Metering: The Eyes and Ears of O&M Part 2

Where Do I Start?

ENERGY 2003

O&M for Energy Efficiency

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Session 3: August 19, 2003

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Platts Research & Consulting

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E SOURCE Services

- Platts, a division of The McGraw Hill Cos.
- Membership based energy information company
- Unbiased research and analysis
- Serve all parts of energy market including utilities and top tier energy managers

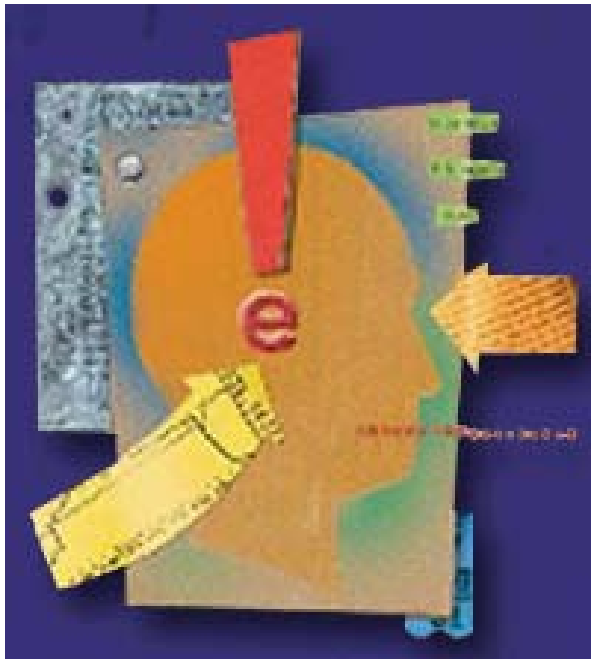
The E SOURCE Member "Network"

Over 400 organizations around the world

Major
Energy Users

Electric & Gas
Utilities

Energy Service
Companies



International
Organizations

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Selected E SOURCE Members

Energy Service Providers

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Progress Energy
Orlando Utilities Commission
Southern Company
Xcel Energy

Major Energy Users

Air Force, Navy, Army, Coast Guard, FEMP
AT&T
Ball Aerospace
Boeing
Johnson & Johnson
Lockheed Martin
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What Large End Users Want: Energy Information Services

- "It is absolutely essential to obtain from the utility/ESP that I get my energy commodity from, an interval data product that I can use to verify bills"
- "Easier access to metering historical data and the ability to easily connect to the utility meter. I want on-line billing and historical data"
- "Web accessible energy data including interval data, load profiling capabilities, etc…
  - I shouldn't have to pay for this for my large sites - i.e. over 300kw, data retrieved 1X/day is frequent enough"
- "Low cost access to Internet based on 15 or 30-minute demand profiles, using mv90 technology, interrogating meters once daily...
  - Most of us don't need real time info...updated daily will be fine"

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Metering for Improved O&M
Where Do I Start?

- Reality check
  - Resources, priorities, market
- Do I need it?
  - Will it be worth it to me? Will I see an ROI?
- Start simple
  - Build experience and capabilities
- Avoid drowning in information

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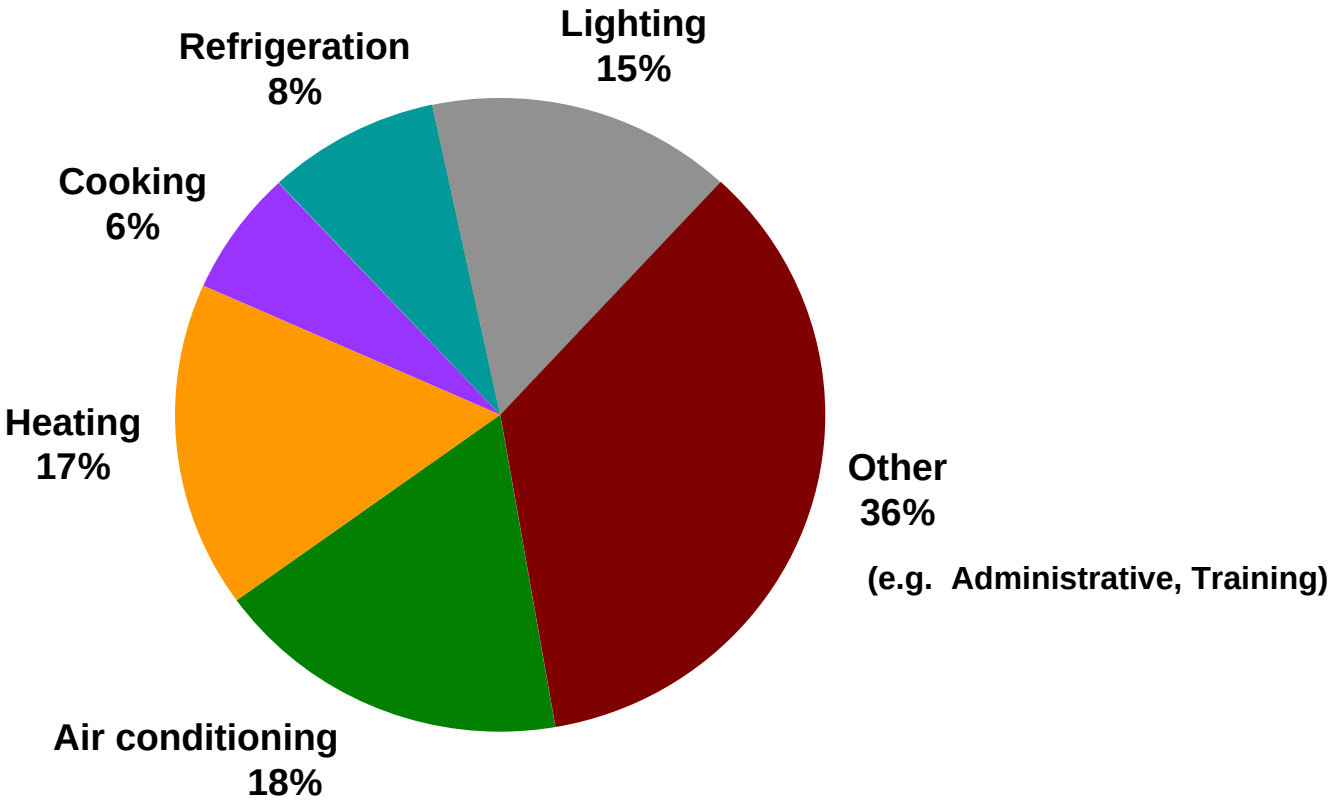
Reality Check:
How Maintenance Time Is Spent



Base: Total sample (n = 1,494)
Question Q4: If you were to break down the hours you just mentioned (FTEs that address O&M of energy end-use equipment at your facility) and applied them to the time spent operating and maintaining each type of equipment you have here, what percentage, up to 100%, would you say is spent on each?

