



Strategic Energy Management (SEM) with ISO 50001 and 50001 Ready

**ORNL 50001 Ready Training
Webinar Series, Session 8
March 30, 2021
10:00 a.m. to 12:30 p.m.**

Agenda – Session EIGHT



- Welcome, Safety, and Housekeeping
- Today's Content: *Wrap Up and Next Steps*
 - Review of all 25 task for 50001 Ready
 - Remember to use the 50001 Ready navigator
 - Where can we go from here?
- Webinar Wrap Up
- Kahoot Quiz Game
- Q&A

But first,
a POLL!



Polling Question 1

Polling Question

- 1) On a scale of one to five, how would you rate the value of this Better Plants training on 50001 Ready based energy management?
 - A. FIVE – Excellent and we will apply most this
 - B. FOUR – Very good and we plan to use some of this
 - C. THREE – Okay, and we may implement a few things
 - D. TWO – Not what I expected and limited value
 - E. ONE – No value to my organization
 - F. ZERO – “Why, oh why did I not take the BLUE pill?!?!”
 - G. It would have been great except for that crazy presenter....



Welcome



- Welcome to the Virtual INPLT 50001 Ready webinar training series
- Eight, 2-1/2 hour webinars, focused on Strategic Energy Management (SEM), in general, and the ISO 50001 standard and 50001 Ready Navigator, in particular
- The webinars will help you understand the why and how of SEM and the 50001 Ready Navigator tool
- Thank you for your interest!



Safety and Housekeeping

- Please make sure that your surroundings are safe:
 - If you are driving, please use hands free mode
 - If you are in a building, be sure you know the exit paths
 - If you are at home, be sure there are no distractions
- You are welcome to ask questions at any time during the webinar
- When you are not asking a question, please MUTE your mic and this will provide the best sound quality for all participants
- We will be recording all these webinars and by staying on-line and attending the meeting you are giving your consent to be recorded
 - A link to the recorded webinars will be provided, afterwards



Team Review



- Our Team for this 50001 Ready Training



Our 50001 Ready Training Group

■ Information on our 50001 Ready Training Group:

- 26 different organizations, many with multiple sites
- Many with global footprints
- Size of sites range from 100,000 square feet up to 586 acres
- A wide range of products and markets:
- Primary Energy types:
 - Electricity
 - Natural Gas
 - Liquid Propane
 - Diesel and other Fuel Oils
 - Some solar, some biogas, and some CHP



Energy Consulting
Cheese & Whey
Plastics
Composites
Chemicals
Automotive vehicles
Automotive batteries
Automotive fuel systems
Electronics
Fiberglass
Flooring materials
Organic foods
Packaging
Glass
Craft beers
City government
Wastewater treatment
Industrial machinery
Shrimp peeling equipment
Filtration media
Tape
Medical

- Today's Content

Review Tasks 1 - 25

50001 Ready: Review Previous Tasks

Context of the Organization

1. An EnMS and your Organization
2. People and Legal Requirements
3. Scope and Boundaries

Leadership

4. Management Commitment
5. Energy Policy
6. Energy Team and Resources

Planning

7. Risks to EnMS Success
8. Energy Data Collection and Analysis
9. Significant Energy Uses
10. Improvement Opportunities
11. Energy Performance Indicators (EnPIs) and Baselines (EnBs)
12. Objectives and Targets
13. Action Plans for Continual Improvement

Support

14. Competence and Training
15. Awareness and Communication
16. Documenting the EnMS

Operation

17. Operational Controls
18. Energy Considerations in Design
19. Energy Considerations in Procurement

Performance Evaluation

20. Monitoring and Measurement of the EnMS
21. Monitoring and Measurement of Energy Performance Improvement
22. Internal Audit
23. Management Review

Improvement

24. Corrective Action
25. Continual Improvement





Building a foundation for your EnMS



Regarding my EnMS, what are the:

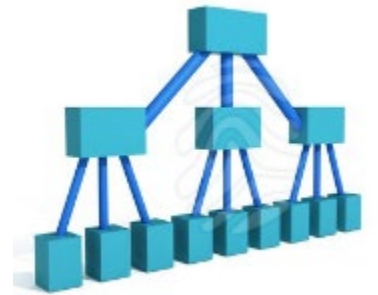
- *Risks, opportunities and strategic issues;*
- *Legal and other requirements;*
- *Interested parties;*
- *Scope and boundaries?*

Section 1: Context of the Organization

Section 1: Context of the Organization

Task 1 An EnMS and Your Organization

We determine the strategic issues that affect our ability to improve energy performance and achieve the goals of our 50001 Ready energy management system.



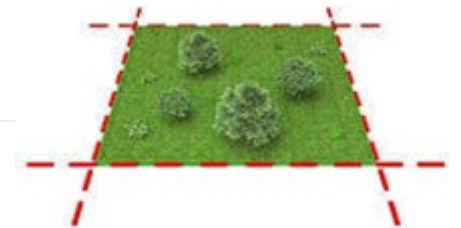
Task 2 People and Legal Requirements Affecting the EnMS

We determine the interested parties and energy-related legal and other requirements relevant to our energy performance and the energy management system. At defined intervals, we review these requirements and evaluate our compliance with them.

