

# **Industrial Motors: What's Next for Efficiency Programs**

Motors & Motor Systems Breakout Sessions  
CEE Industry Partners Meeting  
October 16, 2008  
10:30 a.m. – 12:30 pm



**Working Together, Advancing Efficiency**

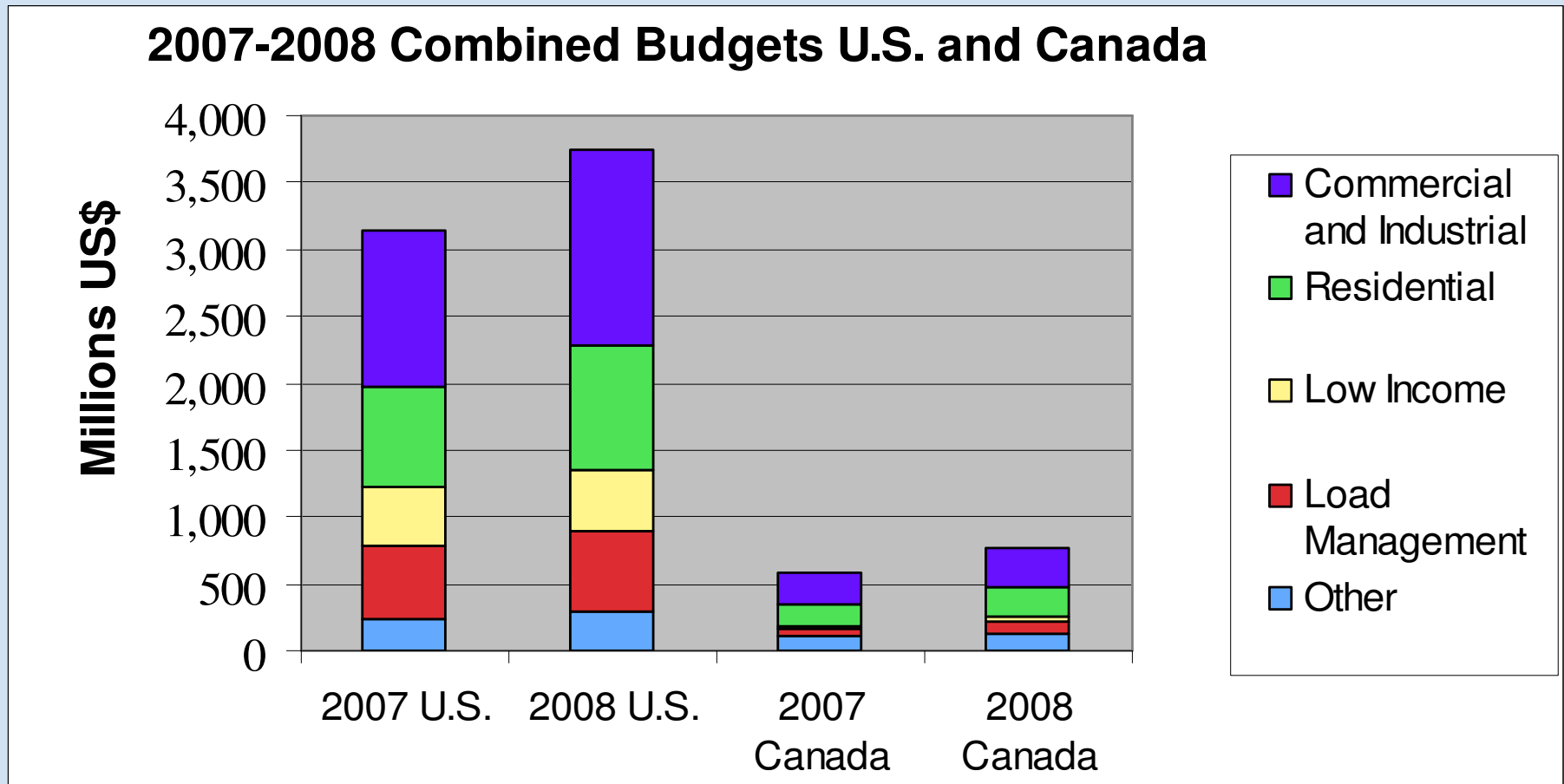
# Morning Session Agenda: Context Setting

- Industrial Efficiency Program Profile
  - CEE Industrial Programs
  - CEE Member Industrial Programs
- Exploring New Opportunities
  - Early retirement/replacement
  - Motor system optimization