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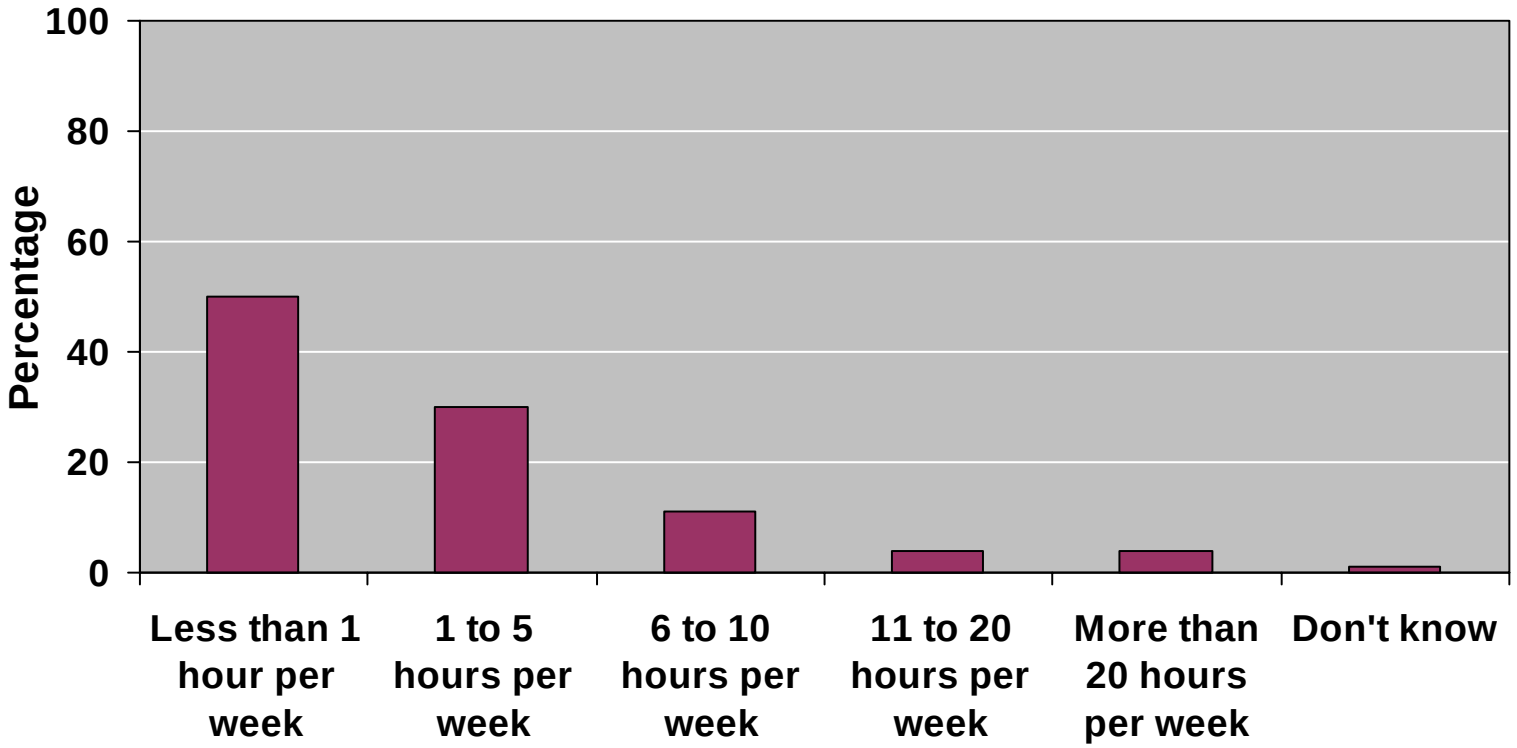
Time Spent On Energy Efficiency & Load Management / Week



Base: EE/LM MCS; total sample (n = 810).
Question 45: Considering all the facilities you manage, how many hours per week do you spend, on average, dealing with issues related to energy-efficiency and load management?