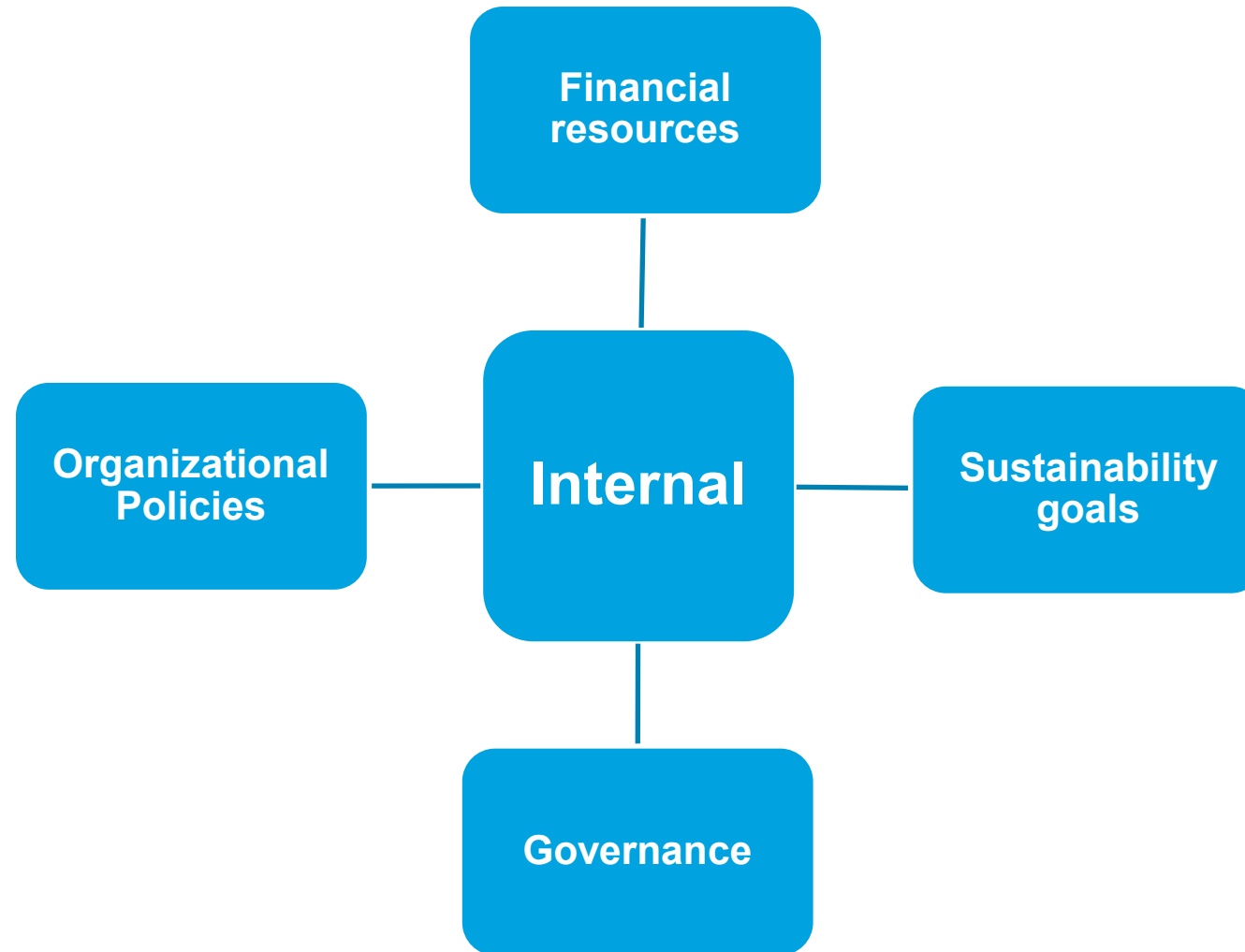


Task 3 Scope and Boundaries

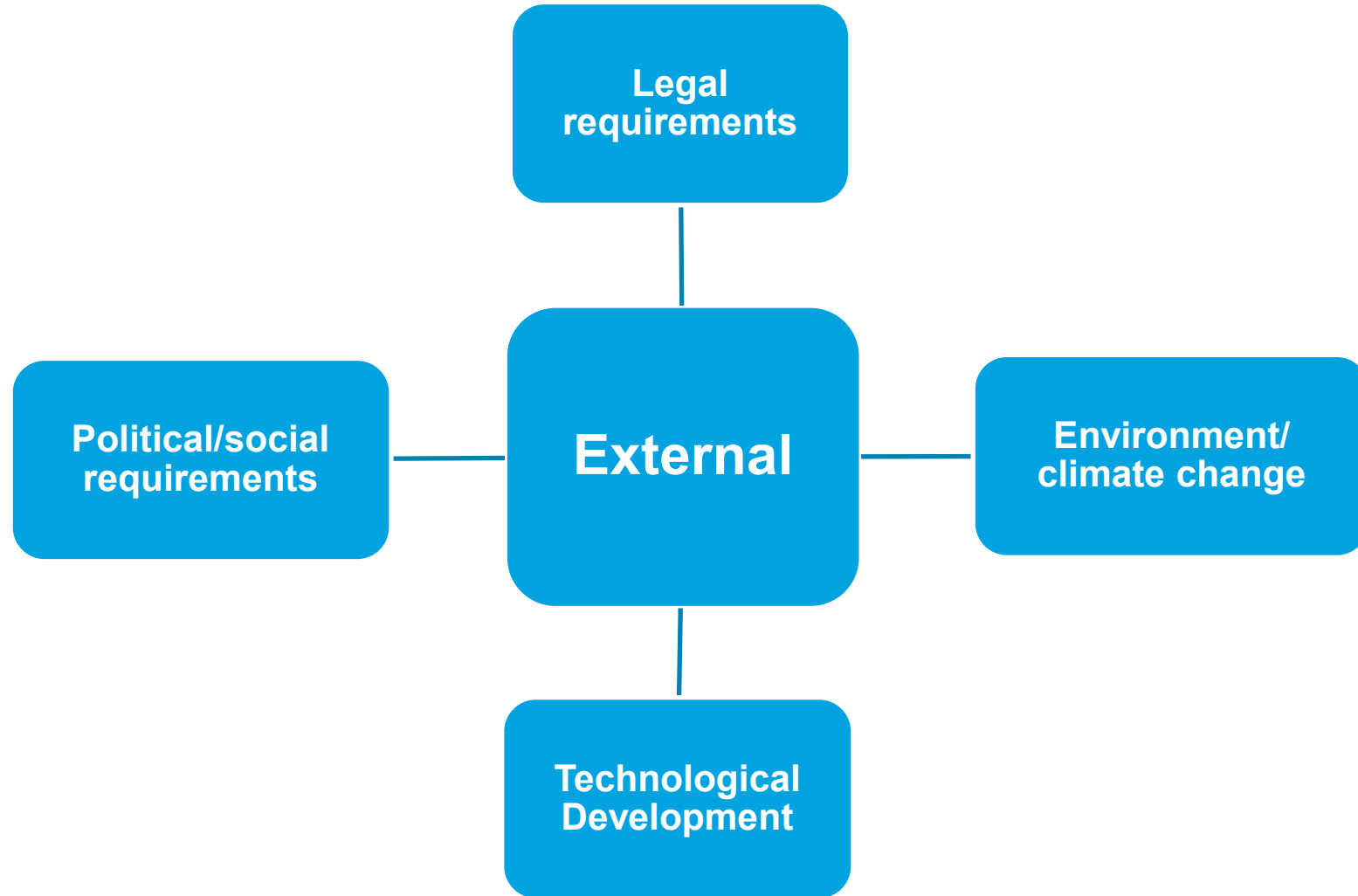
We have documented and approved the scope and boundaries of our 50001 Ready energy management system.



