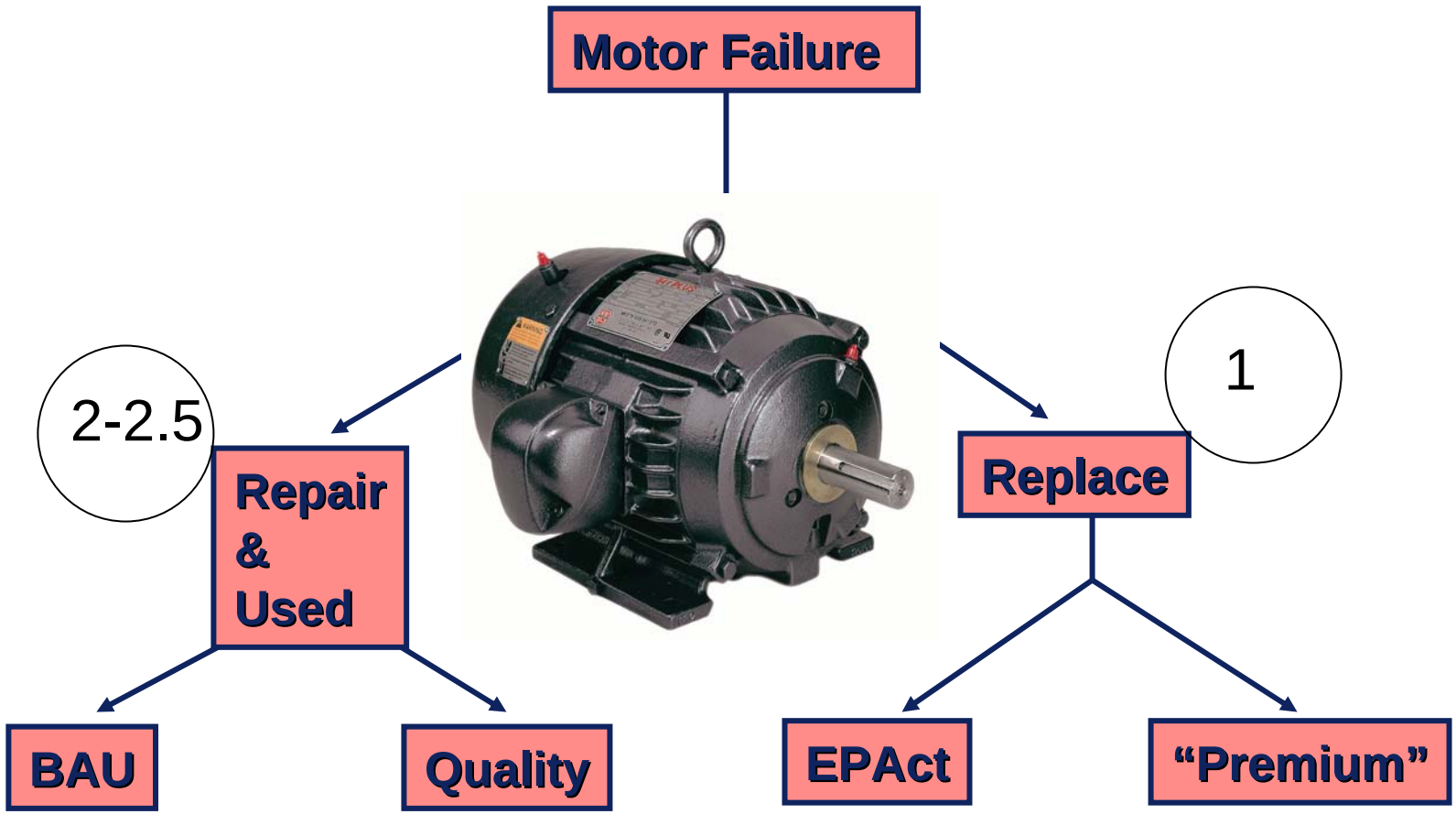
EMERSON
Motor Technologies

The Decision To Replace Failed Motors can save thousands of dollars in operating costs



Source ACEEE

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Assumptions used to estimate industrial motor efficiency savings opportunity
Ten cents per kwh operating at 5000 hours per year.

