



Interstate Power & Light Premium Efficiency Motors Study

CEE's Summer Program Meeting
Boston, MA
June 14-15, 2006

1

Iowa State University

- Study conducted by Iowa State University – Center for Industrial Research and Service (CIRAS)
 - “To enhance the performance of Iowa Industry through education and technology-based service.”



www.ciras.iastate.edu



2



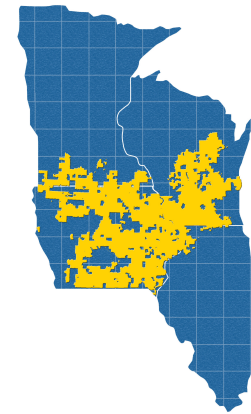
Alliant Energy – Background

- Alliant Energy is an investor-owned utility, formed in 1998 from the merger of three Midwestern utility companies.
- Interstate Power & Light (IPL) serves approximately 453,000 electric and 180,000 natural gas customers in Iowa, Illinois and Minnesota.
- Wisconsin Power and Light (WPL) serves approximately 442,000 electric and 173,000 natural gas customers in Wisconsin.



3

Service Territory



4

Interstate Power & Light (IPL)

- The Premium Efficiency Motor Study was conducted in the state of Iowa where IPL administers the energy efficiency programs.

- Iowa 2006 Energy Efficiency Goals:

	kW goal	kWh goal
Residential	6,696	15,169,600
Non-Residential	14,658	59,800,000
Agriculture	460	2,100,000
Low Income	212	972,000
TOTAL	22,026	78,041,600

Reaching the Efficiency Program Goals

Four main energy efficiency programs available to commercial and industrial customers:

- 1) Standard (prescriptive) Rebates – Specific cash rebate amounts offered for the purchase and installation of specific high-efficiency equipment.
- 2) Custom Rebates – Cash rebates for energy efficient technologies outside of the prescriptive rebate program. The savings is calculated individually, per project.
- 3) Performance Contracting – A financing program enabling customers to pay for the project with the actual energy savings achieved.
- 4) New Construction – A program that incorporates energy efficiency into a new building with free energy design assistance, design team incentives, and construction incentives.

Study Goals

- Estimate the potential energy savings
- Understand the motor usage practices and purchasing of PEMs
- Based on results re-analyze current IPL programs

Study Results

- Data analysis revealed savings in the range of 36 to 108 GWh/yr.
 - If current motors usage is predominately high-efficiency motors, the savings would be closer to 36 GWh/yr.
 - If current motors usage is predominately standard motors, the savings could reach 108 GWh/yr.

Savings from Standard to:		
EPAct, GWh/yr	PEM, GWh/yr	Range, GWh/yr
71	108	36 to 108

Study Details

- Two survey groups:
 - Customers of IPL
 - Motor distributors
- 1997 Motor Systems Practices Survey relationship
- Top of mind to industrial consumers:
 - Capital cost, turn-around time, availability – 75%
 - Reliability of the motor – 42%
 - Installation cost – 19%
 - Utility rebates – 17%
 - Cost of electricity – 15%

Survey Conclusions

- 1) **Rewinding** – common practice
- 2) **Decision making factors** – capital cost and turn-around time
- 3) **Change-out rates** – approximately 11% which could significantly limit progress toward increasing the percentage of PEMs and EPart compliant motor usage in Iowa.
- 4) **Discrepancy of motors sold and motors purchased** – Customers claimed to have purchased PEMs at a higher rate than distributors reported selling them.
- 5) **Energy savings with large motors** – Clients may be ill informed about the advantages of replacing large motors with PEMs. Motors larger than 20 hp account for 85% of the energy consumed by motors in manufacturing. Data indicates large motors are rewound at a significant rate, and they are less likely to be replaced with a PEM.



Future IPL Program Plans

- Huge savings potential.
- Program plans target the top barriers for purchasing PEMs
 - Capitol cost
 - Turn-around time
- Education of IPL Account Managers and Customers is key:
 - IPL is working with MidAmerican Energy and the Center for Industrial Research and Service (CIRAS) to develop a state-wide educational program.
- IPL is considering a financial incentive to distributors to increase availability of PEMs.

Looking forward to discussion and feedback tomorrow.



11

Contact

Nicole Healey

Alliant Energy

(319) 786-7237

NicoleHealey@alliantenergy.com

Alex Kisslinger

Iowa State University

(515) 294-1588

alexkr@iastate.edu



12