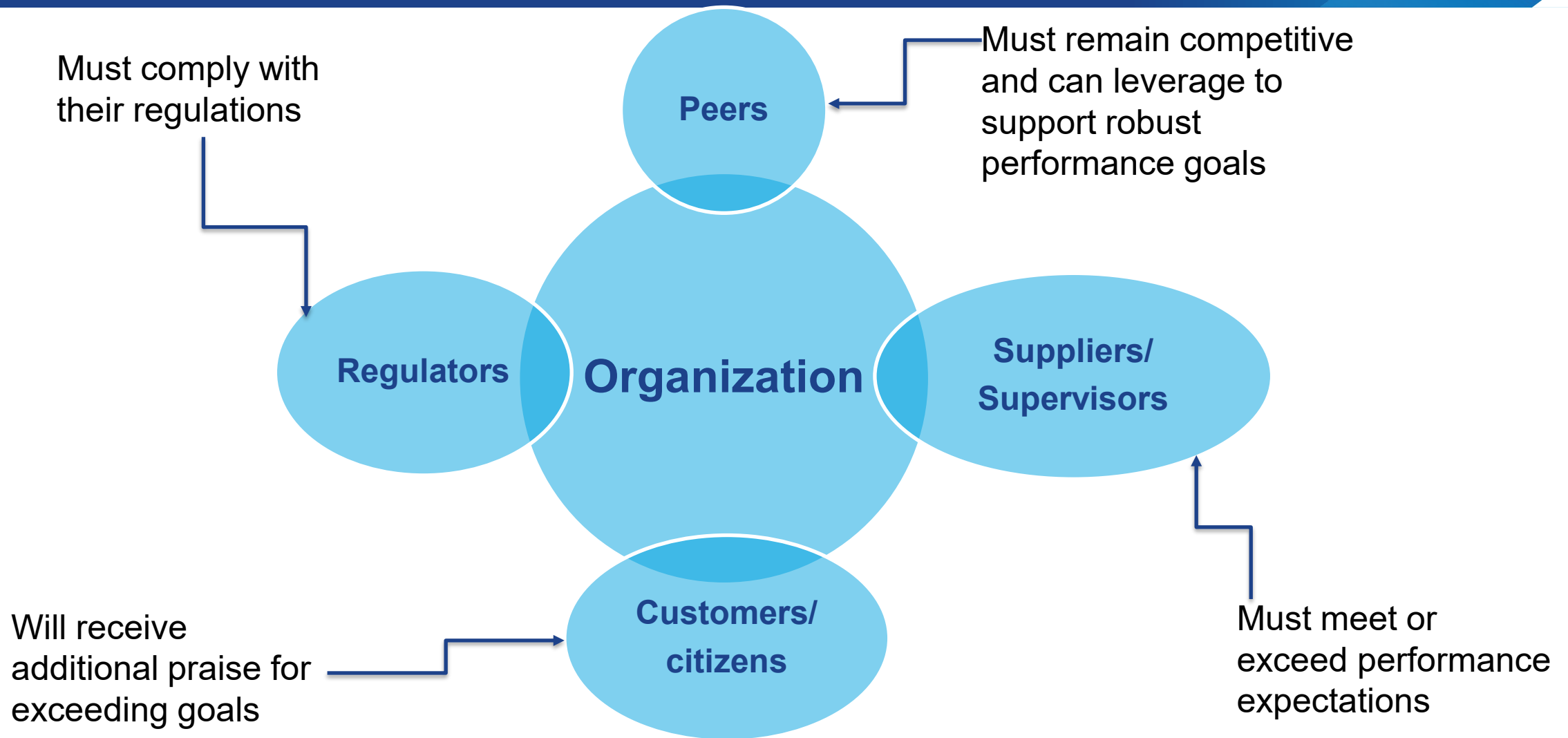
Task 1: Internal Issues



Task 1: External Issues



Task 2: Interested Parties, Plus Requirements



Task 3: Scope and Boundaries



Section 2: Leadership (Task 4 - 6)



Commitment and guidance from the top



Is there strong top management commitment to the EnMS?

Is there a clear and well-communicated energy policy?

Are there adequate resources for the energy team to carry out the implementation of the EnMS?

Section 2: Leadership

Section 2: Leadership

Task 4 Management Commitment Our top management demonstrates leadership and commitment to continual improvement of energy performance and the effectiveness of the 50001 Ready system.



Task 5 Energy Policy We have an energy policy statement, which has been approved by top management and communicated across the organization.



Task 6 Energy Team and Resources We have an energy team authorized by top management to oversee the energy management system. Responsibilities and authorities are assigned and communicated, and processes are in place to identify and provide resources.



Task 4: Questions to Ask

- Where does top management reside?
 - At an individual sites?
 - At a central office?
 - At a level above the central office?
- Who sets the energy policy?
- Who will do the management review?
- Who will establish and confirm management commitment?
 - Use the 50001 Ready Navigator Task 4 playbook resource

Task 4: Management Responsibility

- ✓ Ensure that scope and boundaries are established
 - ✓ Ensure the energy policy and objectives and targets are established
 - ✓ Ensure integration of EnMS requirements into business process.
 - ✓ Ensures that actions plans are approved and implemented
 - ✓ Ensure adequate resources are available
 - ✓ Communicate the importance of effective energy management and conforming to EnMS requirements
 - ✓ Ensure the EnMS achieves intended outcomes
- ✓ Promote continual improvement of energy performance and the EnMS
 - ✓ Ensure the formation of the energy team
 - ✓ Direct and support persons to contribute to the effectiveness of the EnMS and energy performance improvement
 - ✓ Support other management roles to demonstrate leadership
 - ✓ Ensure that EnPI(s) appropriately represent energy performance
 - ✓ Ensure that processes are established and implemented to identify and address changes affecting the EnMS and energy performance

