

## Moving Forward with Motors

**Revising CEE'S  
Premium-Efficiency  
Motors Initiative**



***Motor Decisions Matter<sup>SM</sup>*  
Phase 3  
Priscilla Richards, NYSERDA**



CEE Program Meeting, January 2007, Long Beach, CA



Working Together, Advancing Efficiency

## Moving Forward with...

**Revising CEE'S  
Premium-Efficiency  
Motors Initiative**



**Ilene Mason, Industrial Program Manager**



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## The Current Premium-Efficiency Motors Initiative

- Launched in 1996.
- Based on EPC Act 1992 scope of motors:
  - 1-200 hp, low-voltage, general-purpose, single-speed, poly-phase, 2,4, and 6 pole, squirrel cage, induction, NEMA design A or B, continuous-rated motors.
- Forty-six participants in 2006.
  - Majority offer prescriptive programs for 1-200 hp motors.



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## Scope of Covered Products

### CEE Specification

- 1 – 200 Hp
- Low-voltage
- General-purpose

### NEMA Premium™ Specification

- 1-200 Hp
- Low-voltage
- General- purpose
- PLUS----
- 250 – 500 Hp
- Medium-voltage
- Special & definite purpose



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## Background

- Early Discussion.....Jan 05
- Developed research plan for MM+ database.....May 05
- Analysis of results presented to Committee.....Dec 05
- Committee recommended approach.....July 06
- Guidance Specification drafted and ready for final review by committee, industry and others.....current status



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## Potential Savings Opportunity

According to DOE's *United States Industrial Motor Systems Market Opportunities Assessment*, 1998:

- Low percentage of installed products - high percentage of energy consumed.
- Older motors kept in operation for many years.
- Long average operating hours.



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## Examples

350 hp motor, Pre-Epact 1992, 1800 RPM, TEFC motor; 6100 hrs/yr

Replacing with NEMA Premium™

- efficiency gain = approx. 1.64%
- Energy savings = approx. 28,800 kwh/yr

500 hp motor, Pre-Epact 1992, 1800 RPM, TEFC motor; 6100 hrs/yr

Replacing with NEMA Premium™

- efficiency gain = approx. 1.34%
- Energy savings = approx. 33,400 kwh/yr



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## Developing a Recommendation

- Significant energy savings potential.
- Products available.
- Opportunity to leverage manufacturer commitment and promotional efforts.  
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- Often application specific and custom ordered. NEMA Premium™ motors are not always the most cost-effective choice.
- Savings projections sensitive to variations in operating parameters.
- Costly to purchase (\$25,000 - \$45,000 list price) and to operate.
- Difficult to identify typical operating conditions or a nationally applicable baseline as applications and operating conditions vary widely.



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## The Recommendation for Large Motors

Encourages program administrators to:

- follow a **custom** approach for 250-500 hp, low-voltage, general-purpose motors,
- consider NEMA Premium-Efficiency™ levels, and
- incorporate NEMA Premium terminology into their programs.

By adding a “Guidance Specification for Large (250-500 hp), Low-voltage, General-purpose Motors” as a separate (voluntary) component of the initiative.



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## Benefit for Programs

- Identify the highest performance level that is economically feasible for an application.
- Increase customer and vendor confidence in their savings potential.
- Raise customer awareness about the existence of NEMA Premium™ products.
- Simplify promotional and educational efforts by referencing the NEMA Premium™ brand.
- Leverage other promotional efforts including the Motor Decisions Matter<sup>SM</sup> Campaign and its sponsors.



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## Next Steps

Large, Low-Voltage, General Purpose Motors

- Send *Guidance Specification* to industry and others for comment.
- Revise Initiative Description as appropriate.
- Present revised Initiative for Board approval.

Consider additional NEMA Premium-covered Products

- Medium voltage motors.
- Special and definite purpose motors.

Explore member interest in other areas such as high-speed motors, fractional hp motors, higher performance tier.



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## Moving Forward with...

### Motor Decisions Matter<sup>SM</sup> Phase 3



Priscilla Richards, Senior Project Manager, NYSERDA



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## **Moving Forward with Motors**

### *Motor Decisions Matter<sup>SM</sup> Campaign Phase 3*

Priscilla Richards, NYSERDA  
CEE Program Meeting  
January 17, 2007 Long Beach, CA

13

## **Motor Decisions Matter<sup>SM</sup> A National Awareness Campaign**

- Increase industrial facility managers' awareness of motor management opportunities
- Increase demand for NEMA Premium<sup>TM</sup> motors & best practice motor repair
- Encourage customers to engage in motor planning



14

## MDM Phase 2 Sponsors

### Motor Manufacturers

- ABB Inc.
- A.O. Smith Electrical Products Company
- Baldor Electric
- Emerson Motors
- GE Industrial Systems
- Regal-Beloit Corporation
- Rockwell Automation / Reliance Electric
- Siemens Energy & Automation
- TECO-Westinghouse Motor Company
- Toshiba International
- WEG Electric Motor Corporation

### Trade Associations

- Copper Development Association Inc
- Electrical Apparatus Service Association
- National Electrical Manufacturers Association

### Efficiency Program Administrators

- Advanced Energy
- Alliant Energy
- BC Hydro
- ComEd, a division of Exelon Corporation
- Long Island Power Authority
- MidAmerican Energy Company
- National Grid USA
- NY State Energy Research & Dev Authority
- Northwest Energy Efficiency Alliance
- NSTAR Electric & Gas
- Pacific Gas & Electric
- Sacramento Municipal Utility District
- Southern California Edison
- Wisconsin Department of Administration
- Xcel Energy

### Supporting Organizations

- Consortium for Energy Efficiency
- U.S. Department of Energy

15

## Motor Decisions Matter<sup>SM</sup> Status

- Proven value in concepts
- Strong tools and identity
- Networking and industry relationships
- Integration of motor management challenging



16

## Phase 3 Planning Process

- December 2005, the Board authorized staff to work collaboratively with MDM Sponsors to develop a Phase 3 Business Plan.
- January - June 2006, Completed two evaluations to help formulate future direction.
- July – September 2006, convened the Phase 3 Planning Committee and developed a business plan.
- October 2006, Sponsors unanimously endorsed the proposal at the biannual sponsor meeting.
- January 2007, Phase 3 Business Plan to be presented to CEE Board for final approval

17

## Phase 3 Campaign Overview

- Key components
  - Continue networking capability of the campaign
  - Support sponsors that are integrating motor management concepts into their programs
  - Make national resources available at the local level
- Strengthening communications channels
- Critical for sponsors to engage in motor management activities

18

## Phase 3 Campaign Activities

- Information Sharing Conference Calls
- Regional workshops
- Media placements in trade press
- Improved website

19

## Campaign Value to NYSERDA

- Common Voice
- Good Tools
- Ability to focus on higher-use motors
- Increase in trust in vendor/customer relationship
- Increase in customer awareness of efficiency opportunities

20

## New York Energy Smart Results

- 65 Motor Inventories, 6750 motors
  - 12% retrofit, 50% replacement to NEMA Premium™
- Ability to focus on higher-use motors
- Increase in trust in vendor/customer relationship
- Increase in customer awareness of efficiency opportunities

21

## Promoting Motor Management to C&I Customers

Priscilla Richards, NYSERDA  
Ed Evans, APT

Breakout Session 3:30-5:00  
Atlantic I – 2nd floor

22