

# *Integrating Management Systems for Sustainability*

---

***Cam Metcalf***  
***Executive Director***

---

***[www.kppc.org](http://www.kppc.org)***



**Kentucky  
Pollution  
Prevention  
Center**

**Partnering to Improve Our  
Region: Health, Economics  
& Environment  
5<sup>th</sup> East Tennessee  
Environmental Conference  
March 9, 2006**

# Kentucky Pollution Prevention Center

---

## Mission

The Kentucky Pollution Prevention Center (KPPC) at the *University of Louisville* is Kentucky's primary resource for technical information and assistance to improve environmental performance.

The Center facilitates and promotes the proactive implementation of management systems and technologies to improve the competitiveness of businesses, industries and other organizations.

# The Big Squeeze is on!

## There is a new global business environment!

# Organization



Water  
Climate  
Resources  
Life Cycle  
Management



Globalization  
E-Commerce  
Cost  
Containment  
Developing Countries



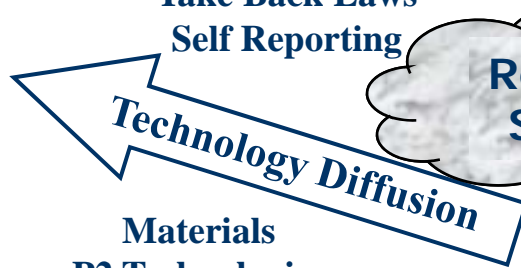
Responsibility & Roles  
Transparency  
Accountability