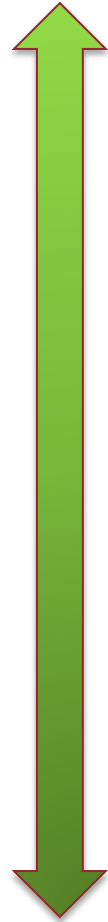
Task 5: Energy Policy Requirements



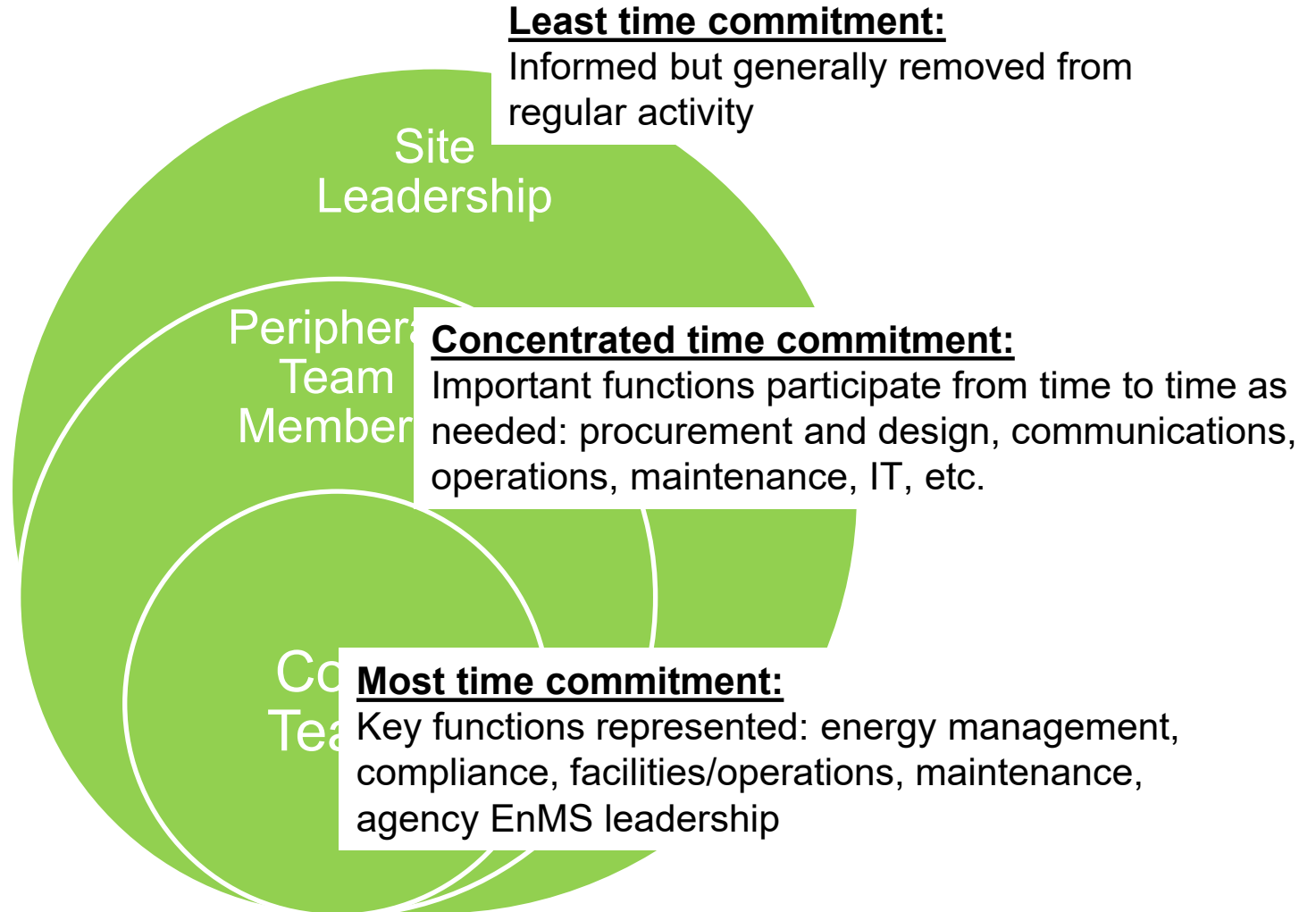
- Is appropriate to the purpose of the organization
- Provides a framework for setting and reviewing objectives and energy targets
- Includes a commitment to ensure the availability of information and necessary resources to achieve objectives and energy targets
- Includes a commitment to satisfy applicable legal requirements and other requirements
- Includes a commitment to continual improvement of energy performance and the EnMS
- Supports the procurement of energy efficient products and services that impact energy performance
- Supports design activities that consider energy performance improvement.



