

Practical Energy Management (PEM) in Wisconsin

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Today's Presentation

- Focus on Energy Overview
- Our view of Industrial Energy Management
- Practical Energy Management (PEM)
- PEM Basics

What is Focus on Energy?

- Wisconsin's statewide energy efficiency and renewable energy program
- Legislature created in 1999; expanded 2005
- Helps implement projects that would not occur otherwise
- Customer eligibility based on their electric/natural gas providers
 - 12 IOUs, 72 Municipal utilities, 4 electric co-ops, 9 natural gas utilities

Focus on Energy Structure

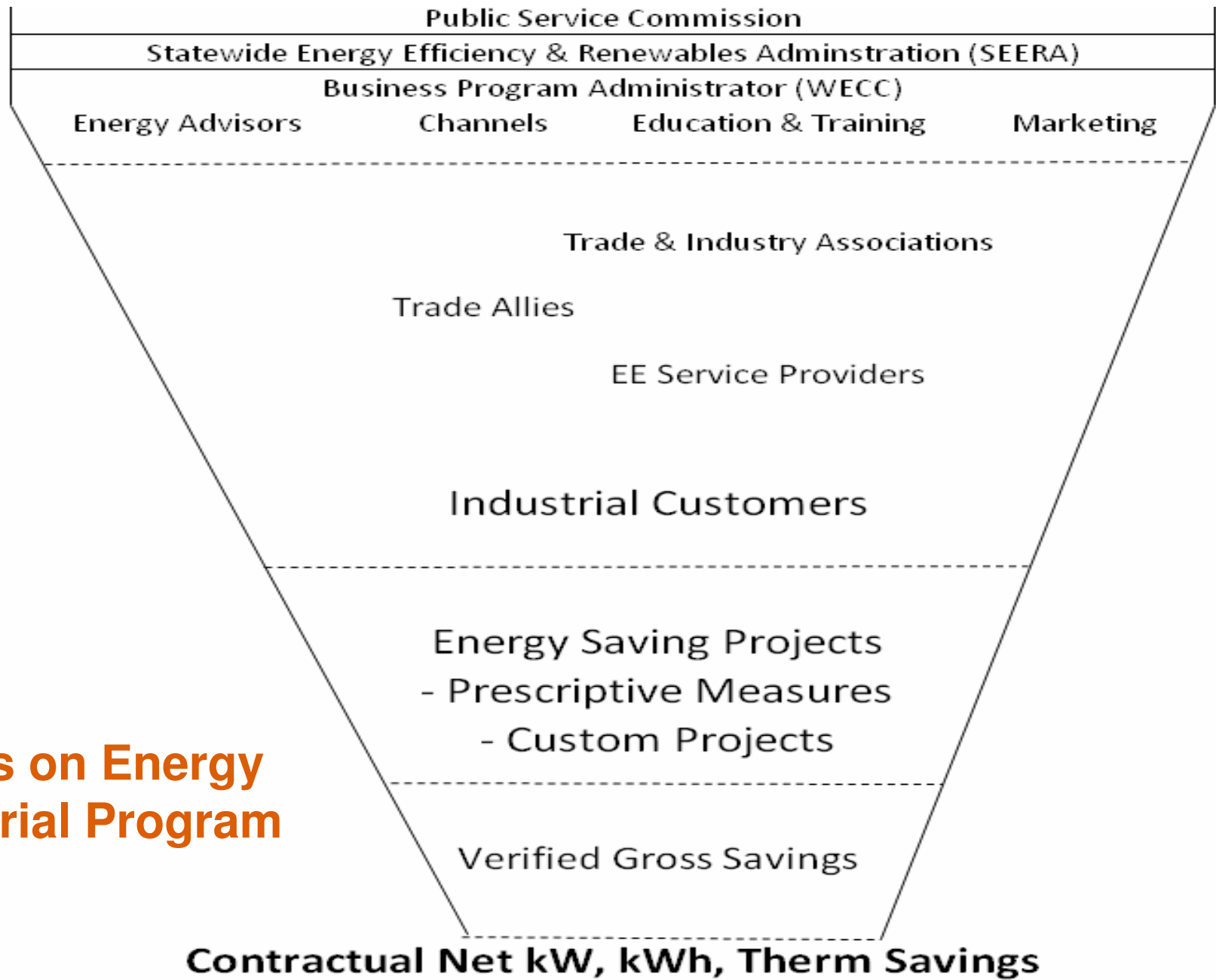
- Oversight by Public Service Commission
- Funds go to SEERA – nonprofit org. of participating electric & gas providers
- SEERA contracts with:
 - Program administrator(s) for program areas
 - Independent fiscal agent and compliance agent
- Administrator hires subcontractors to deliver programs