HP Range	New Units per Year USA Typical	Potential KWH Saved NEMA Prem	Repaired % of installed base	Units Repaired or replaced with used	Potential KWH Saved Not Repaired		Ave KWH Saved per unit per year average of category	Installed base USA annual sales times life	Average Motor Life
1-5HP	700,000	1,157,485,896	1%	126,000	208,347,461		1654	12,600,000	18
6-20HP	500,000	3,075,678,753	3%	270,000	1,660,866,526		6151	9,000,000	18
21-50HP	180,000	2,123,872,211	4%	129,600	1,529,187,992		11799	3,240,000	18
51-100HP	70,000	1,648,469,932	5%	70,000	1,648,469,932		23550	1,400,000	20
101-200HP	30,000	1,124,181,028	7%	52,500	1,967,316,799		37473	750,000	25
201-500HP	16,000	747,117,341	10%	48,000	2,241,352,022		46695	480,000	30
Total Industrial	1,496,000			696,100				27,470,000	

Percentage repaired estimate includes failed motors rewound or replaced by used motors from user stock or service center. Mechanical repairs including bearing replacement have not been included.
Vertical motors not included.

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Size (hp) LV	Pre-EPAct[1]	EPAct[2]	NEMA Premium[4]	NEMA Prem to Pre Epact	NEMA Prem to Epact
1.0	76.7	82.5	85.5	8.8	3.0
1.5	79.1	84.0	86.5	7.4	2.5
2.0	80.8	84.0	86.5	5.7	2.5
3.0	81.4	87.5	89.5	8.1	2.0
5.0	83.3	87.5	89.5	6.2	2.0
7.5	85.5	89.5	91.7	6.2	2.2
10.0	85.7	89.5	91.7	6.0	2.2
15.0	86.6	91.0	92.4	5.8	1.4
20.0	88.5	91.0	93.0	4.5	2.0
25.0	89.3	92.4	93.6	4.3	1.2
30.0	89.6	92.4	93.6	4.0	1.2
40.0	90.2	93.0	94.1	3.9	1.1
50.0	91.3	93.0	94.5	3.2	1.5
60.0	91.8	93.6	95.0	3.3	1.4
75.0	91.7	94.1	95.4	3.7	1.3
100.0	92.3	94.5	95.4	3.2	0.9
125.0	92.2	94.5	95.4	3.2	0.9
150.0	93.0	95.0	95.8	2.8	0.8
200.0	93.5	95.0	96.2	2.7	1.2