Task 6: Energy Team Roles and Time Commitment



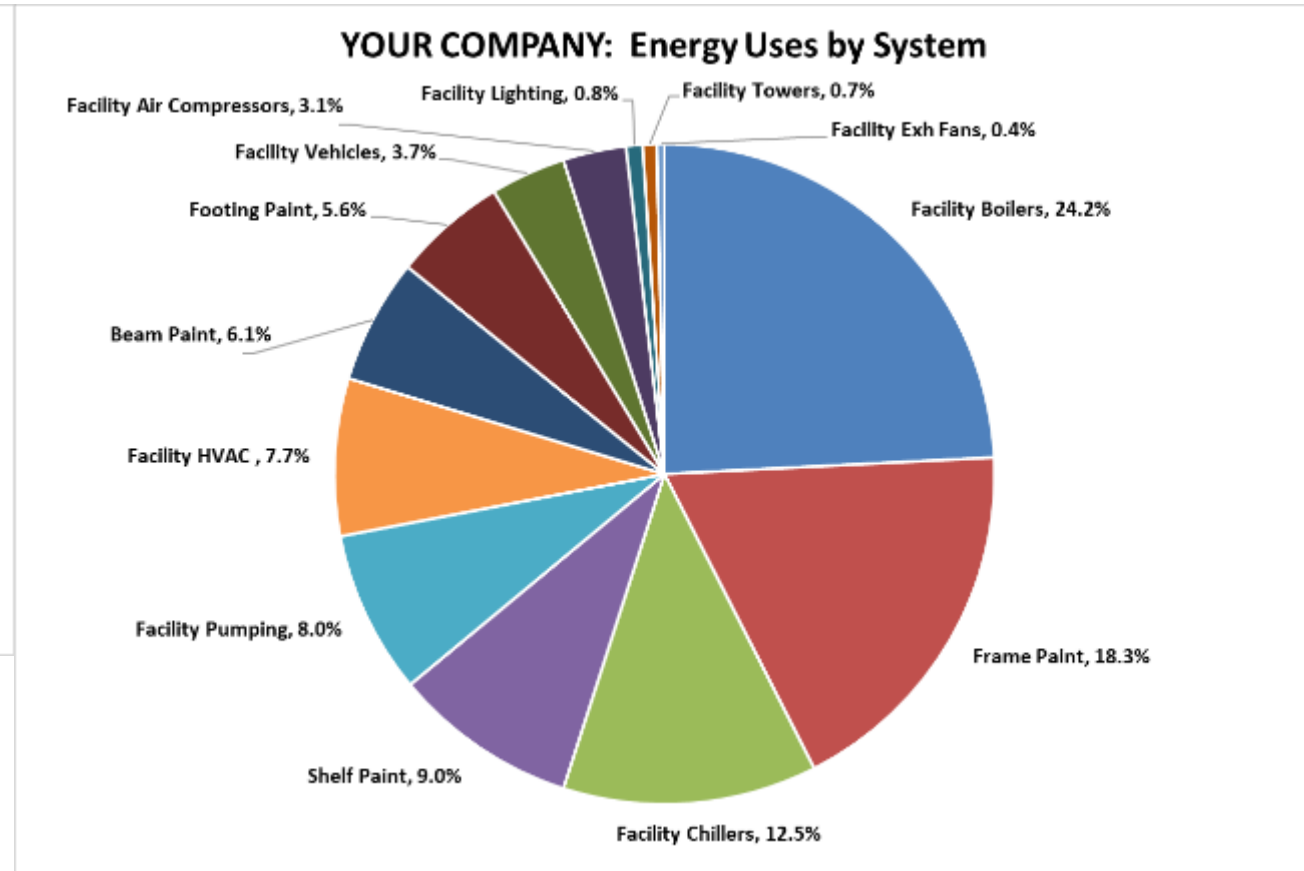
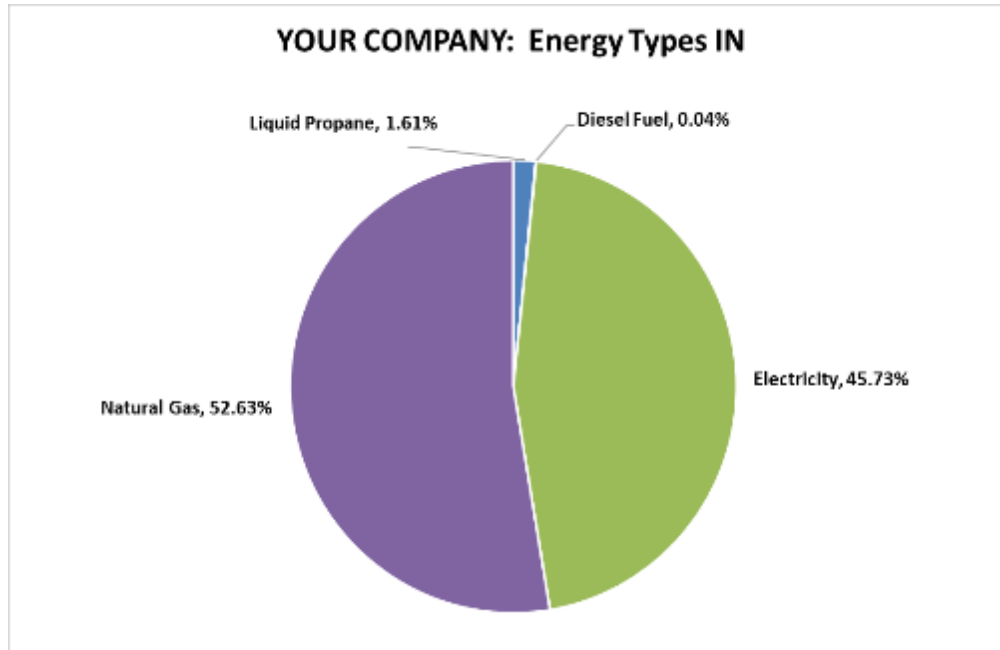
Where does the central office fit in?



Section 3: Planning (Tasks 8-13) – Two Key Pies



Understanding your energy performance



What energy comes into my site?

Where does all this energy go? [SEUs]

What are my EnPIs and EnBs?

What are my objectives, energy targets & action plans?

Section 3: Planning

Section 3: Planning

Task 7 Risks to EnMS Success

We determine strategic risks and opportunities to ensure that our organization can achieve the intended outcomes of our energy management system and energy performance improvement. We plan and implement actions to address these risks and opportunities and evaluate the effectiveness of the actions taken.



Task 8 Energy Data Collection and Analysis

We identify our energy sources and energy uses, have a data collection plan in place, and collect related energy and relevant variable data. We ensure the accuracy and repeatability of measurements. We analyze our energy use and consumption data.



Task 9 Significant Energy Uses (SEUs)

We determine our significant energy uses (SEUs), identify and monitor their relevant variables and energy performance, and identify the persons that affect the SEUs. We have a process to review and update SEU data and related information, including our methods and criteria to determine that an energy use should be an SEU.