Focus on Energy Program Areas

- Residential
 - Single and multifamily
- Business
 - Commercial, industrial, schools/government and agricultural
- Renewables
- Education & Training
- Marketing
- Environmental Research

Focus General Strategies

- Define and target Best Practices
 - Technical assist, Ed. & Training, Marketing
- Enhance sales strategy for product and service suppliers
 - Channel activities, incentives
- Leverage associations (cluster industries)
- Overcome key barriers of first cost and technical risk
 - Feasibility Study and Project Grants
- Promote energy management planning



**Focus on Energy
Industrial Program**

Focus Goal Credit

- Customer claimed = Gross savings
 - Submitted by EA, ally, or customer
- Verified at program level
 - Engineering and attribution

-----Independent Evaluation-----

- Engineering evaluation = Gross verified
- Gross verified x Attribution rate =
Net program savings

Focus Accomplishments

2001 – 2007

- > 54,000 businesses and 834,000 residents have participated
- > 3,000 Wisconsin businesses partner with Focus to sell energy related goods and services
- By 2007, Wisconsin's residents and businesses were saving more than \$164 million *annually*

Focus Industrial Goals

- 12,000 industrial customers
- Diverse in industry and size
 - Pulp & paper, food, metal casting, print, plastics, metal fab
- Industrial program budget (ratepayers)
 - \$20 million (1.5 years)
 - \$17 million (CY09)
- Goals (net)
 - 127 million KWh
 - 18 MW
 - 6 million therms

Industrial Achievements

- >2000 industrial participants (~20%)
- Account for largest customers (80/20)
 - Cluster industries
- Industrial savings, to date:
 - 99 million KWh (78%)
 - 13.5 MW (75%)
 - 3.8 million Therms 63%
- Program B/C = ~4 (TRC)

Industrial Energy Management

- Wisconsin's program builds upon 20+ years of utility-run programs featuring audits and rebates for installing projects
- While effective, industries didn't manage energy as much as do simple projects that they planned to do anyway.
- Thus, many projects were evaluated as "free riders," reducing net energy savings.

Barriers to Energy Management

- Upper management lacks effective framework to approach the issue
 - Don't know what to do or whom to trust
- Limited staff time & expertise available (priority)
- EE program services (audits & tech. asst.) seldom integrated with business practices
- Multiple facilities, energy sources and products
 - Accounting is difficult
- Energy often seen as an uncontrollable cost