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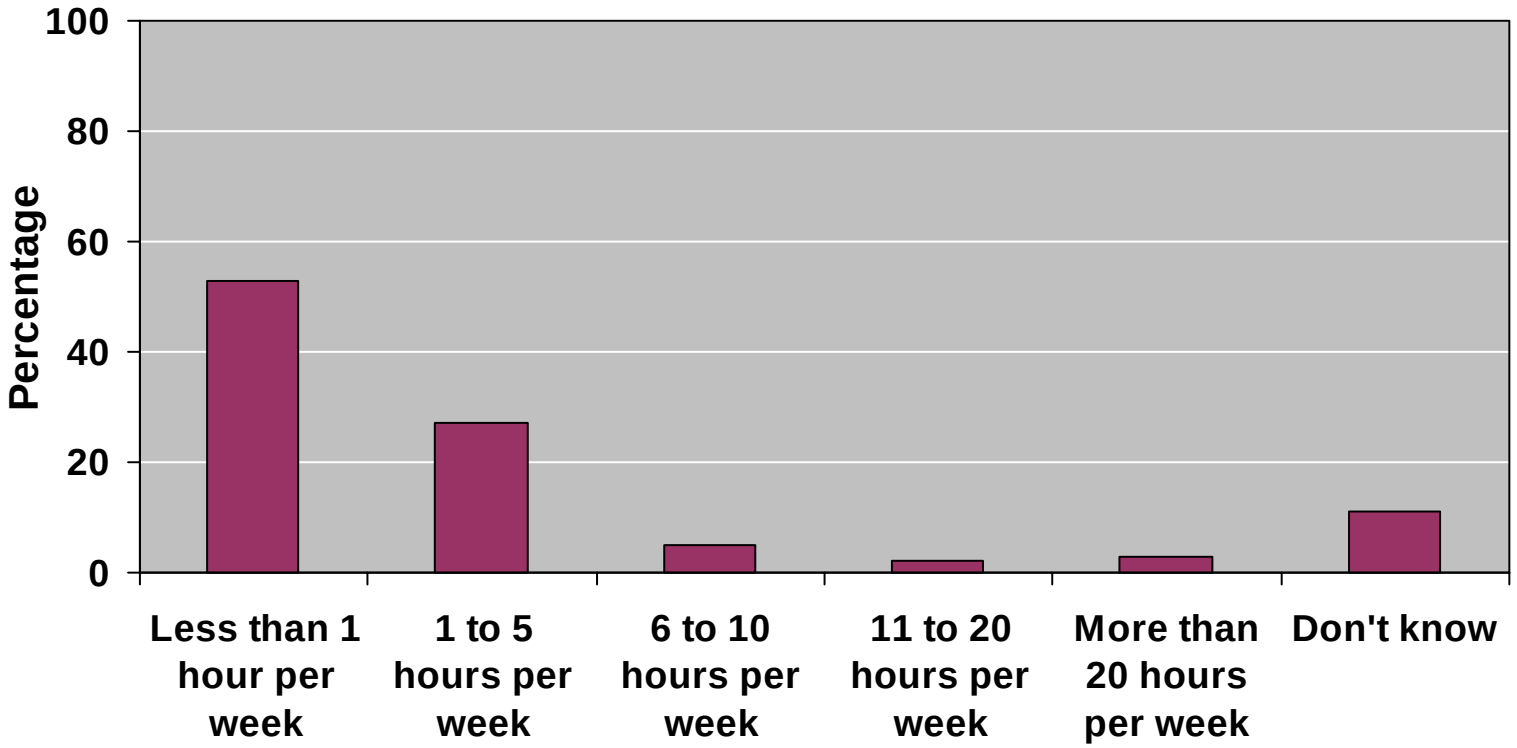
Time Spent Interpreting Energy Information / Week



Base: EIS MCS; total sample (n = 793).
Question 193: Considering all the facilities you manage, how many hours per week do you spend, on average, obtaining and interpreting energy information or using energy information products like the ones we have covered?