Task 7: Key Terms

- Risk: Something that poses a threat
- Opportunity: Something that has the potential for a positive impact



The Energy Team defines methods for identifying and assessing these items

Task 8: Key Terms



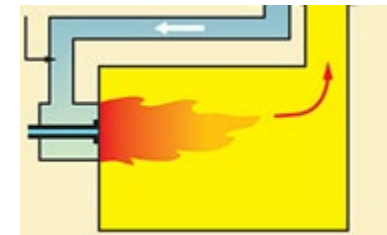
- Energy Source

- Electricity, natural gas, fuel oil, diesel fuel, liquid propane, renewables, etc.



- Energy Use (or user)

- Machinery, equipment, processes: Boiler, chiller, fan, pump, lighting, air compressor, paint booth, air handling unit, motors, etc.



Task 8: Key Terms (continued)

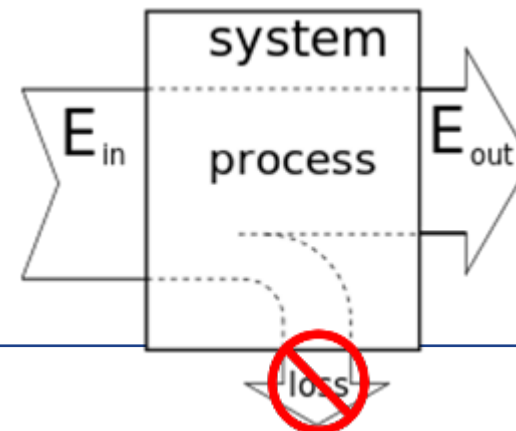
- Energy Consumption

- A quantity of energy: kilowatt hours, dekatherms, gallons, MMBTUs, etc.



- Energy Efficiency

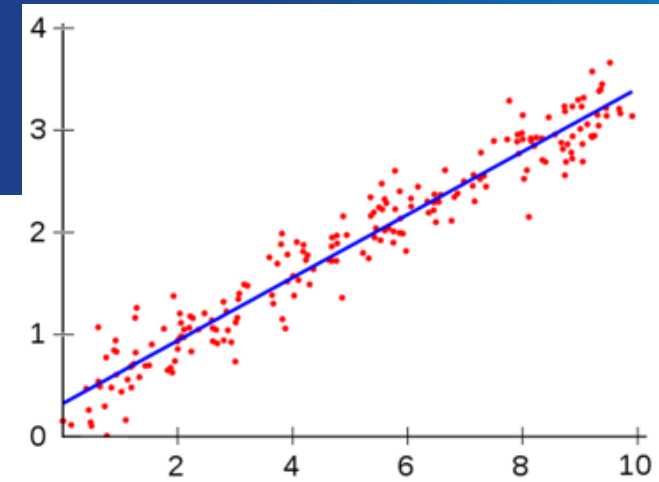
- A ratio of energy output to energy input, typically expressed as a percentage



Task 8: More Key Terms

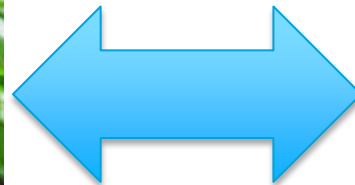
■ Relevant Variables

- Impacts energy performance, i.e., relevant
- Typically changes, i.e., variable
- Examples: weather conditions (heating degree days, cooling degree days, average outside temperature, humidity, working hours, occupancy, production output, etc.)



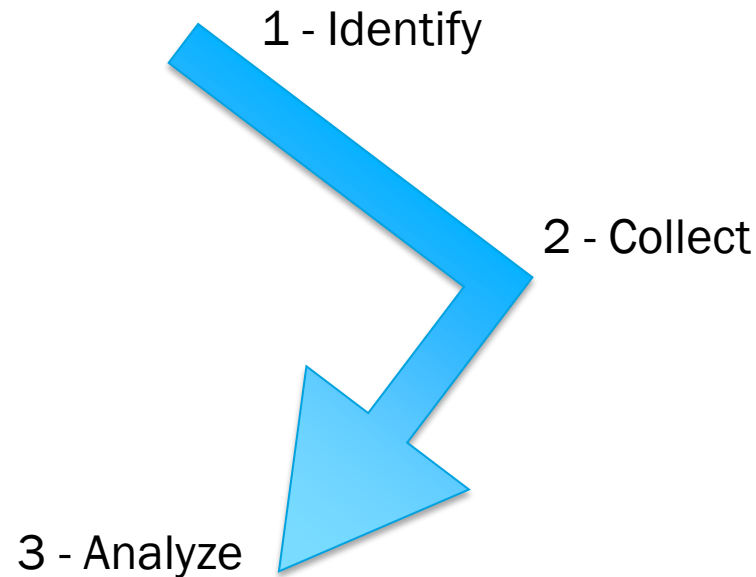
■ Normalization

- Allows for comparison of apples to apples
- Accounts for changes so that you can properly compare energy performance to energy baselines



Task 8: Delegating Roles

- Types of data needed
 - Total energy consumption for all sources
 - Energy consumption by users
 - Square footage & occupancy
 - Relevant variables
 - Product volumes



- Sources of data
 - Utility bills
 - Sub-metering
 - Site floor plans
 - Weather data
 - Process flow charts
 - Production data
 - End user equipment specs

Who will be responsible for attaining this information?