**Based on various internal and external surveys and field observations*

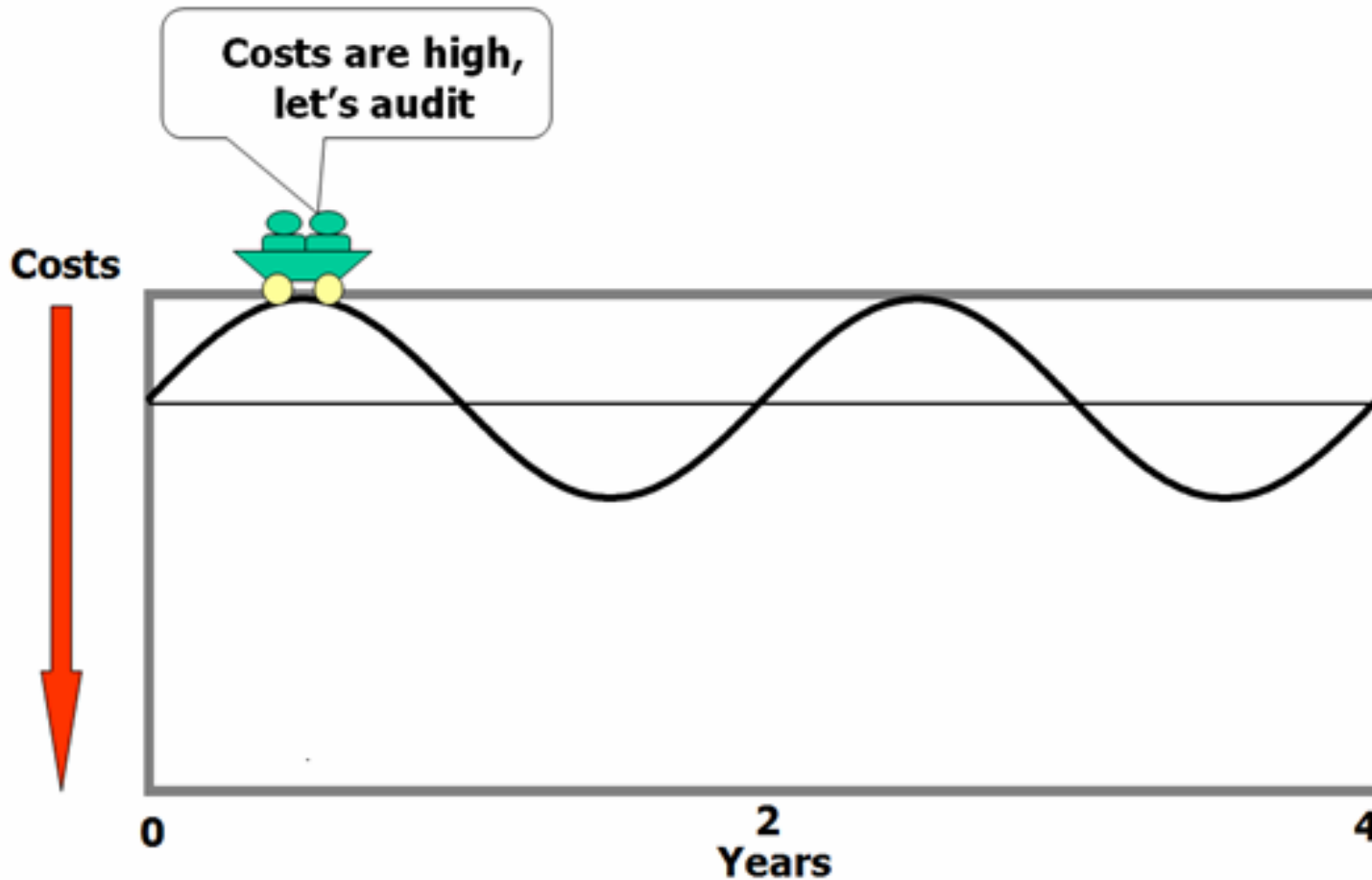
Result of Barriers

Ad hoc “energy management”
based on emergency “response”

“Triage”

Does this look familiar?

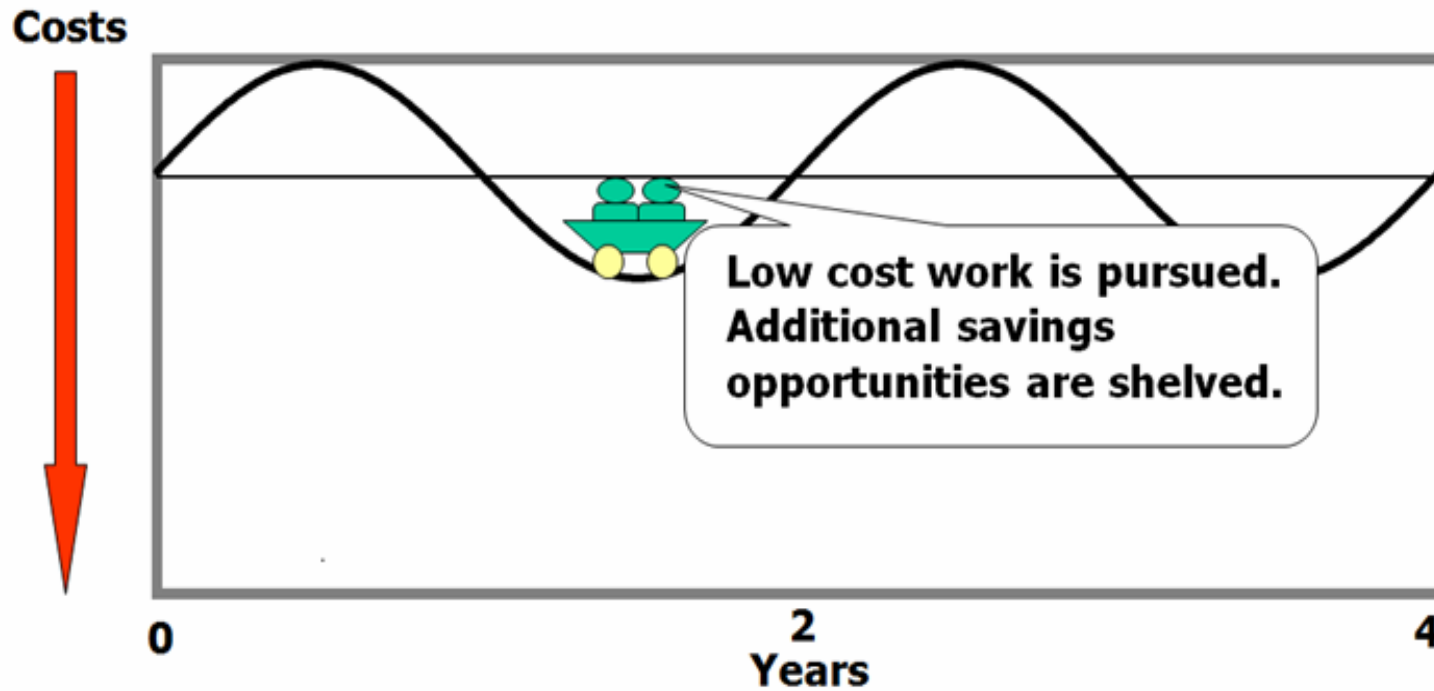
Traditional Approach to Energy Management