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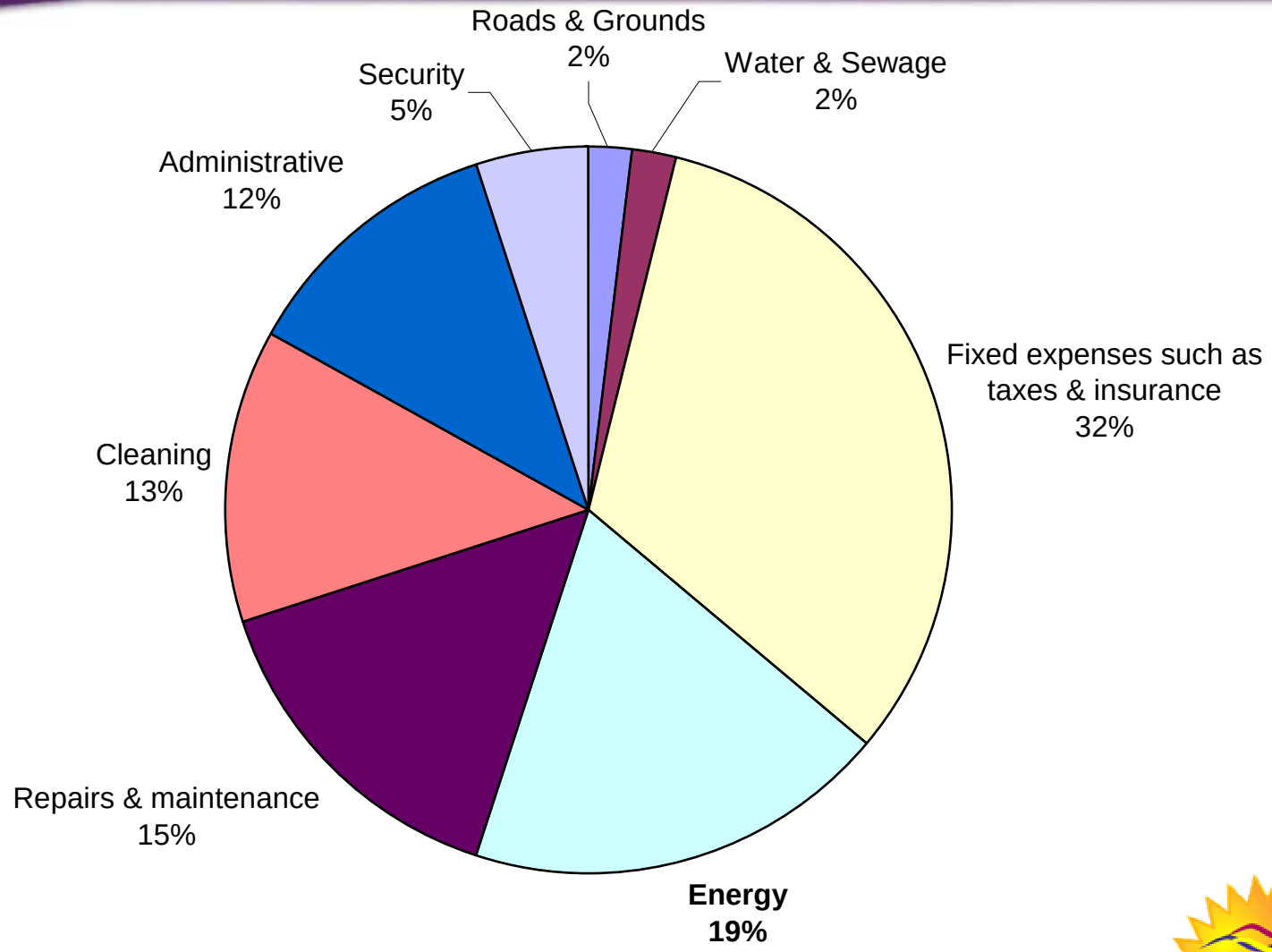
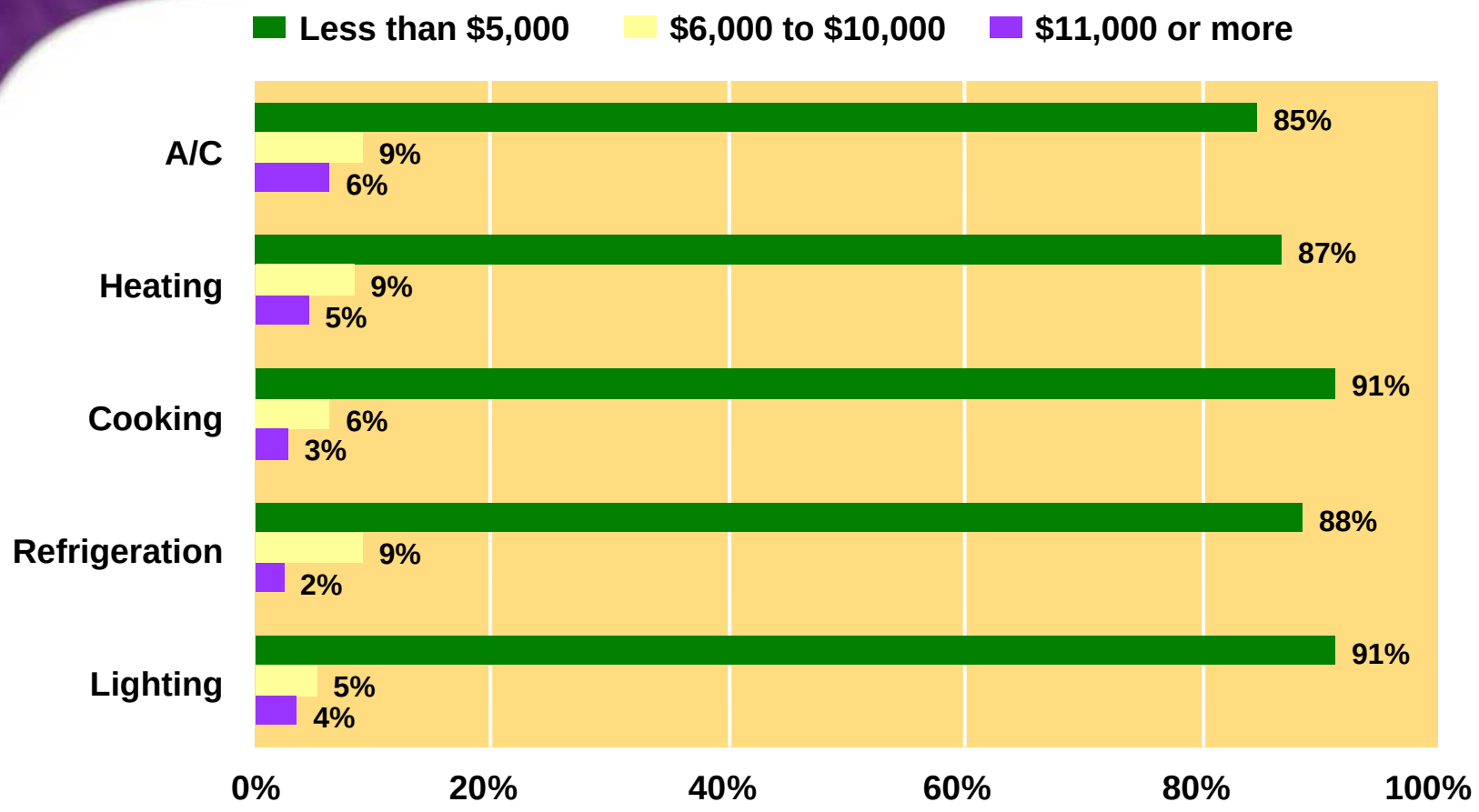
Reality Check:
Expense Breakdown for Office Buildings



Source: BOMA and E Source

Reality Check:
Monthly O&M Costs by End-use



Base: Those answering end-use section and monthly O&M (n = 600 to 1)
Question (Q19c, Q32c, Q58c, Q70c): What do you estimate are the total costs, including parts and labor, per month to operate and maintain this equipment?