Efficiency delta decreases as horsepower increases

Source MDM 1,2,3

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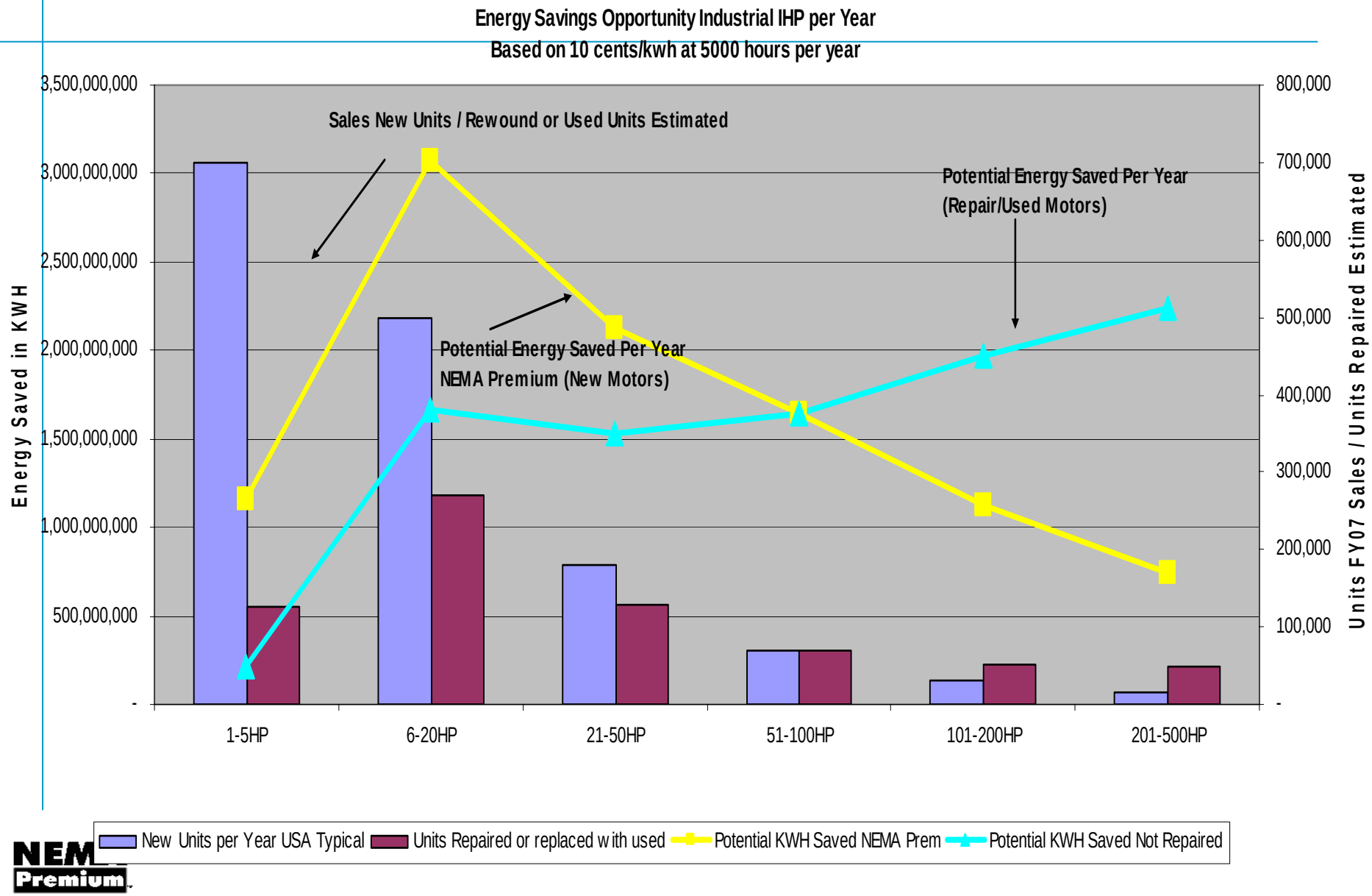