Regulations  
Homeland Security  
Take Back Laws  
Self Reporting



Corporate Values  
Leader’s Values  
Societal Values



Materials  
P2 Technologies  
Connectivity



# Our “Universal Backyard”



**NIMBY**  
**NOTE**  
**BANANA**  
**CAVE**  
**NOPE**

# P2 Programs are Selling Multimedia Approaches

---

**W** ater

**A** ir

**S** olids

**T** ime

**E** nergy Efficiency (E2)

# P2 = Source Reduction

---

**P2 means “Source Reduction” & other practices that reduce or eliminate the creation of pollutants through:**

**Increased efficiency in the use of raw materials, energy, water or other resources; or**

**Protection of natural resources by conservation.**

***Resource Management***

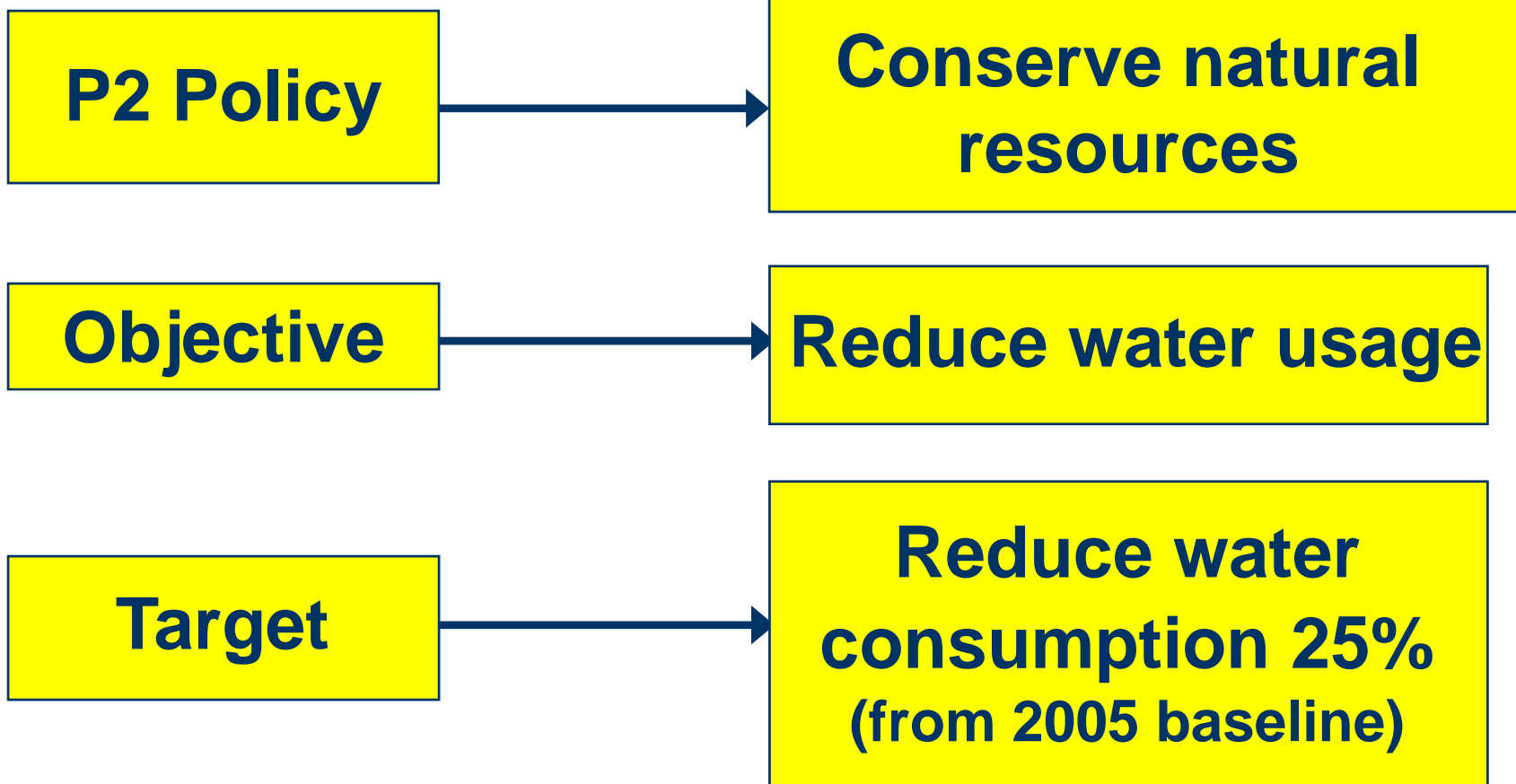
# Resource Accounting

## Non-product Resource Use



## Non-product Resource Loss

# The Policy Drives Objectives & Targets

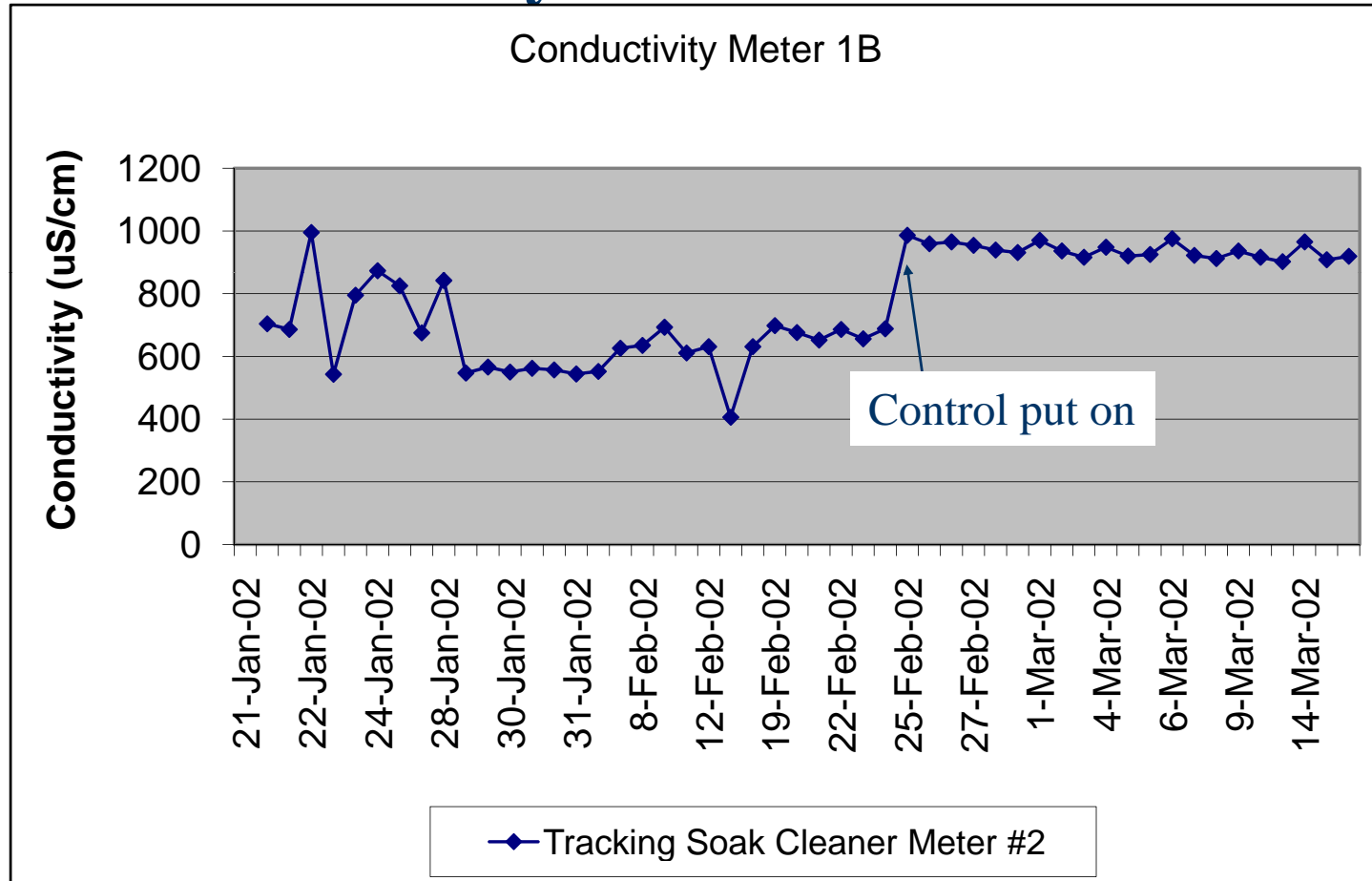


*Environmental performance – measurable results based on the policy, objectives & targets!*