# Afternoon Session Agenda: Developing the Opportunities

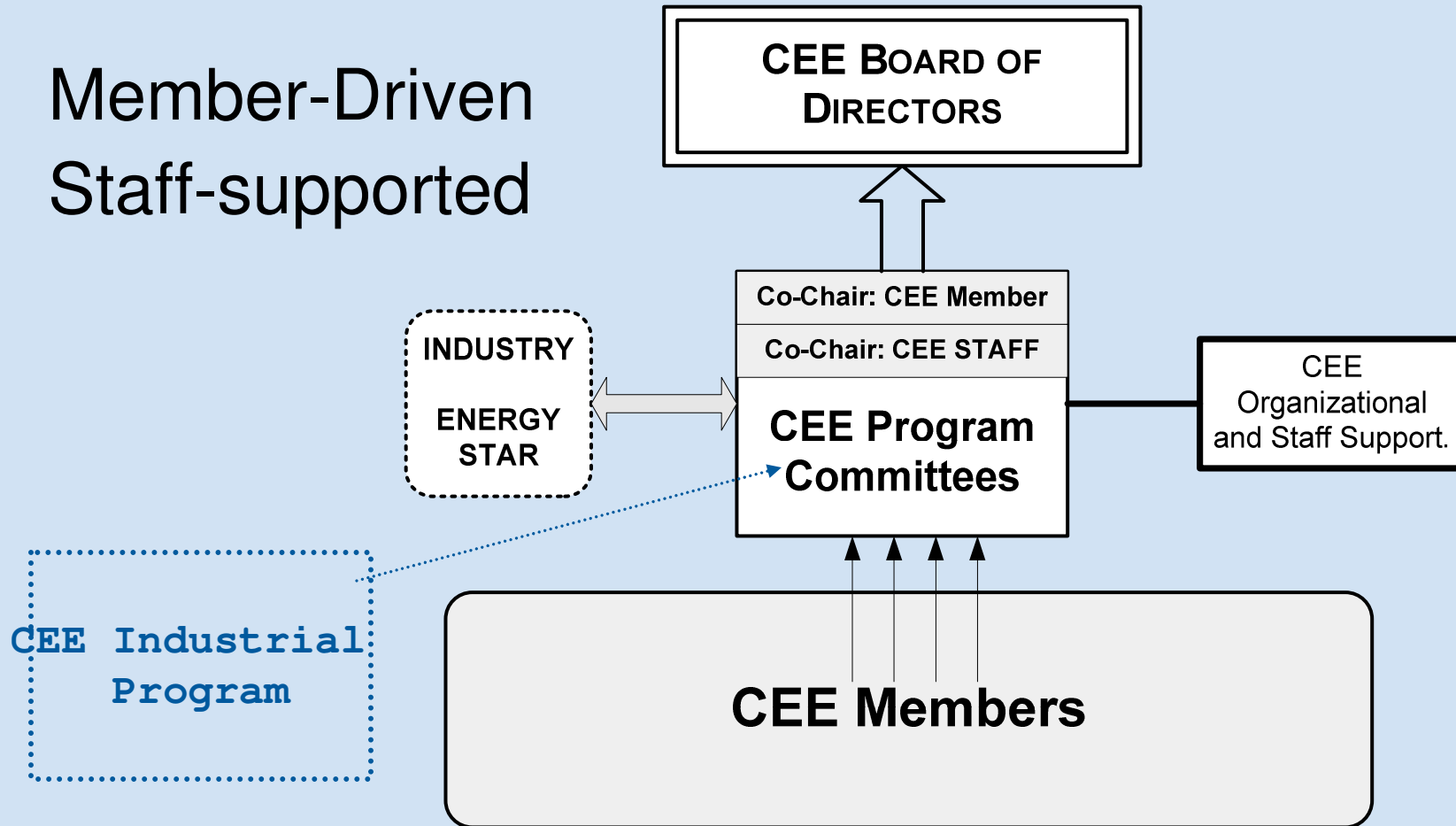
- Define Opportunities
  - Early Retirement/Replacement
  - Motor System Optimization
- Outline Approach
  - Efficiency Program Offering
  - MDM Campaign: Partnerships, Messaging, Tools
- Identify Next Steps

# Energy Efficiency Budgets: 2007-8



# How CEE Makes Decisions

Member-Driven  
Staff-supported



# CEE Industrial Program Services

- Voluntary Specifications
- Joint Branding & Campaigns
- Market Based Approaches
- Forum for Program Practices
- Energy Mgmt. & Benchmarking
- Strategic Partnerships



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# CEE Premium Efficient Motors Initiative

The logo for NEMA Premium, featuring the word "NEMA" in a large, bold, black sans-serif font above the word "Premium" in a smaller, bold, black sans-serif font. The word "Premium" is set against a white rectangular background with a black border. A small trademark symbol (TM) is located to the upper right of the word "Premium".

- Launched in 1996
- Aligned with NEMA Premium<sup>®</sup> in 2001
  - For motors covered under EPCACT
  - 1 – 200 HP, Low-voltage, General-purpose
- Guidance Specification for 250-500HP
  - General recommendations
  - Operating and application information

# CEE Premium Efficiency Motors Initiative Approach

- Prescriptive programs for motor purchase
  - NEMA Premium/CEE Specification efficiency
  - Majority offer programs for 1-200 hp motors
  - Custom programs for larger motors
  - “Door opener” to greater savings opportunities



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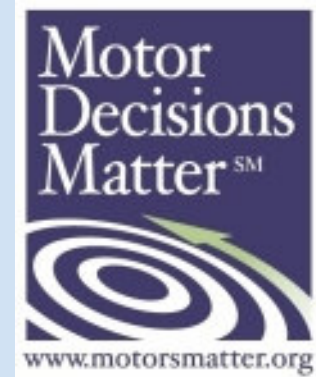
# CEE Motor Systems Initiative

- Launched in 1999
- Focus on marketing motor systems opportunities
- Research approaches to deliver tools and resources
- Demonstrate the savings potential of motor systems optimization via pilots

# Motor Systems Approach

- Custom programs for motor systems
  - Research
  - Tool Development & Marketing (MDM)
  - Training (DOE)
  - Benchmarking (Water/Wastewater)
  - Sector Focused:
    - Food Processing, Forest Products, Water/Wastewater

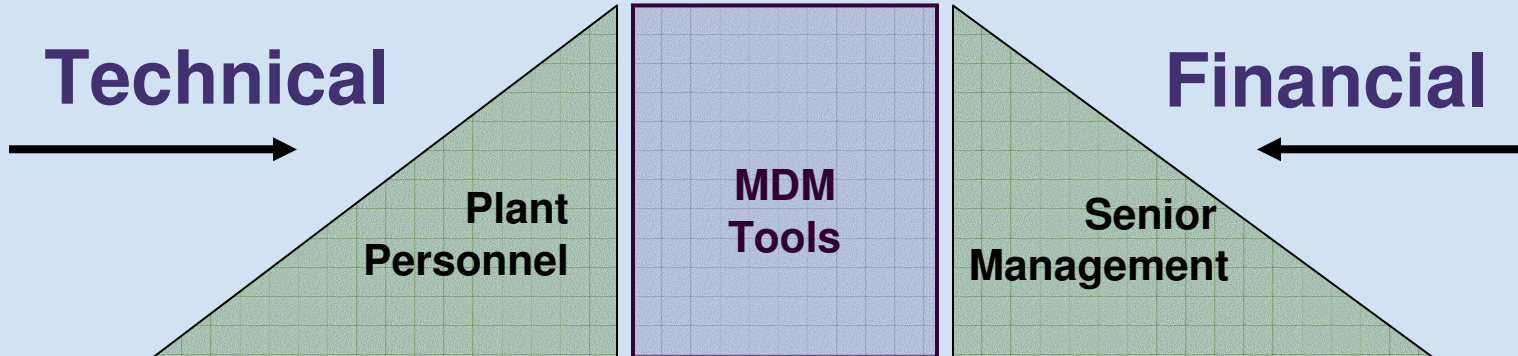
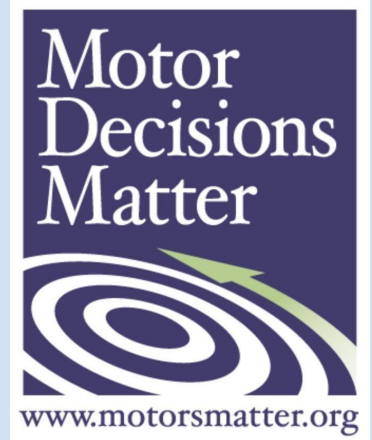
# Motor Management: Motor Decisions Matter<sup>SM</sup>