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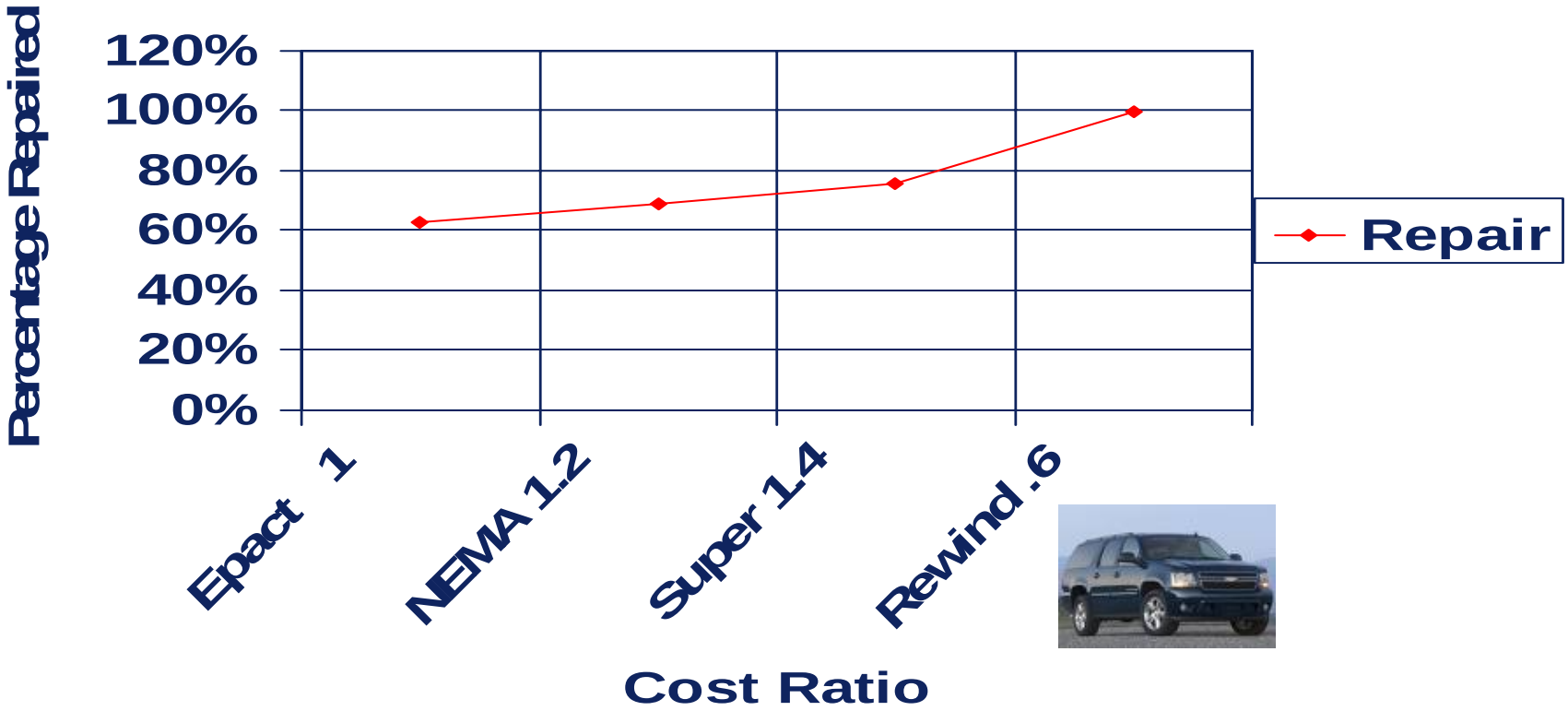
Percentage of Failed Motors Repaired Assumed Trend Line without rebates



Super Premium includes estimated added components cost

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Service Center Options

- Repair a greater percentage of failed motors
  - Initial cost ratio continues to favor repair as an alternative to new

- Sell higher cost higher performance new NEMA Premium motors
  - Increase revenue dollars
  - Gain new service business
  - Help maintain a customer's financial health
  - Increase new motor sales by retirement of older less efficient motors
- Implement a utility retirement rebate offsets additional cost
  - California utility determined 26% of installed base would payback on average of 2 years
  - Rebate programs direct to service centers deliver over four times the return of rebates direct to users

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Repair v.s. Replace User Options Without Rebate

.6 times
[Epact$] = $Y
Expense Budget

1.2 times
[Epact$] = $Z
Capital Budget

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Make 123 Easier for Service Center Field Users

Energy Analysis Data Input

Company Name		Date	2/5/2007		
Representative Motors [5]	**1**	**2**	**3**	**4**	**5**
Location					
Contact					
Date Evaluated					
Plant energy cost kwh and peak					
Motor Nameplate Data	**1**	**2**	**3**	**4**	**5**
Motor ID					
Manufacturer					
Model					
Size (hp)					
RPM					
Enclosure Type					
Full-Load Efficiency (%)					
Frame Size and Type					
Voltage Rating					
Total Yearly Operating Hours					
Quantity of Similar Motors					
Special features and options					