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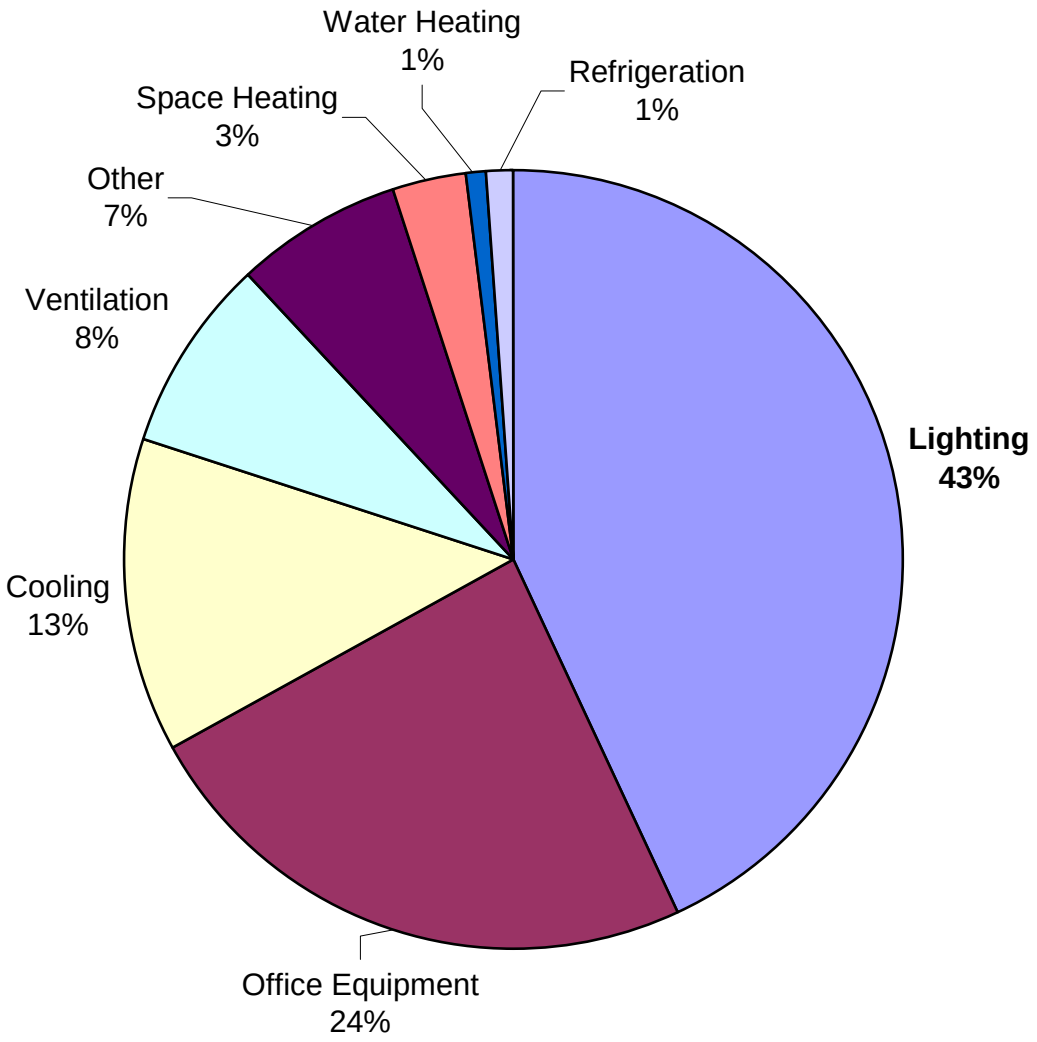
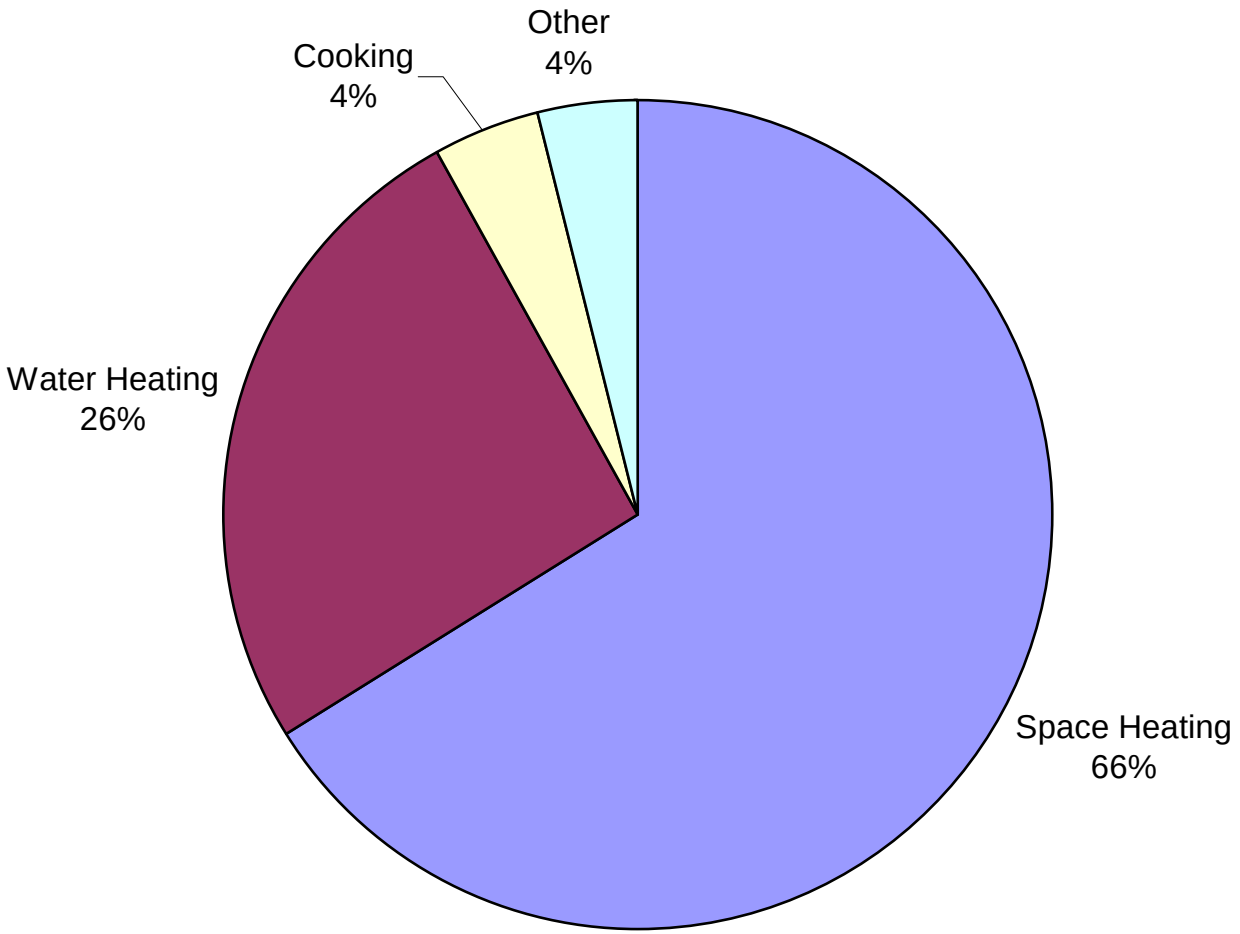
Reality Check:
Office Building Electric Consumption