# Operational Control: ElectroShield

## Conductivity Results for Meter 1B



# A Management System Is:

---

**A set of important business tools**

**A coordinated, integrated method for managing business processes**

**Formal & informal**

**Standardized or customized**

**A necessity for business success**

***“Smart Business”***

Dave Church, BVQI

# A Management System Is Not:

---

**Rocket Science**

**Only applicable to large companies**

**Only available to ISO registered companies**

**Only related to environmental or quality**

**Government regulated**

Dave Church, BVQI

# Types of Management Systems

Quality

Environmental

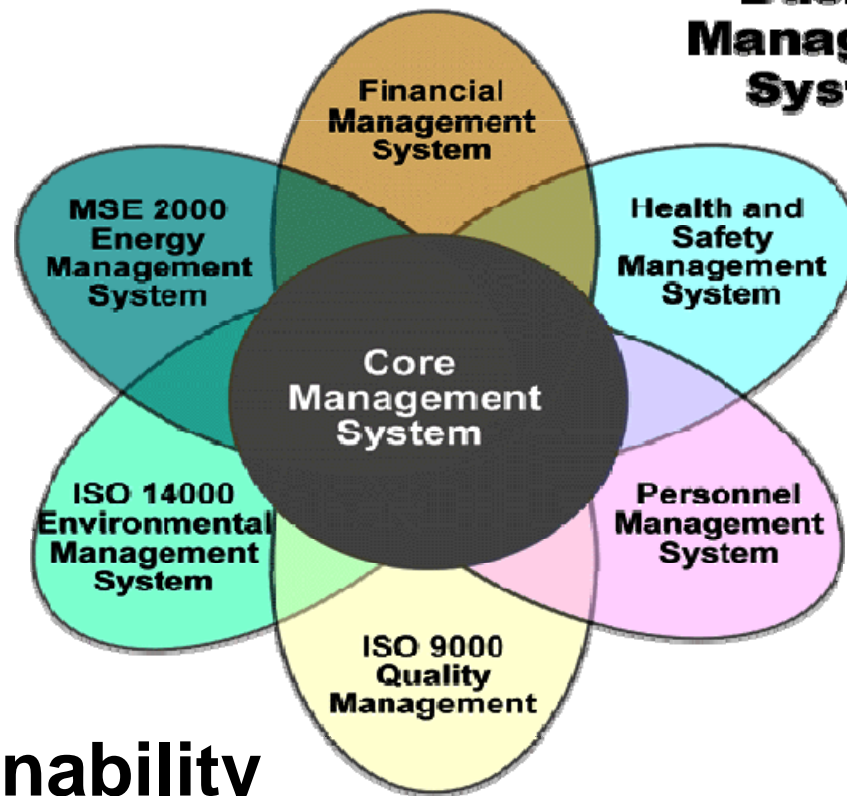
Health & Safety

Security

Corporate Sustainability

Social Accounting

**Business  
Management  
Systems**



From <http://www.mgmt14k.com/linking.html>, accessed on 5/3/2001, GMT Alliances Inc.

*The trend is to integrate systems together.*

# Environmental Management System

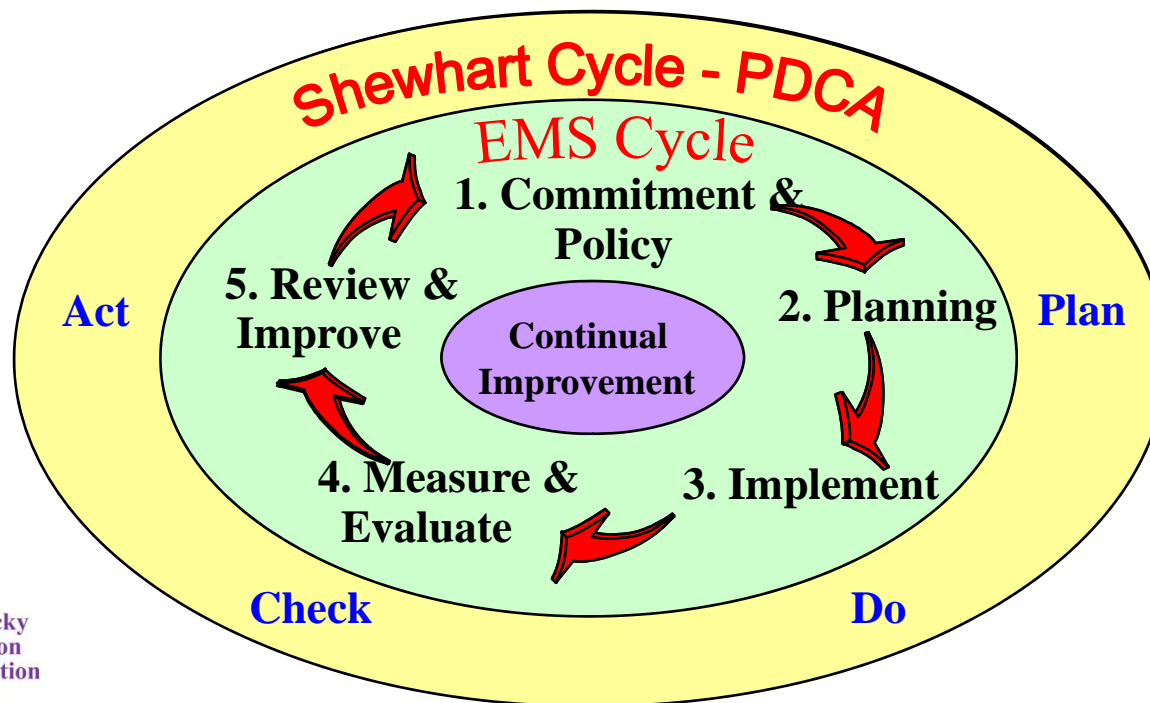
Provides a systematic approach to review & improve operations for better environmental performance & improved profitability by setting up procedures that ensure the work gets done safely, consistently, efficiently & effectively.