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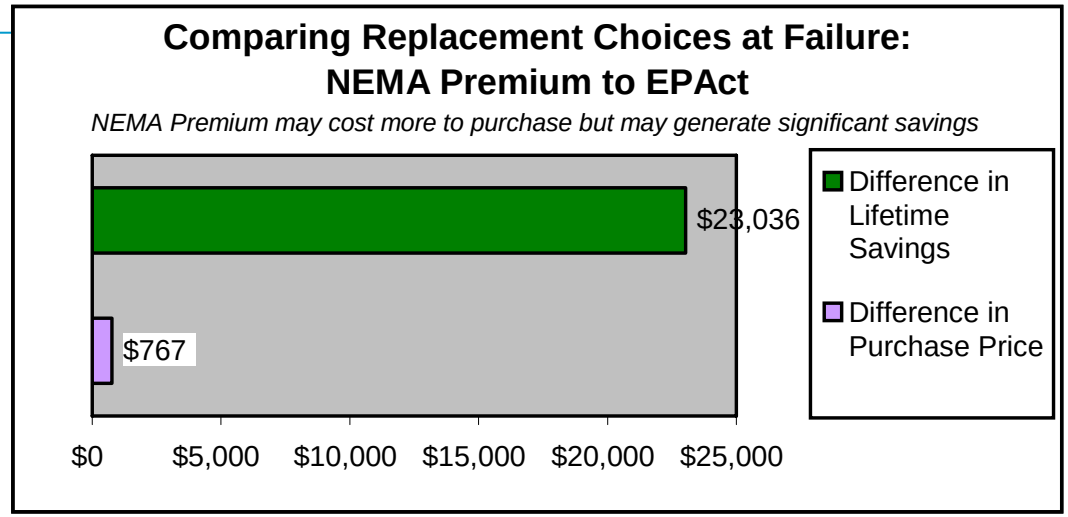
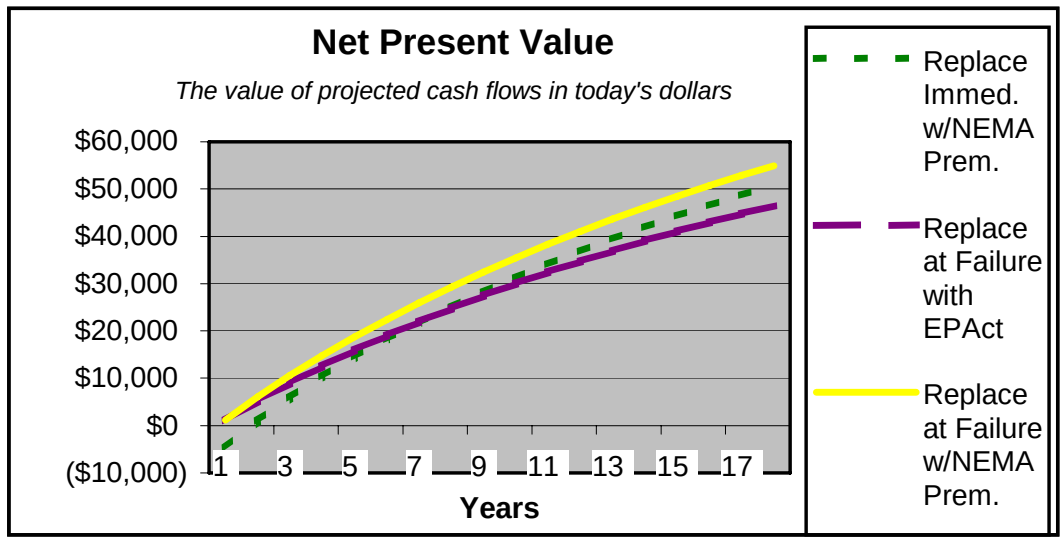
A Typical Motor Life Cycle Savings Result

Calculation Results Page 1 of 2: Representative Motor 4

The incremental cost of purchasing a NEMA Premium motor may be quickly recovered by reduced energy costs over the life of the motor.



Definition of Net Present Value: The value of future cash flows, i.e., future energy cost savings, expressed in today's dollars.
The calculation is based on incremental cost. It incorporates the discount rate, tax rate, and depreciation schedule shown in the Assumptions Table at the top of the page. These can be re-entered by the customer to more accurately reflect their financial practices. If values are re-entered, you must re-click the decision button on this page to update the calculations.