Source: EIA

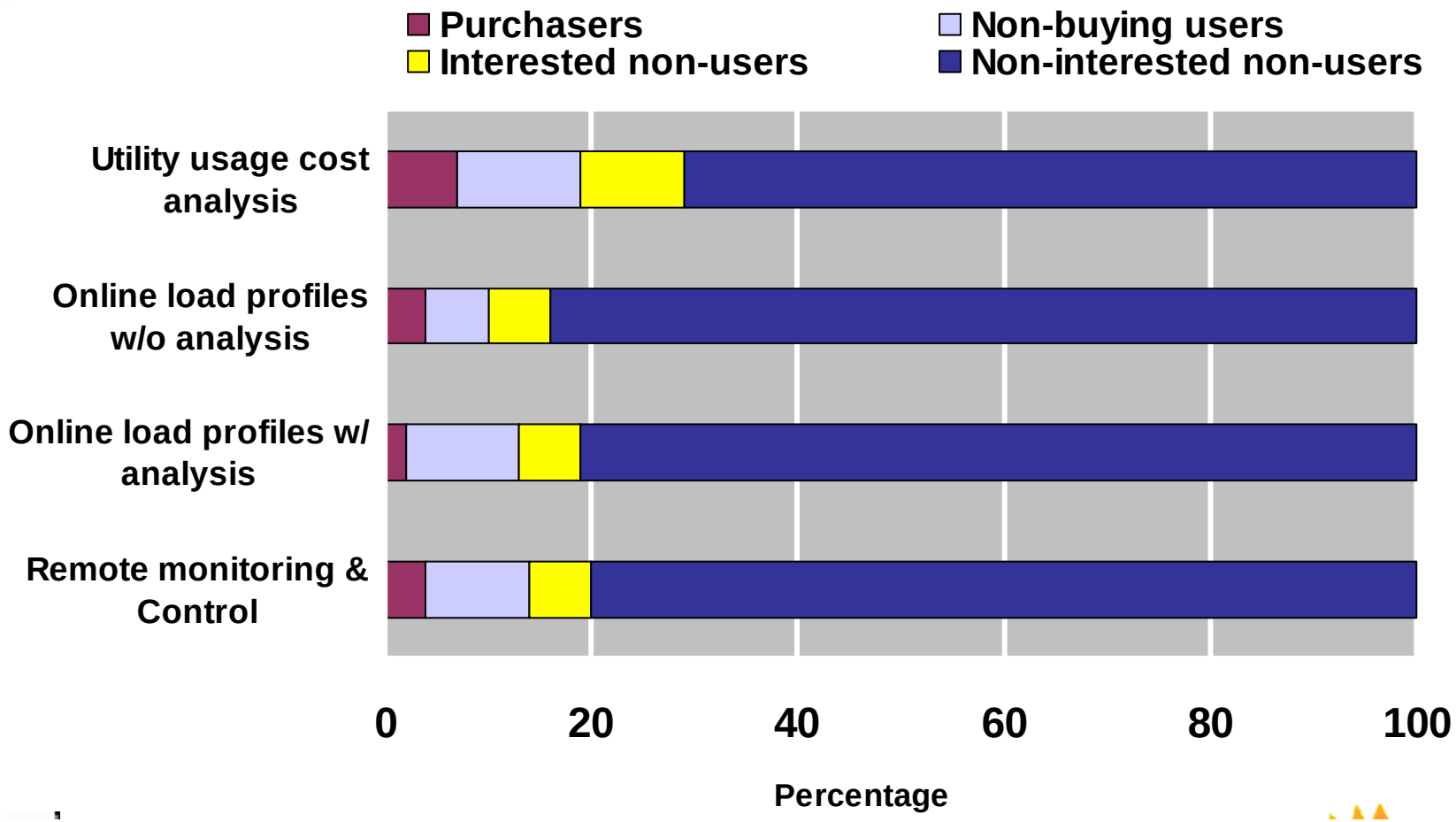
Reality Check:
Office Building Gas Consumption



Source: EIA

What's the Market Look Like For Energy Information Services?