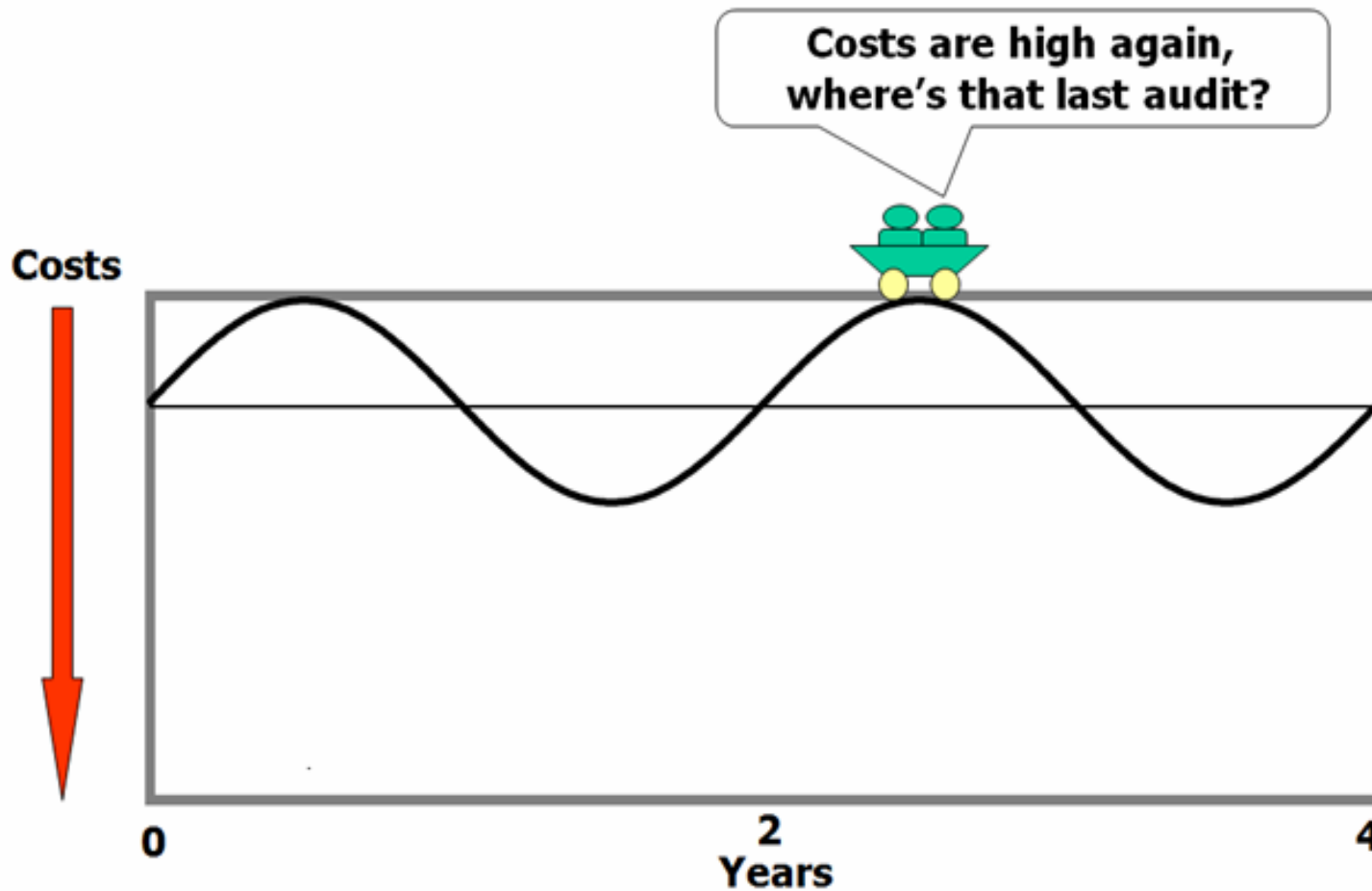
Traditional Approach to Energy Management