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A Typical Sample Evaluation

Includes Simple Payback

Summary of Results

These results are calculated to represent the full quantity of similar motors.	Sample Motor					Grand Total
	1	2	3	4	5	
Location	plant one	plant 1	Plant 2	plant 1	plant 2	
Date Evaluated	01/04/06	01/04/06	01/06/06	01/07/06	01/05/06	
Quantity of Similar Motors	45	8	85	3	340	481
Gross Connected Horsepower	2250	800	1275	750	680	5755
Cumulative Yearly Operating Hours	202,500	44,800	382,500	13,500	2,465,000	3,108,300
Cumul. Current Annual Energy Cost	$1,035,874	$460,977	$733,744	$339,472	$689,584	$3,259,651
Decision	Replace with NEMA Premium at Failure	Replace with EPAct at Failure	Replace Immediately with NEMA Premium	Replace with EPAct at Failure	Replace with EPAct at Failure	
Cumulative Capital Investment	$208,458	$59,864	$156,740	$30,432	$181,220	$636,714
Cumulative Annual Energy Savings	$76,731	$36,585	$38,911	$21,440	$32,837	$206,505
Cumulative Net Present Value	$524,719	$235,282	$157,199	$139,353	$208,597	$1,265,150
Average Simple Payback Period	1.66	0.58	4.03	0.47	0.70	1.49

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Future Efficiency Regulations EISA

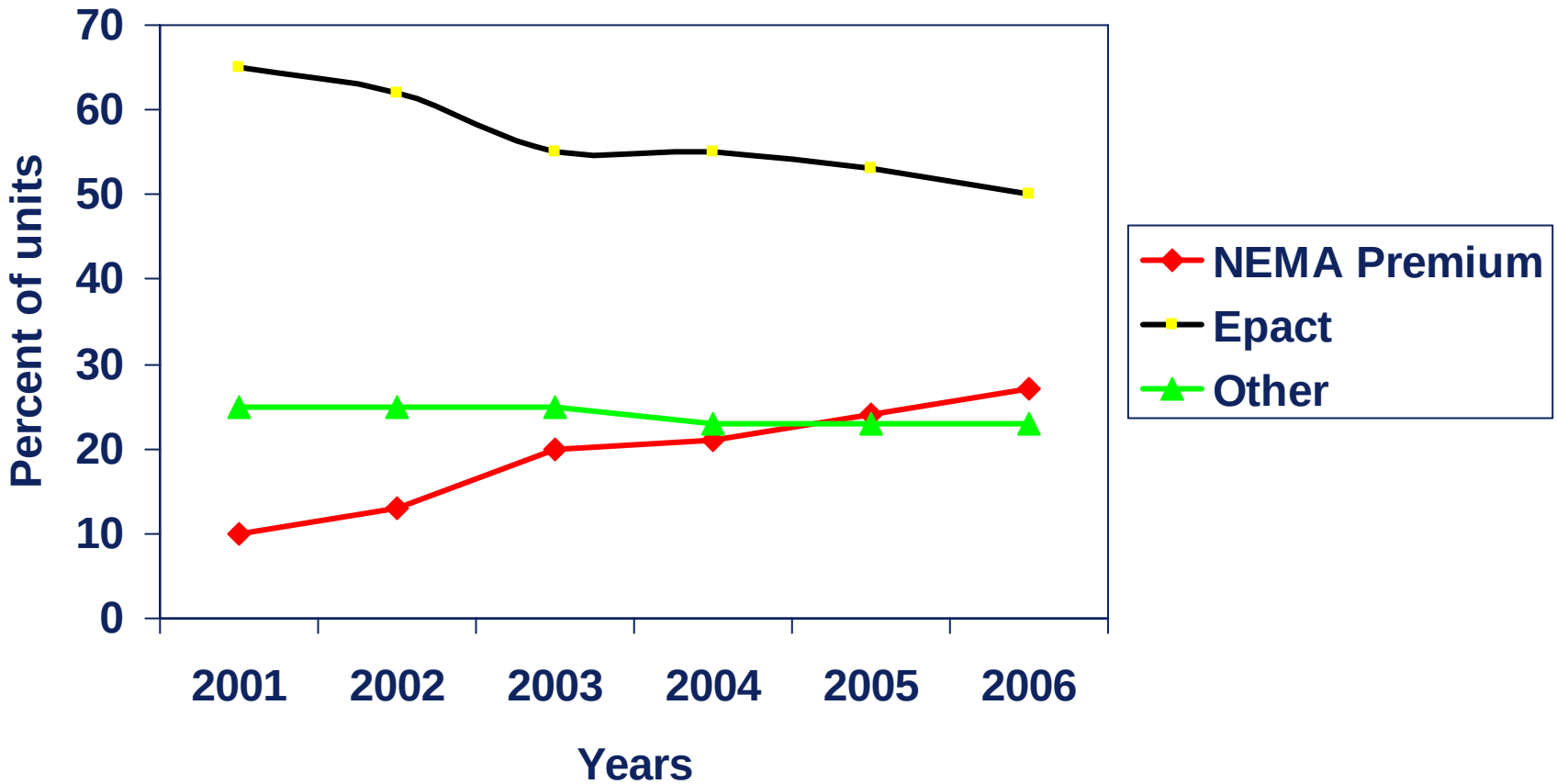
- Move 1-200 Horse power general purpose to NEMA Premium efficiency levels
- Add seven categories of low volume motors not included in Epact92
- Add 201 to 500 horse power at MG 1 12-11 efficiency levels
- Offer tax incentives to end users to accelerate implementation of NEMA Premium motors
- Method to be used legislation as opposed to DOE rule making process
- Timing to be 36 months from enactment -12/19/2010
- North America
  - Canada moving forward in step with US regulations
  - Mexico not resolved