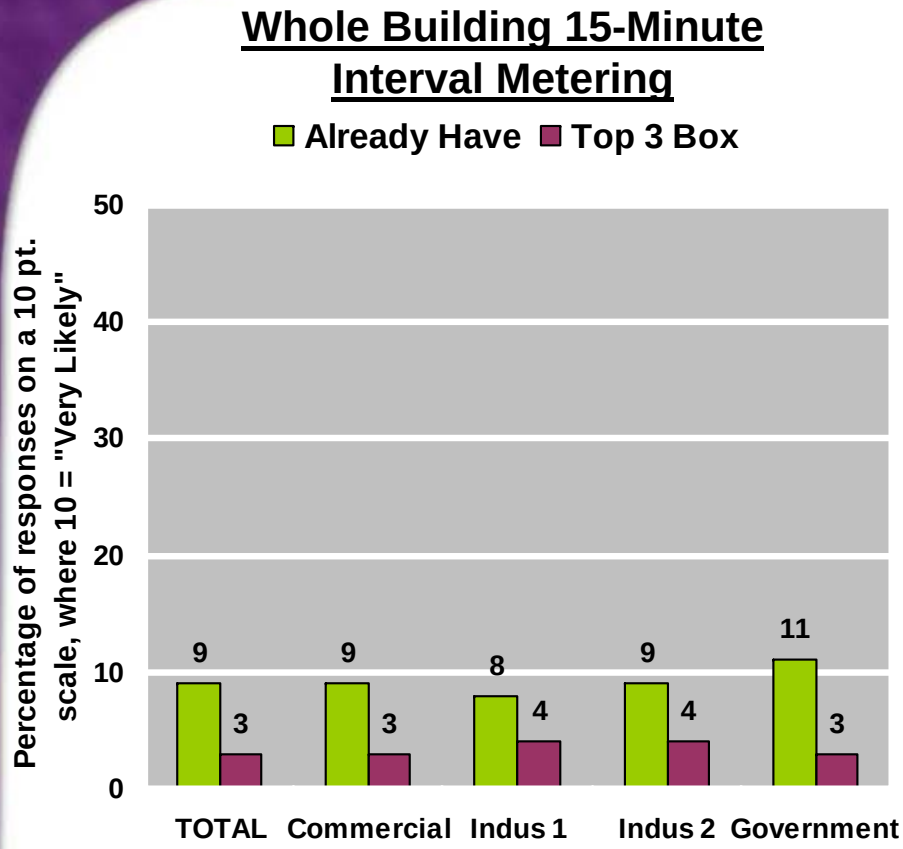
Segments



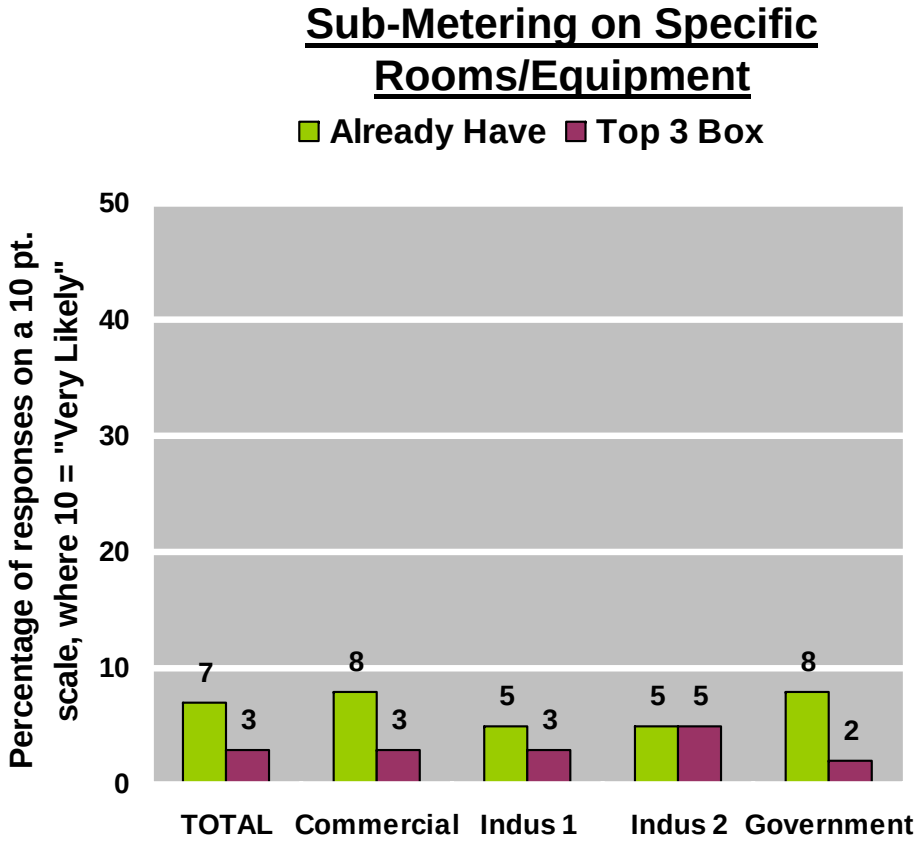
Base: Total Sample (n=793)
Source: Estimating Markets for Energy Information Services, December 2002

Likelihood to Purchase Energy Information Services Within 2 Years

Whole Building 15-Minute Interval Metering



Sub-Metering on Specific Rooms/Equipment



Source: Total Sample; Question 7a to 7b
Q7a-d: How likely are you to purchase any of the following energy information services in the next two years? [Responses on a 10-point scale, where 10 = very likely and 1 = not at all likely.]