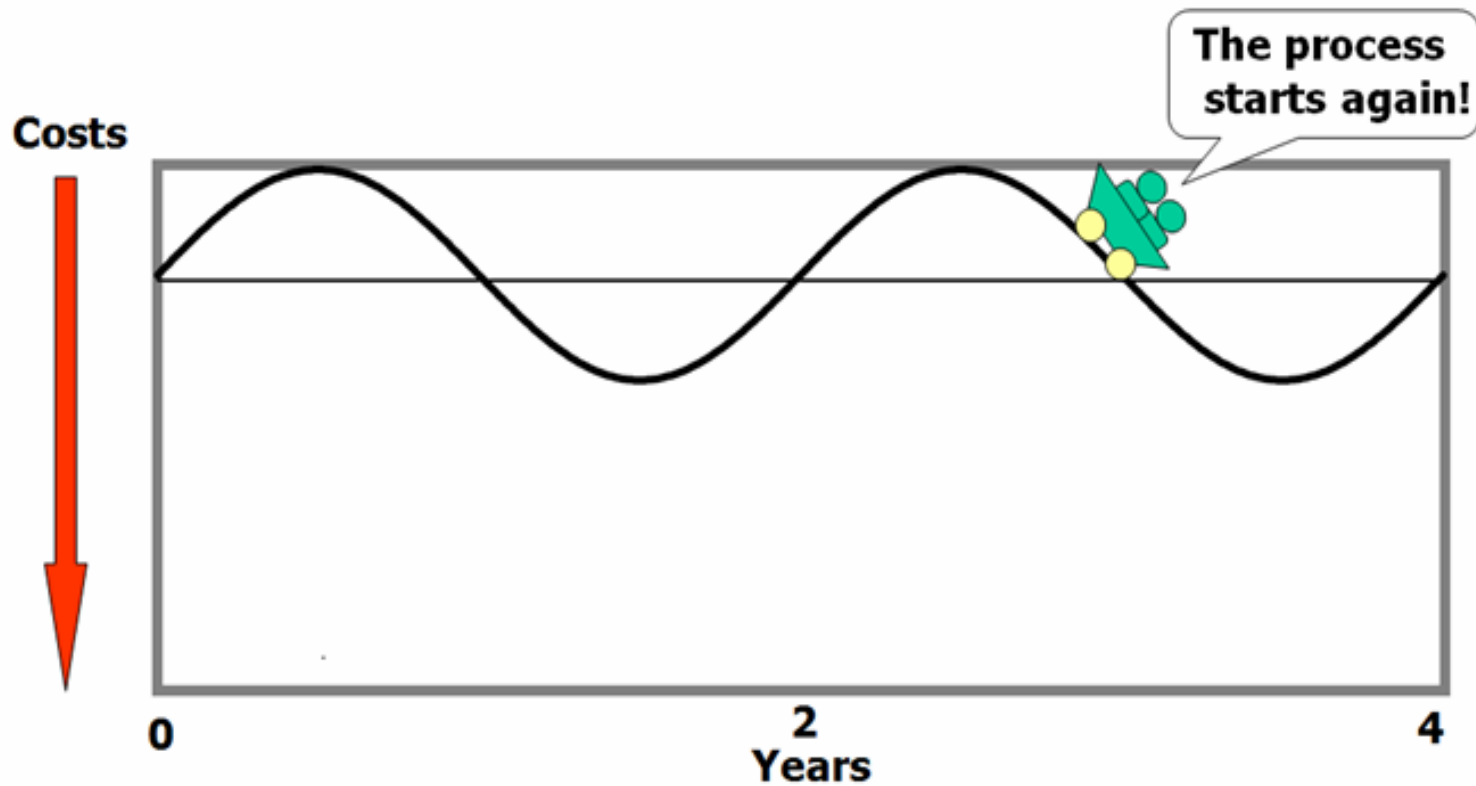
Traditional Approach to Energy Management