NEMA Premium

Regulations EISA Implement 2010

- Move all general purpose product to NEMA Premium levels [MG1 12-12]
- Add seven categories of motors not included in original Epact92 [MG1 12-11]
  - U-Frame Motors
  - Design C Motors
  - Close-coupled pump motors
  - Footless motors
  - Vertical solid shaft normal thrust (tested in a horizontal configuration)
  - 8-pole motors (~900 rpm)
  - All poly-phase motors with voltages up to 600 volts other than 230/460 volts
- Add 201 to 500 horse power low voltage general purpose design “B” at [MG1 12-11] levels

Historic Efficiency Trend 2001- 2006



Market penetration after six years plateaus at 20-25%

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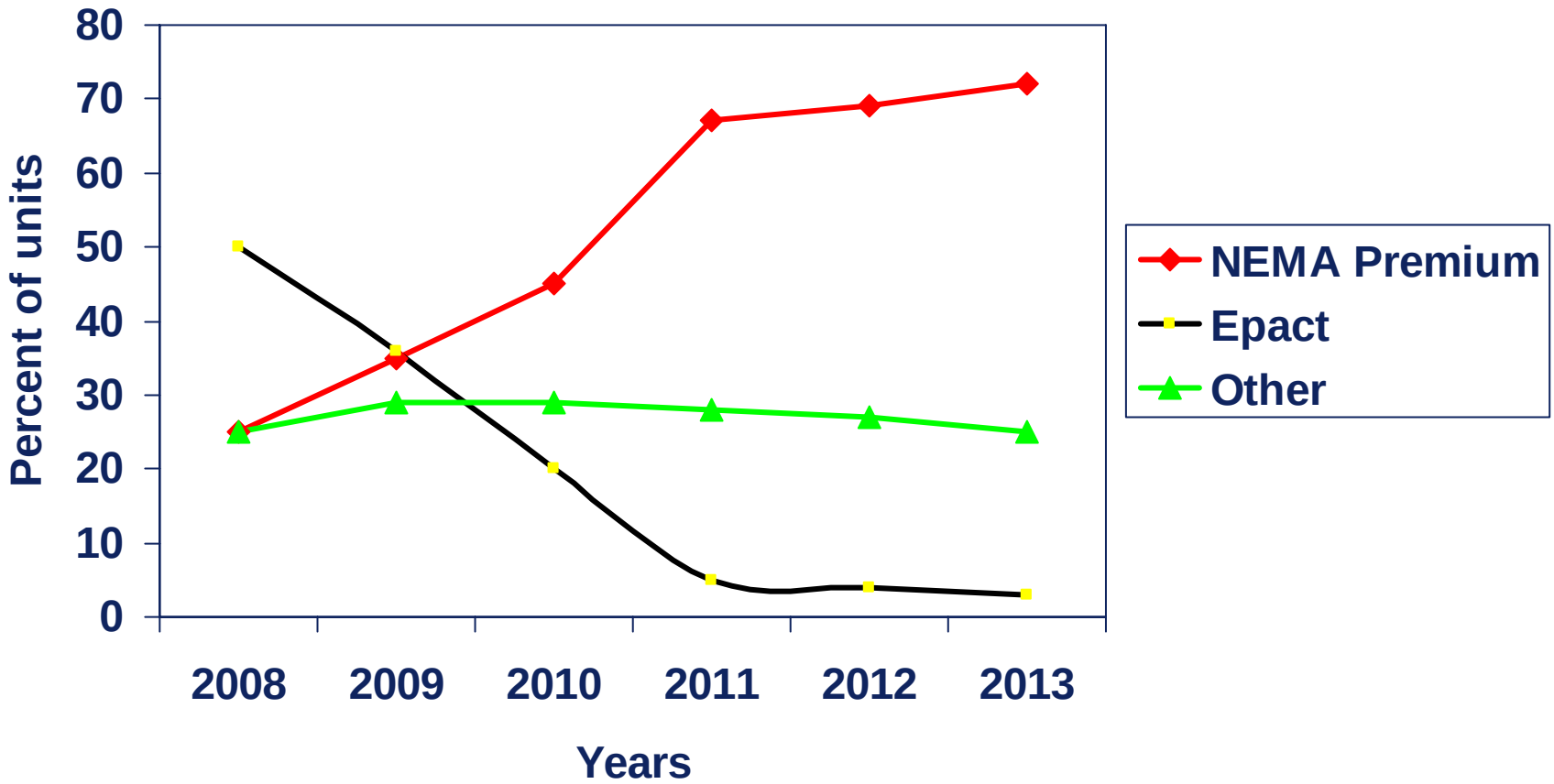
Future Efficiency Expected 2008- 2013



Regulatory revised forecast model

1 TO 200HP LVAC

NEMA Premium

From Inefficient TO

Stranded Inventory?

Market Shift

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Proposed Future Regulations

- ***Motor Purchase Incentive*** **–**
  - End-use customers purchasing low and medium-voltage motors of 1 to 500 horsepower meeting premium efficiency levels NEMA MG-1 (2006) Tables 12-12 or 12-13) would receive a tax credit per horsepower for motors purchased and installed in facilities in the United States.
- $15/ horsepower to a maximum of $1,250,000 per end user per year [83,000 connected horsepower]

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Small Motor DOE Rule Marking Process

- Rule making process has begun
- Product covered
  - ¼-3HP, 2/4/6 pole
  - Poly Phase, CSCR,CSIR
  - General Purpose ODP
- Test method
  - IEEE 114
- NNE
  - Std, Epact, NEMA Premium
- Labeling undecided
- Timing
  - NOPAR December 3-4th 2008

Issues = Enforcement and Value to User

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Motor Efficiency in USA Conclusion

- Epact Standards provide policy foundation
  - Basic product definition determined once then evolved over time
  - Test standards set and held constant and harmonized
  - Labeling agreed to early and held constant
  - Test labs requirements determined early in process and held constant
- NEMA Premium will become the regulated level
- Next LCC opportunities
  - Replace used motors
  - Replace instead of repair of older pre NEMA Premium
  - Meet Save Energy Now Commitments

- Replace fixed speed motors with variable speed
  - Remove belts, pulleys, sheaves, worm gearing, throttling valves and other inefficient mechanical components
- Replace induction motors with more efficient SR and PM products in variable speed applications

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