# The Future of Pollution Prevention (P2) & E2...

## Environmental Management Systems (EMSs)

“Environmental **Management** System”



# Business Planning

---

**When is it a good time to start saving money?**

**Are you planning to improve your business / business practices?**

**Do you think there can be a competitive advantage to improved environmental performance?**

# EMS: Value Added

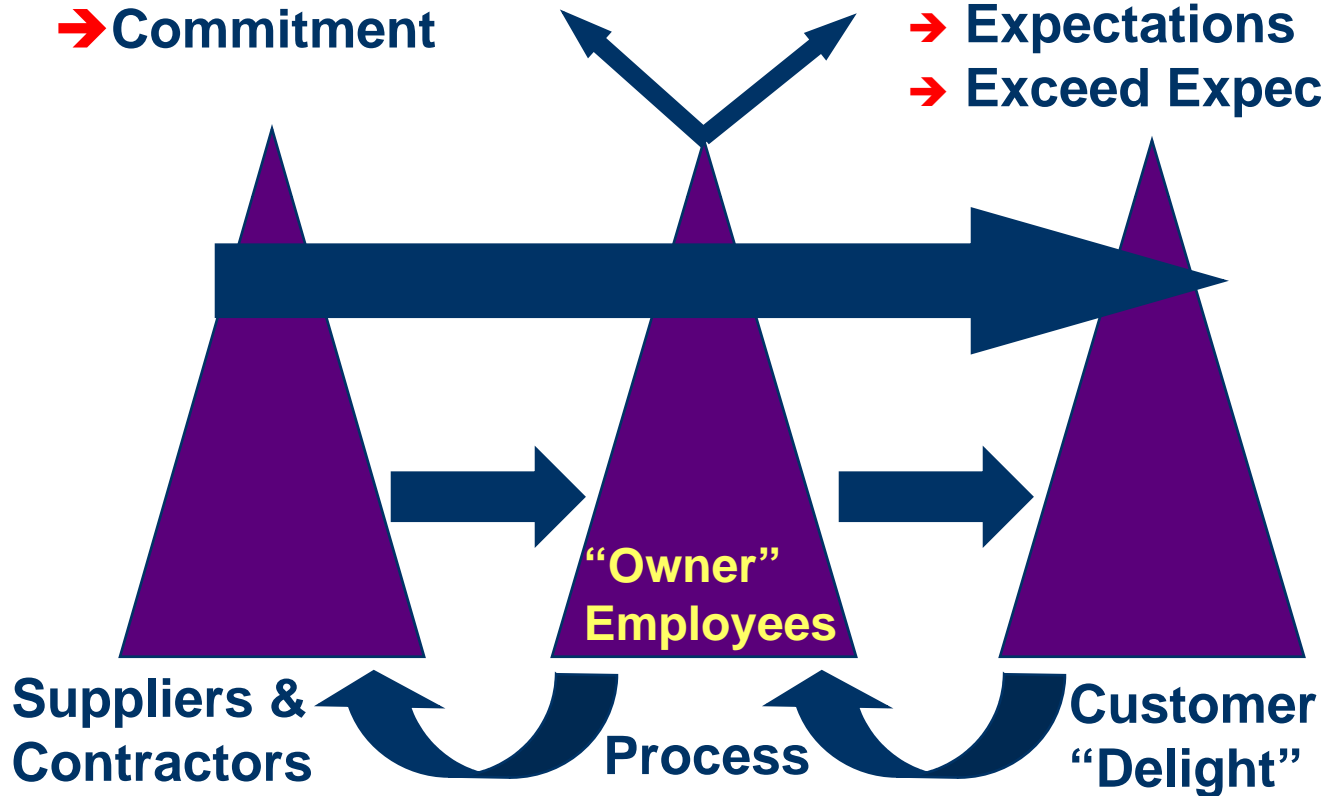
Operational tool for an organization's business plan!