- A national campaign designed to improve the way industrial motor repair/replace decisions are made by promoting the financial and performance benefits of sound motor management policies
  - Increase awareness of motor management opportunities
  - Increase demand for NEMA Premium<sup>TM</sup> motors & best practice motor repair
  - Encourage the market to engage in motor planning
- Collaborate nationally to enhance local effectiveness

# MDM Approach

To promote **proactive** motor management to both facility and senior-level managers.



# Efficiency Program Coordination

**Regional:** multi state collaborative effort

**Statewide:** IOU's mandatory participation;  
municipals may opt out; state energy  
offices

**Utility:** individual utility programs operating  
within a service territory

**Municipal:** individual municipal programs



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# Efficiency Program Designs

- **Prescriptive** (rebates)
  - Customer (downstream)
  - Vendor (upstream)
- **Standard Performance Contract**
  - Third party
  - Open ended
  - Must demonstrate savings
- **Custom** (by project)
  - Retrofit; Renovation
- **Education/Awareness**
- **Financial Assistance**
  - grants
  - loan fund
- **New Construction**
  - New construction
  - Major rehab or expansion
- **Technical Assistance**
  - energy audits
  - feasibility studies
  - design assistance
- **Other**

# Preliminary 2008 CEE Member Profile

<b>Program Profile</b>	<b>Member Programs</b>
<b>Overall CEE Members</b>	103
<b>Total Motors &amp; Motor Systems</b>	56
<b>Motors (prescriptive)</b>	40
<b>Upstream (vendor)</b>	18
<b>Downstream (end user)</b>	40
<b>Drives</b>	32
<b>Compressed Air Systems</b>	30
<b>Pump Systems</b>	16
<b>Fan Systems</b>	4



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# What's Changing

- Market

- Greater motor product availability
- Increasing demand for NEMA Premium<sup>®</sup> motors
- “Green” as a marketing platform
- Increasing energy prices

- Programs

- Increasing budget for efficiency
- Growing number of programs
- Higher energy savings goals
- Broader scope:
  - System
  - Sector
  - Energy Management

# New Program Development

- Program Design: Quantifying the Opportunity
  - Savings potential (local, regional, national)
  - Incremental cost, incremental benefit
  - Industry accepted test procedure
  - Efficiency measure life and reliability
  - Can a baseline be established?
  - Can impacts be measured and verified?
- Program Implementation
  - Delivery channel
  - Partnerships, market factors
  - Ongoing reporting requirements

# CEE Member Perspective

CEE Member Panel



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# Motor & Motor Systems Committee: Potential New Program Options

- Enhanced Performance Specification
- Adjustable Speed Drives (ASDs)
- Best Practice Repair
- Motor Management: early retire/replace
- Motor System Optimization
- Voluntary Specifications for other motors (e.g. U-frame motors, Design C motors, etc.)

# Opportunities for Motor System Optimization

*Presentation by*  
John Malinowski  
Product Manager  
Baldor Electric Company



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# Session 1 Wrap up

Session evaluation form

Lunch 12:30 p.m. – 2:00 p.m.

M&MS Session 2: Extending Our Partnership to  
Capture Additional Savings

CEE Staff contact: Kellem Emanuele

[kemanuele@cee1.org](mailto:kemanuele@cee1.org) or 617-589-3949 ext. 225



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# **Industrial Motors Breakout Session: Extending Our Partnership to Capture Additional Savings**

Motors & Motor Systems Breakout Sessions  
CEE Industry Partners Meeting  
October 16, 2008  
2:00 p.m. – 4:00 pm



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# Opportunity for Early Retirement/Replacement

*Presentation by*

Rob Boteler

Director of Marketing Services

Emerson Motors



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# Afternoon Session Agenda: Developing the Opportunities

- Define Opportunities
  - Early Retirement/Replacement
  - Motor System Optimization
- Outline Strategic Action
  - Efficiency Program Offering
  - MDM Campaign: Partnerships, Messaging, Tools
- Identify Next Steps

# Early Retire/Replace: Prescriptive Opportunity?

Motor and VFD equipment/project rebate information

## A. NEW MOTOR APPLICATION

En Use**	Manufacturer	Motor Type (Open or Closed)	RPM	Model #	Nominal Efficiency %	HP	Xcel Energy Rebate Value	Qty (Each)	Total Xcel Energy Rebate
*1							\$4.00		
2							\$4.00		
3							\$4.00		
4							\$4.00		
5							\$4.00		
6							\$4.00		
7							\$4.00		
						<b>Total HP</b>		<b>Total Rebate \$</b>	

Please mark invoices with row number to ensure that rebate application matches the equipment description and rebate to the correct invoice.

## B. MOTOR UPGRADE (REPLACING AN OPERATING MOTOR)

En Use**	Manufacturer	Motor Type (Open or Closed)	RPM	Model #	Nominal Efficiency %	HP	Xcel Energy Rebate Value	Qty (Each)	Total Xcel Energy Rebate
8							\$10.00		
9							\$10.00		
10							\$10.00		
11							\$10.00		



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# Existing Resources & Tools To Facilitate Motor System Optimization and Early Retire/Replace