Traditional Approach to Energy Management



Traditional Approach to Energy Management



The Need?

- Systematic
- Comprehensive
- Aligned with corporate goals
- Integrated into business framework
- Accountable
- Communicative

Typical Approach to Energy Management

- Gather Data
 - Analyze Data
 - Quantify Opportunities *A purely technical focus goes only so far*
.....
 - Select Projects
 - Provide Justification
 - Gain Approval
 - Implement Projects
 - Project Validation
- Planning
- Communication
- Goals
- Awareness
- Support
- Performance Tracking
- Motivation

Practical Energy Management

Practical Energy Management

- Developed in 2003, updated 2006
- Brings together Technical and Management best practices
- Template for companies to customize their own approach
- Provides short term project management and long term continual improvement

PEM Program Logic

- Key barrier:

There is often a disconnect between energy program offerings and business management practices.

- Additional barriers:

- Many companies want to manage energy, but don't know how
- and they will dedicate little time for someone to learn

PEM Program Logic (cont.)

- Can overcome barriers by providing an energy management template
- Identify and harvest easy or quick payback projects & create mgmt. buy-in
- Offer follow-up assistance (i.e. energy teams) to keep momentum and work for deeper savings

PEM Impact

- Focus-integrated teams
 - ~5–10 working teams
 - Often facilitated by EA, utility account rep, or PEM lead
- Independent customer teams
 - Use of PEM calc sheets and other forms
- Leveraged many projects, though energy impacts not quantified through current version of tracking database
- Increased energy expert capacity in Wisconsin