## Prevent Waste:

- Involvement or
- Commitment

## Add Value:

- Fulfillment
- Expectations
- Exceed Expectations



**Customer Satisfaction is Worthless; Customer Loyalty is Priceless!**

# The Future of EMS...

“Environmental **Management** System”

“**Environmental** Management System”

**The Next Step:**

“Environmental **Sustainability** Management System”  
(ESMS)

“Condition in which an organization is able to fully execute its present vision & mission without compromising the ability of at least the next two generations to accomplish theirs.”

ESMS

# Sustainable Performance

S  
U  
S  
T  
A  
I  
N  
A  
B  
I  
L  
I  
T  
Y

## Triple Bottom Line

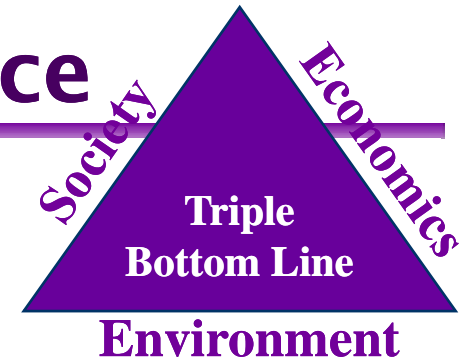
Social & individual well-being

Strategic plan for economic goals

Guiding Principles for

Environmental Management System

- Pollution Prevention
- Compliance with all regulations
- Continual improvement
- (Conservation of natural & cultural resources)



**Sustainability + EMS = ESMS**

# EMS & Sustainability Overview

---

**Sustainability is a core value that drives the long-range strategy for continual improvement of resource management & the ability to exist.**

**EMS is an operational tool to achieve 5-7 year objectives in support of 25 year goals.**

**The analogy of a construction project:**

**You want to build a sustainable structure.**

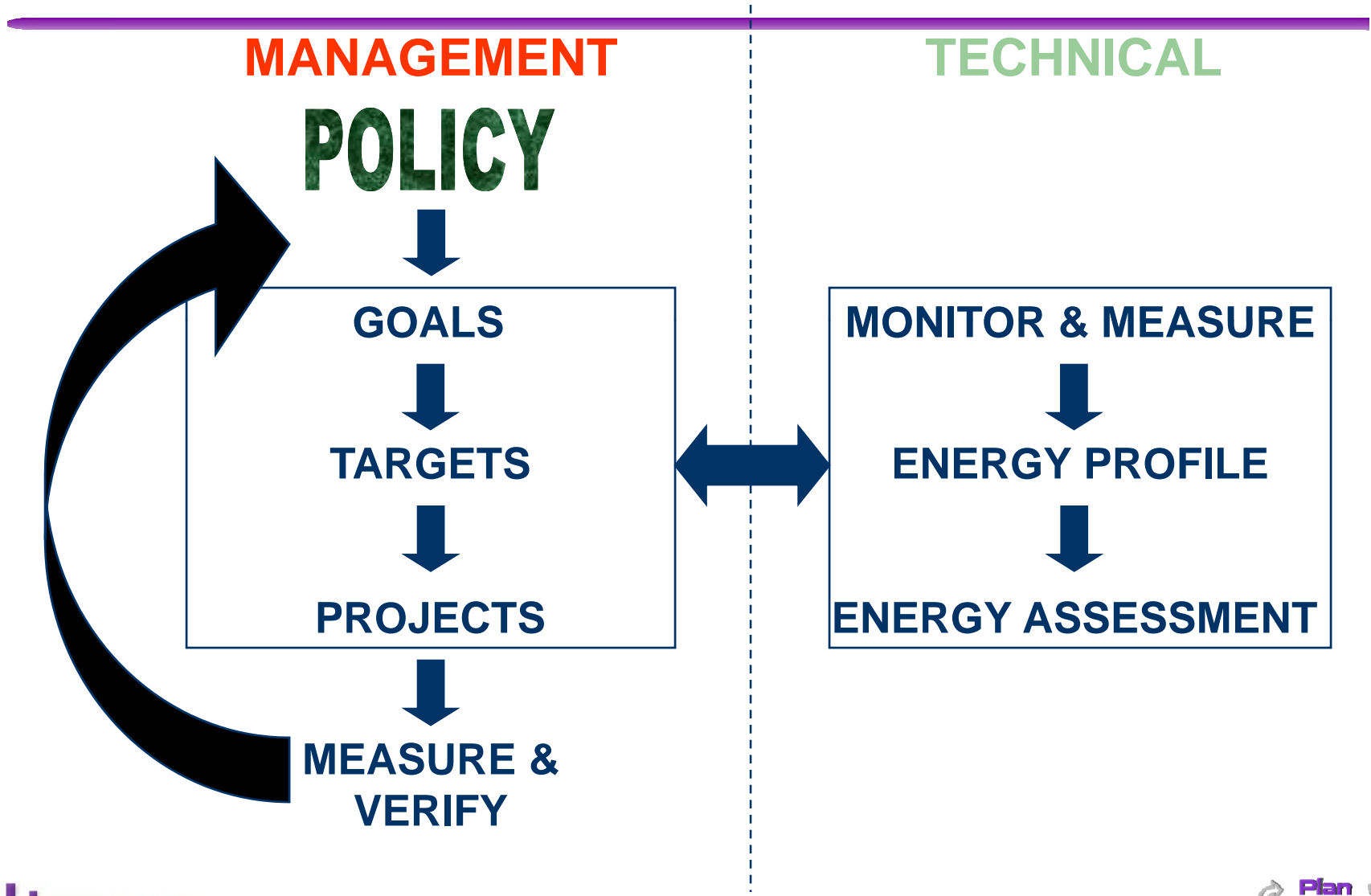
**Sustainability strategy is the blueprint**