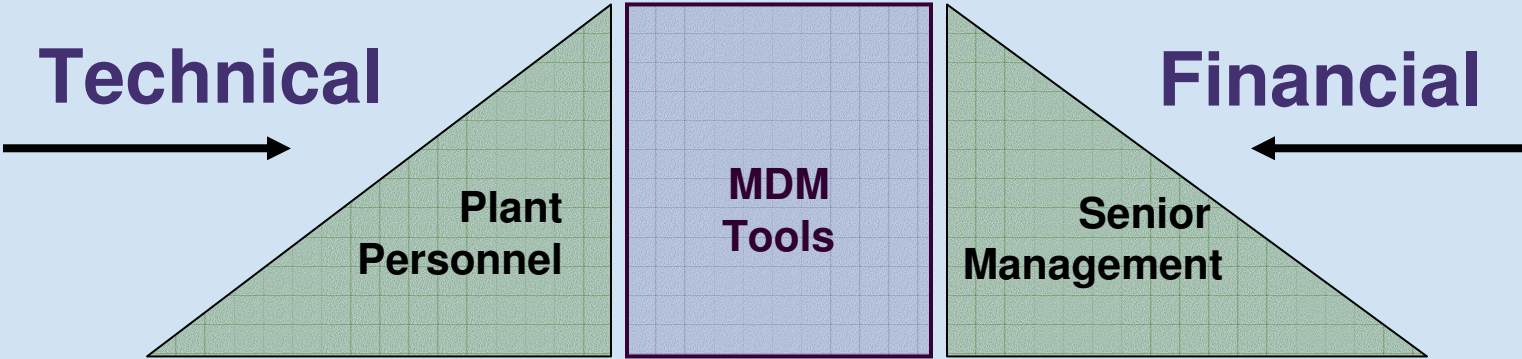
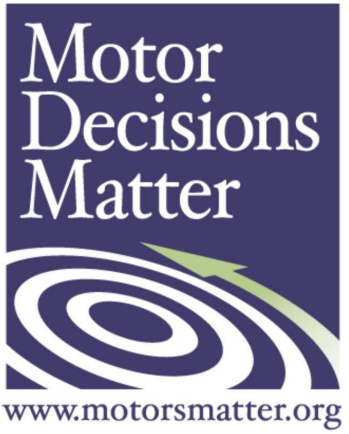
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# Pursuing Motor System Optimization & Early Retire/Replace: Existing Resources

- DOE Sourcebook: *Improving Motor & Drive System Performance*, Sept. 2008
- Existing Prescriptive Program Structure
  - Successes & lessons learned
  - ASDs/VFDs
- Multi-perspective Partnerships:
  - Efficiency programs
  - Sales & service centers
  - Motor manufacturers
  - Trade Associations & government agencies

# Speak the Right Language

To promote **proactive** motor management to both facility and senior-level managers.



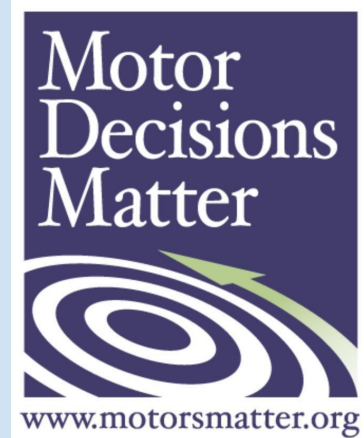
# MDM Tools & Resources

## MDM Tools

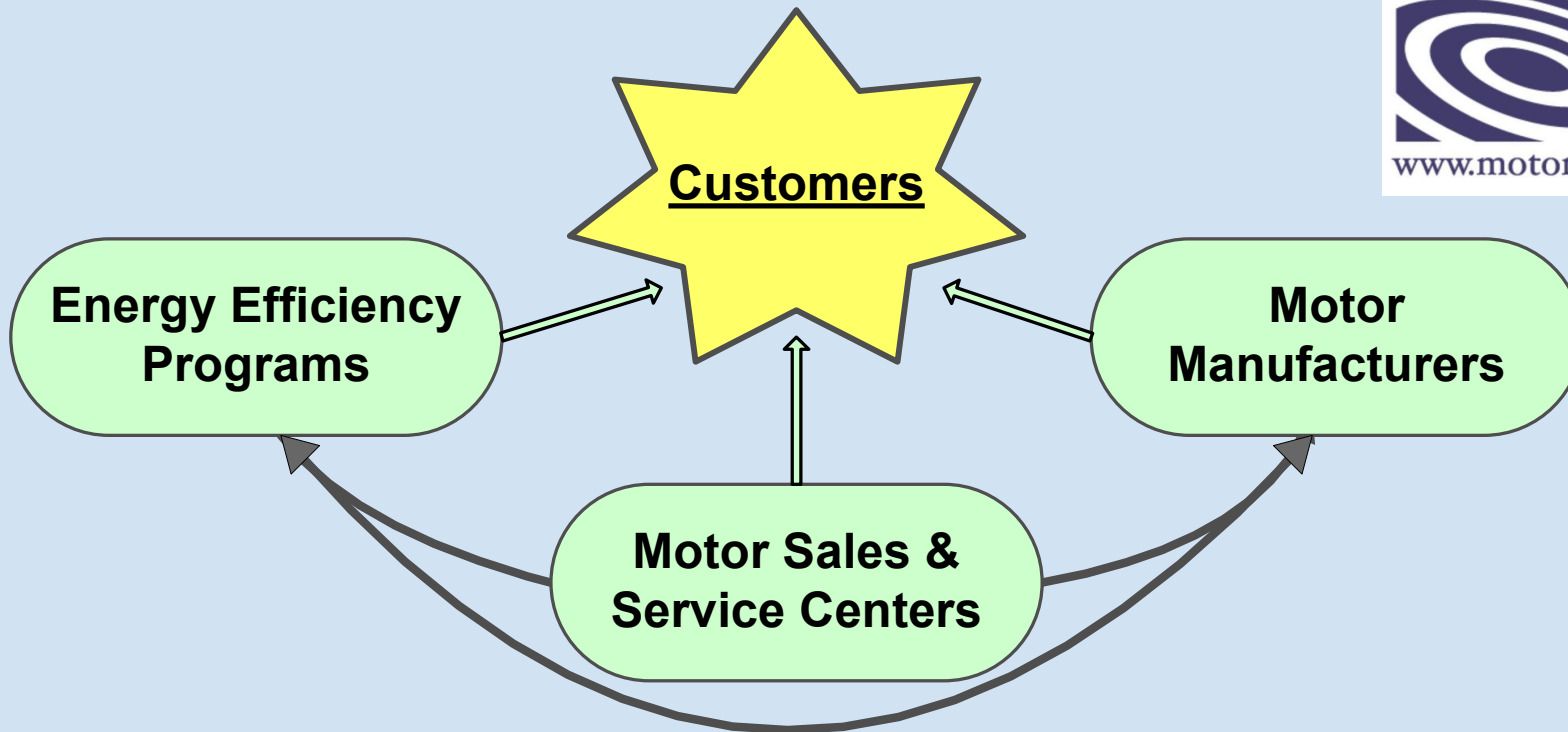
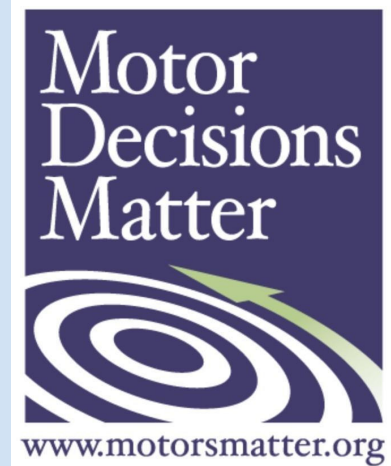
- Motor Management How-to Guide
- Motor Planning Kit
- MotorSlide Calculator, Simple Savings Chart
- 1\*2\*3 User's Guide & Spreadsheet