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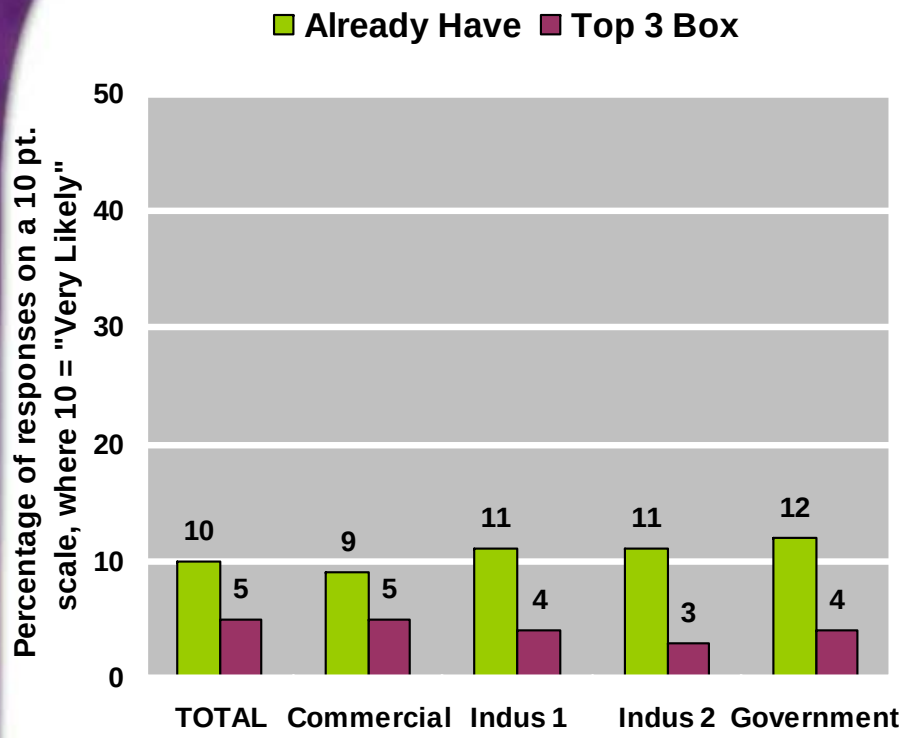
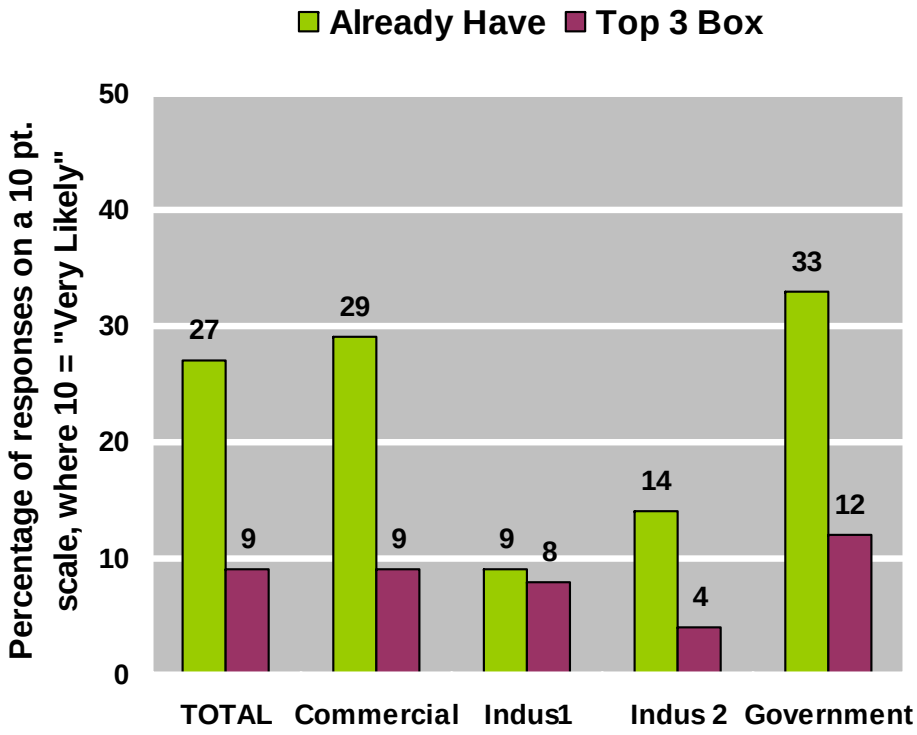
Likelihood to Purchase Energy Information Services Within 2 Years

Energy Use Analysis Service



Energy Management System



Source: Total Sample; Question 7c to 7d

Q7a-d: How likely are you to purchase any of the following energy information services in the next two years? [Responses on a 10-point scale, where 10 = very likely and 1 = not at all likely.]

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Do I need it?
Check Steps

- Building type and use
- Building size and location
- Own vs. lease space
- Occupancy rate will impact need
- Building energy intensity

Know What Your Goals Are

- Energy cost savings; peak demand reductions
- Allocating energy costs to departments or tenants
- Monitor processes or equipment for energy management, predictive maintenance, or IAQ
- M&V for an energy management project
- Enable participation in RTP, load management, or Demand Response Program
- Distributed generation
- Energy procurement

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Start Simple . . .Start Small

“If you're trying to build a program from the ground up, think success first, superstar later. . .What you don't want to do is try and hit a home run with some multimillion-dollar endeavor right off the bat. Initially focus on small projects that are easy to roll out and easy to measure and verify.”

"Start with a pilot, implement it, measure it, and then publicize it.”

“Success is contagious. It can be the single most important factor in terms of making your case again, later on down the road. The key to making the business case for energy efficiency for the long term is to build credibility in the short term."

Harry Kauffman, Corporate Energy Director, Johnson & Johnson

Unilever North America
Home and Personal Care Division

- Used utility revenue metering data to build spreadsheets
- By letting individual facility managers see and compare data for all of the sites
  - Peer pressure was brought to bear on the results
  - Created a heightened awareness of actual energy use and the need to reduce costs
- Turned a fledgling energy program into a $2 million annual budget for energy-efficiency
  - Direct energy cost savings of 10%

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Source: Jim Pease, Energy and Environmental Manager

Start Simple and Then Expand

- Utility bill analysis
  - Benchmark your facilities
- Whole building monitoring
  - Load profiles
- Submetering
  - Can be flexible by using temporary units
- Integration of energy and process controls
  - Monitoring and targeting
- Continuous commissioning

Issues to be Aware of

- Hidden costs of installation
- Differences between THE utility revenue meter and your EIS reports
  - Out of synch is but one problem
- Training and re-training
- Data overload

Reasons for Purchasing Metering: What Large End Users Told Us

- Compare energy costs across facilities
  - Identify high-cost locations
- Compare energy costs to market averages
- Find best utility rate plan
- Manage energy use
- Identify when peak energy demand is set
- Verify energy bills
- Reduce maintenance costs
- Reduce equipment downtime

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Source: Estimating Markets for Energy Information Services, December 2002

Conclusions

- Start simple
- First determine how you will use information
- Many different technologies; customize an approach that fits your buildings, your circumstances and your culture
- Promote your successes

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Thank You

For More Information Please Contact:

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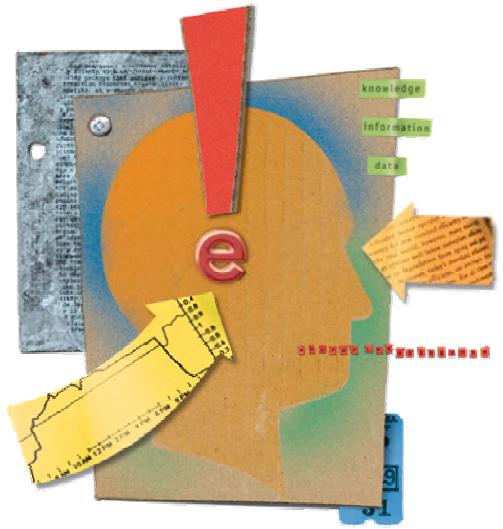

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