**EMS represents the construction codes & standards**

**P2/E2 are the choices to use the highest quality materials**

**Compliance is the foundation**

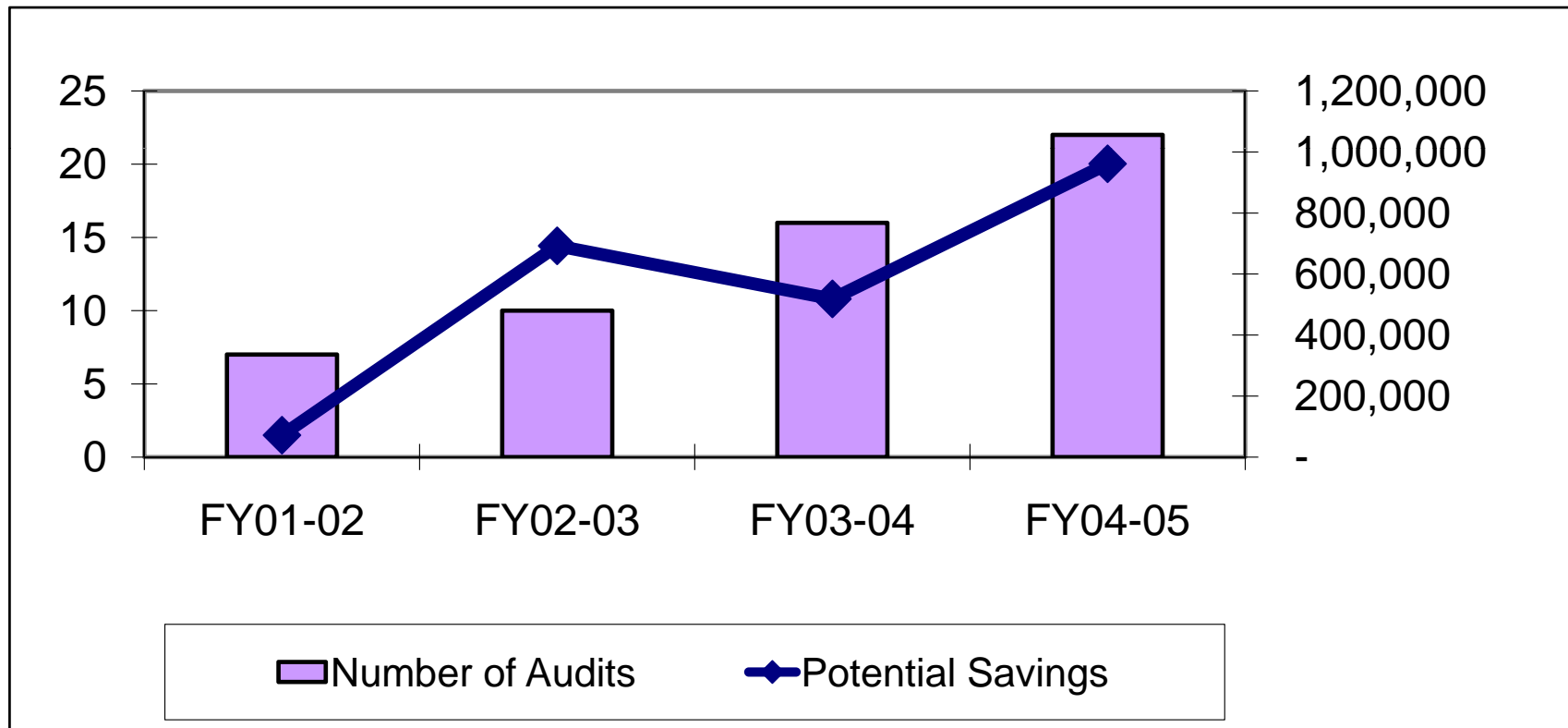
# Energy Management Program



# KPPC Energy Audits & Cost Savings

Audits

Dollars



# Other Business Cost Opportunities?

---

**Energy**

**Non-product Input**

**Quantities**

**Supply chain**

**Non-product Output (waste)**

**Reactivity**

**Regulations**

**Competition**

**Market / Customer Requirements**

**Global Economy**

**Gasoline Prices**

# Coordinate Collaborative Efforts for Technology Diffusion

---

**Customer-based Interest/Demand is Increasing for “vegetable-based” dielectric fluids**

**Transformer Manufacturing & Production Equipment & Testing Results**

**Provide Information for Electric Coops**

**Establish Pilot/Demonstration Sites @ Opinion Leader Electric Coops**

**Full-scale Implementation**

**Bio-based Product Deployment @ Multiple Electric Coops**

# Development & Involvement of Stakeholder Groups

---

## Identify Stakeholders & Opinion Leaders:

**KPPC**

**Kentucky Assoc. of Electric Cooperatives (KAEC)**

**United Utility Supply Cooperative Corp (UUSCC)**

**KREC**

**Rural Electric Coops**

## Identified Needs

**Resource depletion (petroleum)**

**Environmental impacts**

**Renewable, bio-based substitutes can ease the depletion problem & avoid or greatly reduce environmental consequences**

# Convergence of Environmental & Economic Issues

---