## MDM Resources

- MDM Website: Campaign Hub
- Events: Spotlight Calls, Webcasts
- Highlight other relevant materials: DOE, EPA



# Diverse Perspectives



*Unified message adds credibility*

# MDM in Practice: Program

The screenshot shows a web browser window displaying the MidAmerican Energy website. The address bar shows the URL <http://www.midamericanenergy.com/html/energy6g.asp>. The website features a navigation menu with options like 'For Your Home', 'For Your Business', 'Safety', 'Rates', 'Energy Efficiency', 'Economic Development', and 'Environmental Efforts'. The MidAmerican Energy logo is prominently displayed with the tagline 'OBSESSIVELY, RELENTLESSLY AT YOUR SERVICE.' Below the logo, there is a secondary navigation menu with 'About Us', 'Careers', 'News Room', 'Storm Center', 'Wind Energy', and 'Contact'. The main content area is titled 'energy efficiency iowa' and features a 'Save some green' logo. The primary heading is 'EnergyAdvantage® For Your Business Motors and Variable Speed Drives'. The text describes the program's incentives for commercial and industrial customers in Iowa, highlighting the benefits of NEMA Premium® efficient motors and variable speed drives. It provides links to [www.motorsmatter.org](http://www.motorsmatter.org) and [www.nema.org/gov/energy/efficiency/premium](http://www.nema.org/gov/energy/efficiency/premium) for more information. A section titled 'Brochure and Application Form' explains how to obtain the program's materials. The page also includes logos for 'Motor Decisions Matter' and 'NEMA Premium'. A sidebar on the left lists various energy efficiency programs such as 'Lighting Equipment Program', 'Heating and Cooling Equipment Program', and 'Commercial Kitchen Equipment Program'.

Iowa  
Energy-Saving Ideas  
Energy-Savings Packet  
EnergyAdvantage® For Your Home  
Energy Efficiency World  
EnergyAdvantage® For Your Business  
Overview  
Nonresidential Rebates  
Lighting Equipment Program  
Heating and Cooling Equipment Program  
**Motors & Variable Speed Drives**  
Commercial Kitchen Equipment Program  
Nonresidential Insulation Program  
Custom Systems  
Commercial New Construction  
BusinessCheck®  
Nonresidential Energy Analysis

energy efficiency iowa

Save some green

**EnergyAdvantage® For Your Business  
Motors and Variable Speed Drives**

The Motors and Variable Speed Drives program offers our commercial and industrial customers in **Iowa** incentives for installation of energy-efficient motors and/or variable speed drive equipment. There are simple dollars-and-cents reasons to utilize the program. In general, NEMA Premium® efficient motors are 2-8 percent more efficient than standard motors. Adding a variable speed drive to a NEMA premium efficient motor in an appropriate application saves even more because the motor then consumes less energy when load requirements are less than full speed. Qualifying equipment is eligible for financial incentives in the form of cash or below-prime financing (prime rate minus 1 percent).

For additional resources regarding motor systems management, visit [www.motorsmatter.org](http://www.motorsmatter.org). For detailed motor efficiency information, visit [www.nema.org/gov/energy/efficiency/premium](http://www.nema.org/gov/energy/efficiency/premium).

**Brochure and Application Form**  
Learn how adding flexibility to production processes can make a big difference in operational efficiency by reviewing a [full brochure](#) of our Motors and Variable Speed Drives program. Complete and print our [application form](#) to apply for a rebate if you're planning a purchase of qualifying equipment or if you've recently purchased qualifying equipment.

To view the form, you must have Adobe Acrobat Reader on your hard drive. Download a free copy of Acrobat Reader by visiting the [Adobe Download Site](#).

**Any questions?**  
Just call our representative at **800-894-9599**.

MIDAMERICAN  
**ENERGY  
ADVANTAGE.**

Motor Decisions Matter  
[www.motorsmatter.org](http://www.motorsmatter.org)  
**NEMA  
Premium**



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# MDM in Practice: EASA Member




The screenshot shows a web browser window with the URL <http://www.teamsesco.com/links/links.html>. The browser's address bar and tabs are visible. The website content includes:

- TEAM SESCO INDUSTRIAL TECHNOLOGY SERVICES** logo featuring three workers.
- GREENSBORO SUPER SERVICE CENTER** (Electronic Service . Automation Systems) at 7101 Cessna Drive, Greensboro, NC 27409 • 336-662-0646.
- CHARLOTTE SUPER SERVICE CENTER** (Electro-Mechanical Services for Motors . Hoists . Fluid Power) at 2225 Freedom Drive, Charlotte, NC 28208 • 704-372-4832.
- Service categories: ELECTRONIC SERVICE, FLUID POWER SERVICE, AUTOMATION SYSTEMS, MOTOR SERVICE, HOIST SERVICE.
- Navigation menu: HOME, NEWSLETTER, OUR TESTIMONY, LINKS, CONTACT US, LOG IN.
- Partner logos and descriptions:
  - RELIANCE ELECTRIC**: Electric Motors, Drives, and Controls.
  - BALDOR MOTORS AND DRIVES**: Industry Leading Motors and Controls.
  - COFFING HOISTS**: High Performance Lifting.
  - CM**: Industry Standard Hoists and other material handling products.
  - Motor Decisions Matter**: National campaign encouraging the use of sound motor management and planning.
  - LAFERT NORTH AMERICA**: High Efficiency Metric Motors.