Program Benefits of PEM

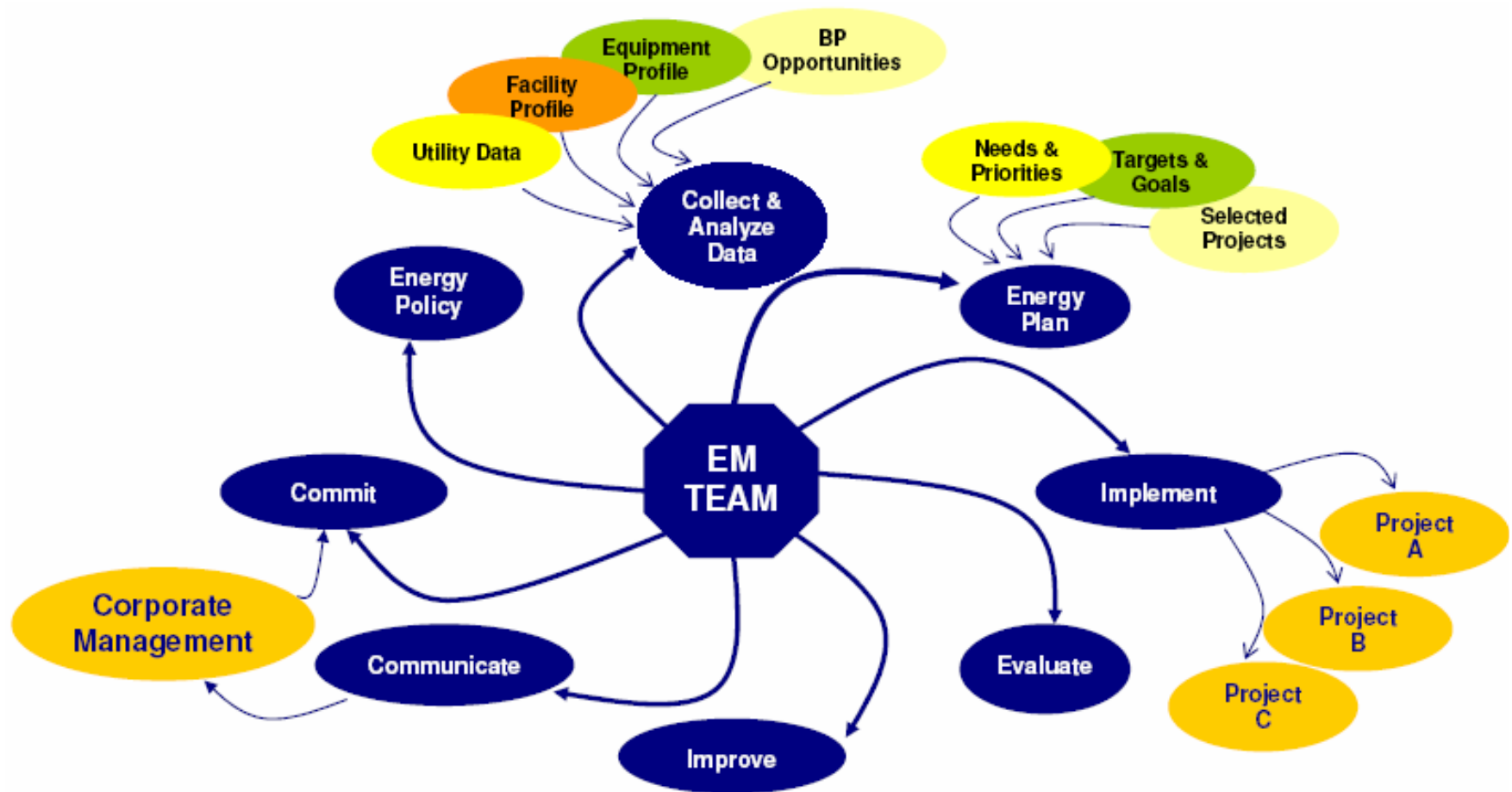
- Helps leverage projects and claim savings
 - Implementation grants
 - No grant projects
- Supports customer self-reliance and continual improvement
- Enhances Focus relationship with customer (and with utilities)

PEM Basics

Practical Energy Management

1. Management Plan
2. Facility Profile
3. Energy Use Profile
4. Best Practices
5. Project Prioritization
6. Project Management
7. Key Performance Indicators
8. Continual Improvement

Generic PEM Process



Why use a PEM approach?

- Experience with energy audits
 - One time view
 - Short term decisions
 - Minimal follow-up and implementation
 - High transaction costs vs. returns
 - Often do not reach process technologies
- Market assessment of industry
 - Only 6% have a formal EM program
 - 75% of industries without any EM program

PEM Targets

- Marketed to all industries: Work with those who will work with you
 - Too many utilities involved to exclude anyone
- Have motivated customers self identify by requiring tuition – helps ensure PEM will be self-sustaining
- Decide on level of Energy Advisor or team facilitation follow-up based on energy saving potential at industry

PEM Demand

- Not easy to assess
- Depends on...
 - Type of industry
 - Energy as percent of operating costs
 - Rate volatility
 - Corporate acknowledgement of need
- May be emergency-driven

PEM Delivery

- 30 half-day “overviews” over last five years
 - 800+ customers
 - Multi-facility customers
- On-site PEM support requests (training)
- Energy Advisor participation
- On-site PEM Energy Management Team support
- Focus grants
 - Feasibility studies
 - Implementation grants
- Utility support

PEM Survey Results

- 61% of PEM class participants use PEM in some way within their business to manage energy
- 30% of PEM class participants have implemented at least on energy project within one year through the use of the PEM approach

PEM Lessons Learned

- Even larger companies can benefit from applying the PEM approach to enhance their existing energy management
- EE program support for PEM facilitation of energy teams has yielded both large and small projects
- Real, deeper energy savings from PEM can be claimed by EE programs

Benefits/Pitfalls for CEE

- Pent-up demand
 - Need to identify program boundaries based on costs, expertise, etc.
- Need effective, intelligent trainers/facilitators
- Barrier of limited staff time (priority) still exists
- Participation may be crisis-driven
- Program infrastructure (e.g., Focus) is useful, if not critical

Thank you!

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