**High natural gas prices - Supply & demand imbalance**

**New all-time peak electric demand**

**Rising energy costs**

**Large transmission investments on horizon**

**Reliability**

**Environmental issues – air & water**

**Electricity competition did not deliver everything**

**Investment risks associated with climate change**

# Benefits of an Environmental Management System

---

**Organizational improvements & efficiencies**

**Diverse range of financial savings & payback periods for investments**

**Improved communications, skills, knowledge & attitudes**

# Benefits of an Environmental Management System

---

**New business & customer “delight”**

**Improved:**

**Environmental performance**

**Legal compliance assurance**

**Energy & material efficiencies**

**Enhanced image**

# Environmental Excellence!

---

Is everyone working from the latest “how we do things” procedures?

***SAY WHAT YOU DO,  
DO WHAT YOU SAY!***

***IF IT MOVES, TRAIN IT!  
IF IT DON'T MOVE, CALIBRATE IT!***

***BUT NO MATTER WHAT YOU DO,  
DOCUMENT IT!!!***

# KPPC Contact Info

Cam Metcalf ..... [cam.metcalf@louisville.edu](mailto:cam.metcalf@louisville.edu)

**Kentucky Pollution Prevention Center (KPPC)**

**420 Lutz Hall**

**University of Louisville**

**Louisville, Kentucky 40292**

**Phone: (502) 852-0965**

**Fax: (502) 852-0964**

**Web Site: [www.kppc.org](http://www.kppc.org)**