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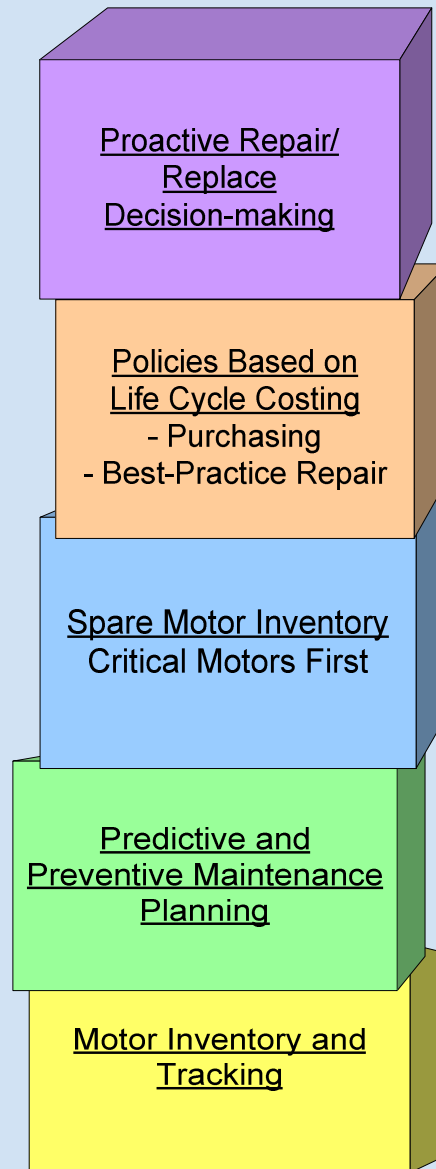
# MDM in Practice: Motor Manufacturer

The screenshot shows a web browser window with the address bar displaying <http://www.leeson.com/links.html>. The browser's address bar also shows several tabs, including 'Most Visited', 'MDM', 'Google', 'Webtrends', 'Get Bookmark Add-ons', and 'Google Calendar'. The website header features the **LEESON.COM** logo and the text 'ELECTRIC MOTORS GEARMOTORS AND DRIVES'. A search bar is located in the top right corner with the text 'Find-A-Product' and a 'Search' button. Below the header is a navigation menu with the following items: **Products**, **How to Buy**, **Service & Support**, **Literature**, and **Contact Us**. The main content area is titled 'HOME > Links & Downloads'. On the left side, there is a vertical menu with the following links: [About LEESON](#), [Career Opportunities](#), [News & Events](#), and [Links & Downloads](#). The 'Links & Downloads' section is titled 'LEESON Links:' and contains three entries: 1.  [EASA](#), the Electrical Apparatus Service Association, Inc. 2.  [NEMA Premium™](#), the National Electrical Manufacturers Association. 3.  [Motor Decisions Matter](#)



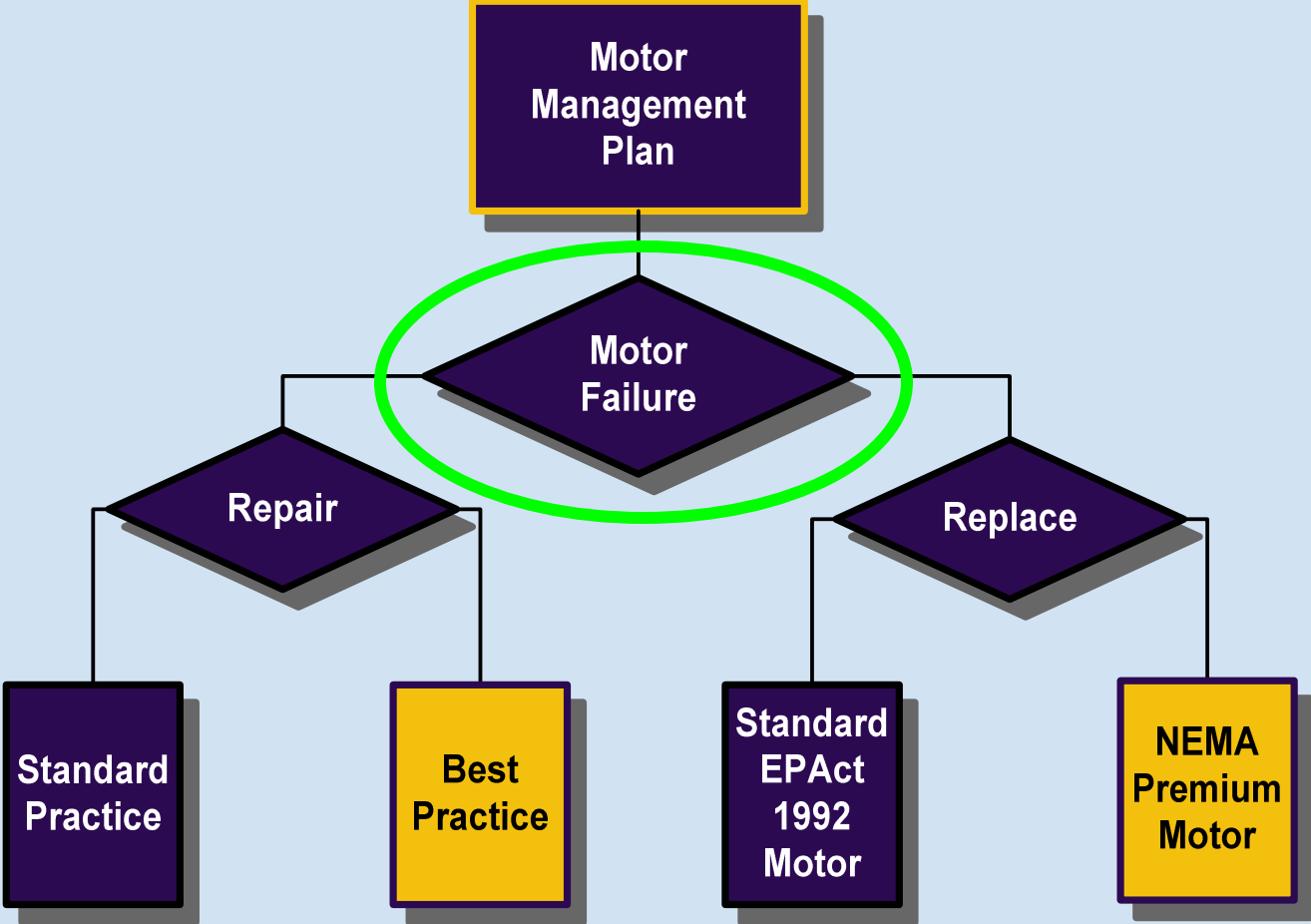
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**The  
building  
blocks...**

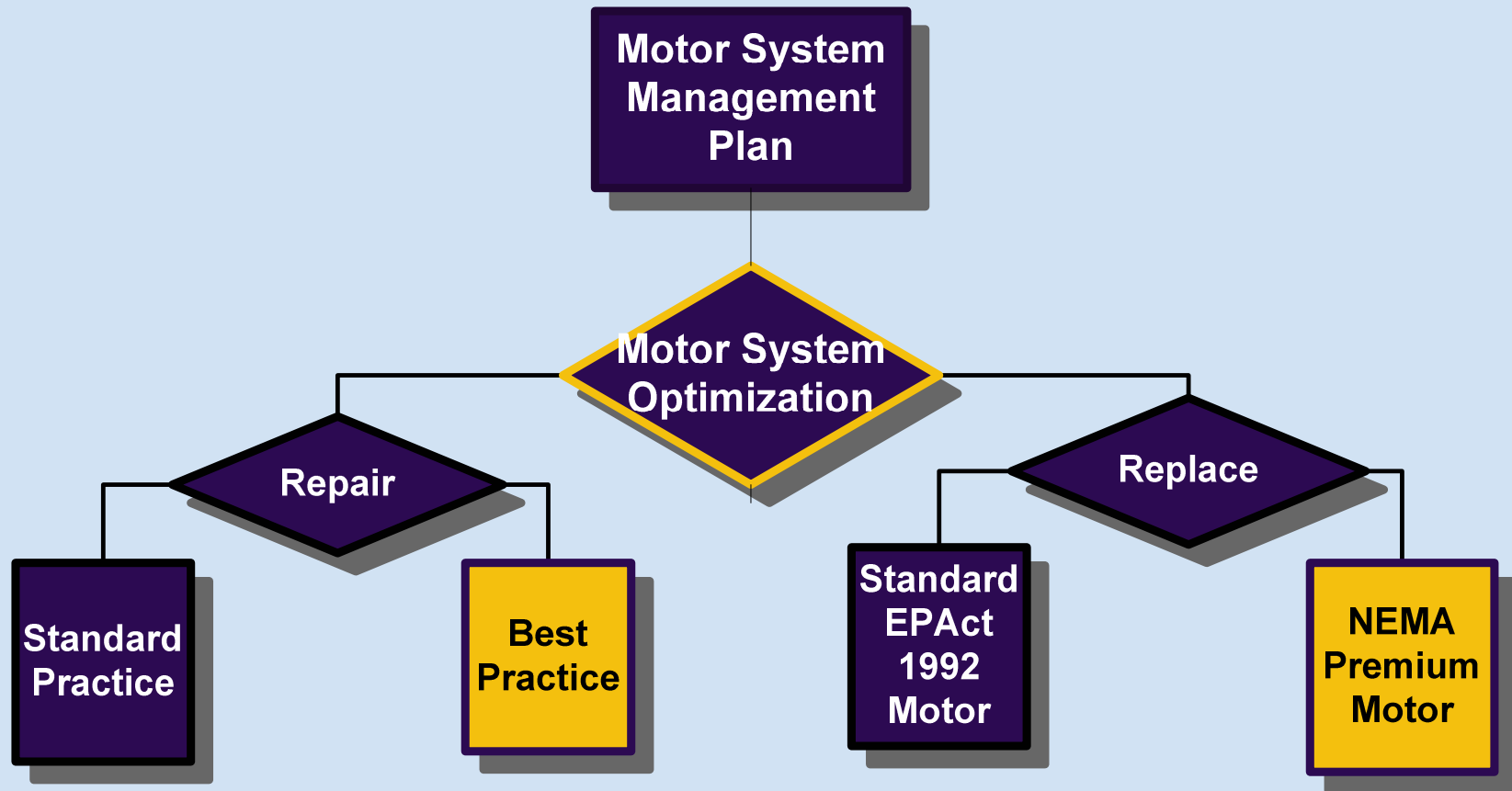


**...of a motor  
management  
plan.**

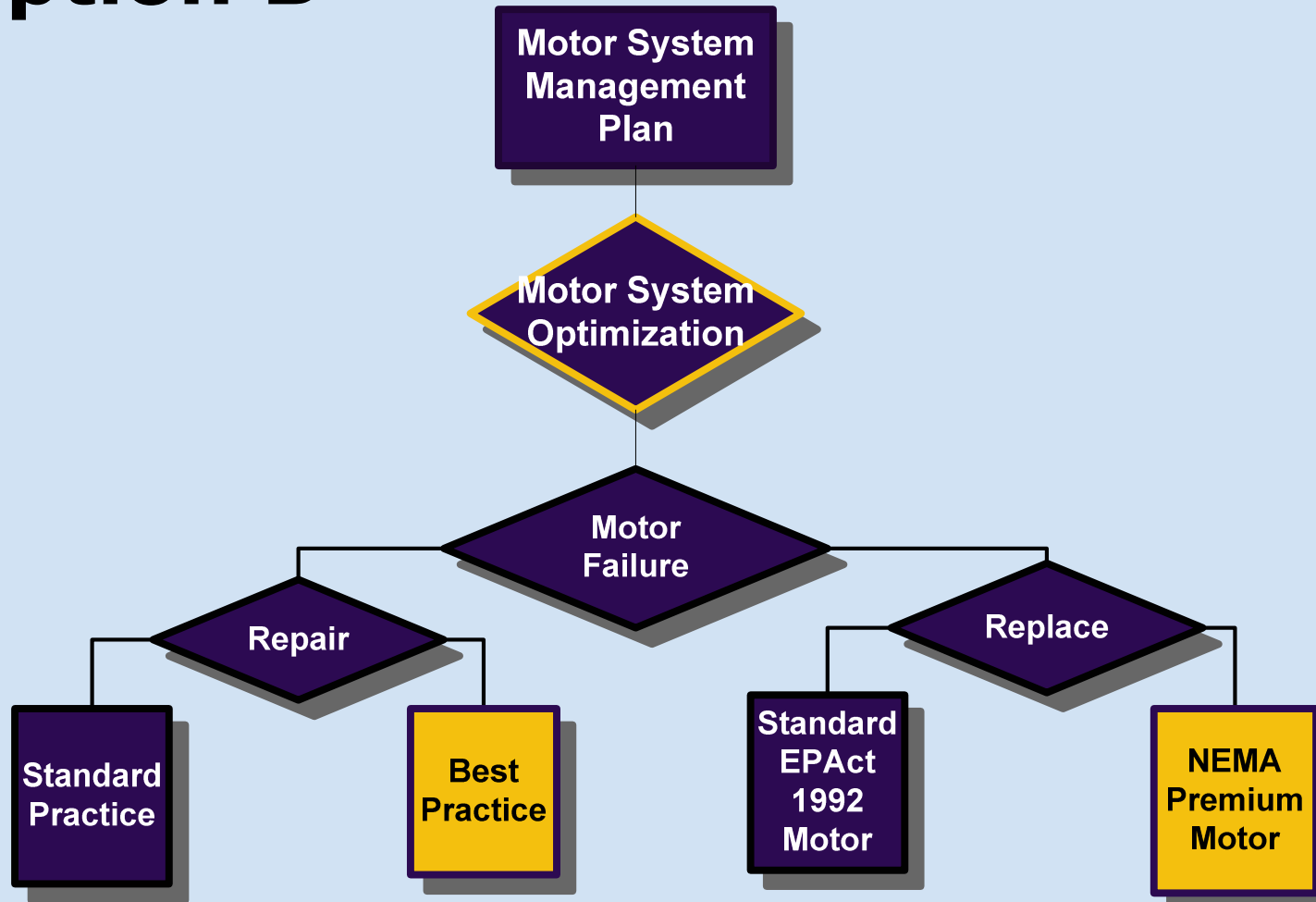
# Current MDM Framework



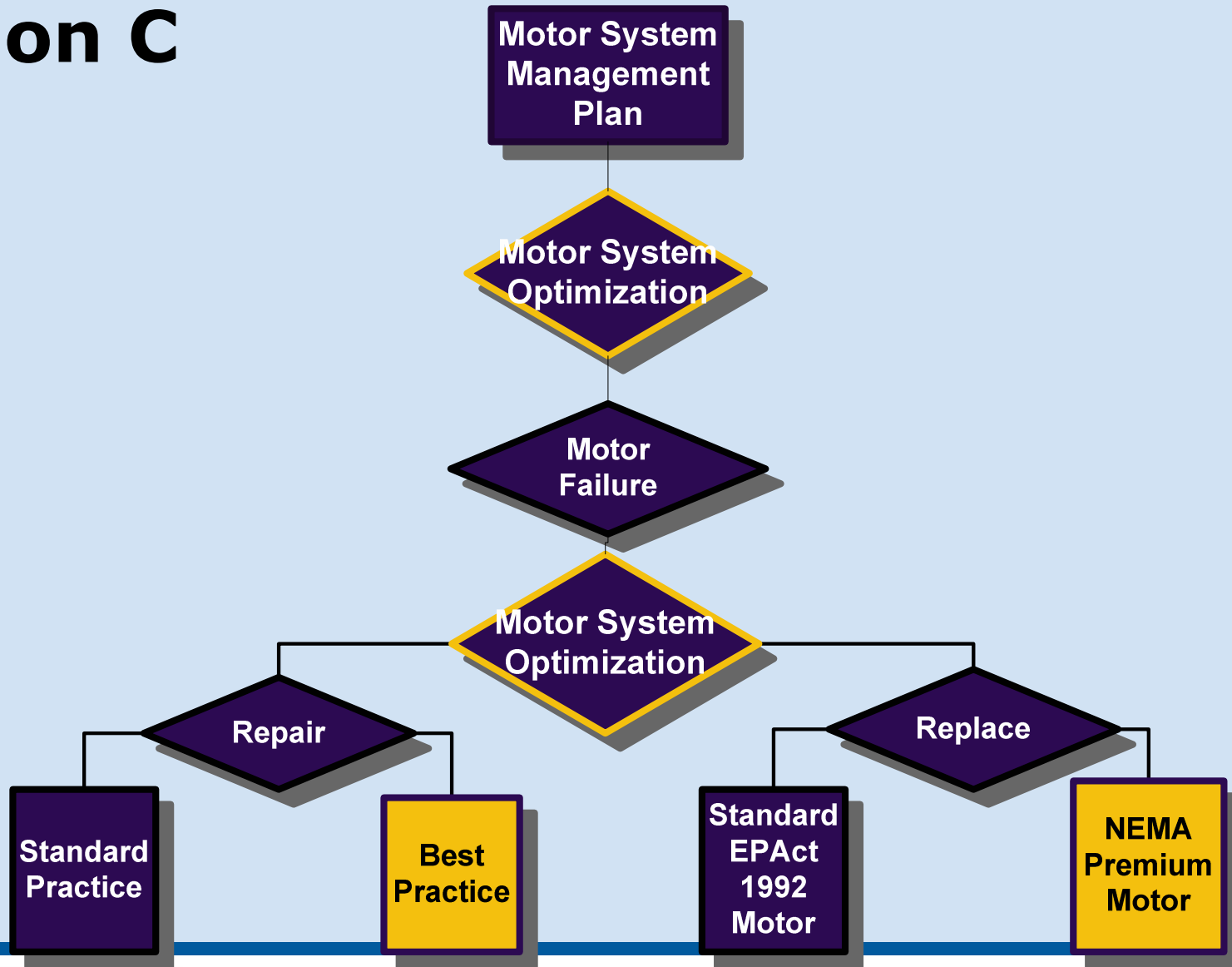
# Option A



# Option B



# Option C



# Questions, Thoughts, Feedback

CEE Staff contact: Kellem Emanuele

[kemanuele@cee1.org](mailto:kemanuele@cee1.org) or 617-589-3949 ext. 225



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