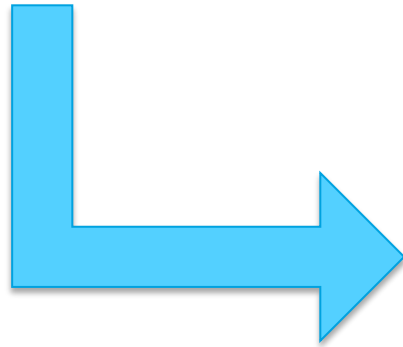
Who will be responsible for cleaning/analyzing the data?

Where will we store the data?

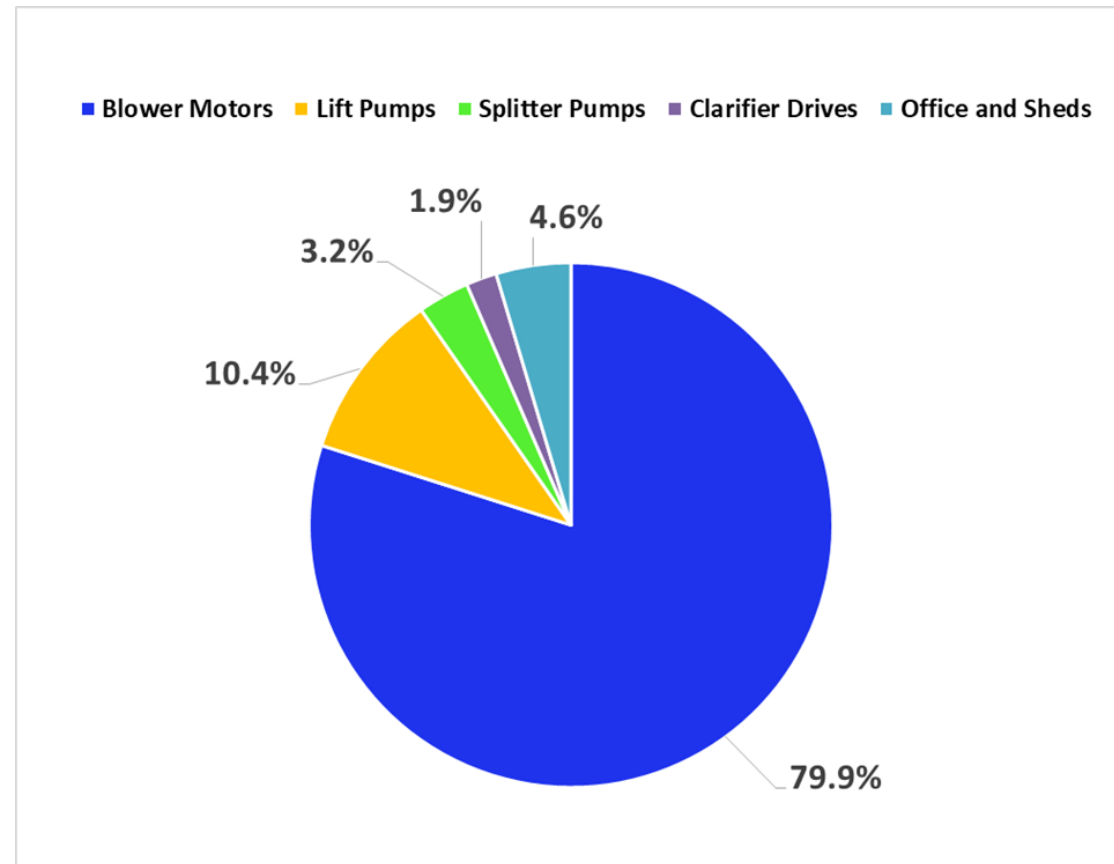
What is our naming convention to avoid misunderstandings about most current information?

Task 9: Key Terms

- Significance is determined by your organization



- 1) SEUs can be facilities, systems, processes, or equipment.
- 2) SEUs – Consider consumption AND opportunity for improvement



Task 9: SEUs Require Lots of Work

- Each selected SEU will require work in these areas:
 - Task 12, ISO section 6.2.2 Objectives and energy targets
 - Tasks 8 & 9, ISO section 6.3 Energy review (3x)
 - Task 8, ISO section 6.6 Planning for collection of energy data (3x)
 - Task 17, ISO section 8.1 Operational planning and control (2x)
 - This entire section is focused on SEUs
 - Task 19, ISO section 8.3 Procurement
 - Task 20 & 21, ISO section 9.1 Monitoring, measuring, analysis and evaluation of energy performance, General
 - Must include the operation of SEUs

There are at least 11 things to do for each selected SEU!!

Section 3: Planning (continued)

Task 10 Improvement Opportunities We identify and prioritize energy performance improvement opportunities and have processes in place to update them.



Task 11 Energy Performance Indicators (EnPIs) and Baselines (EnBs) We identify energy performance indicators and energy baselines to measure and monitor our energy performance and to demonstrate energy performance improvement. We have a methodology for determining and updating them.



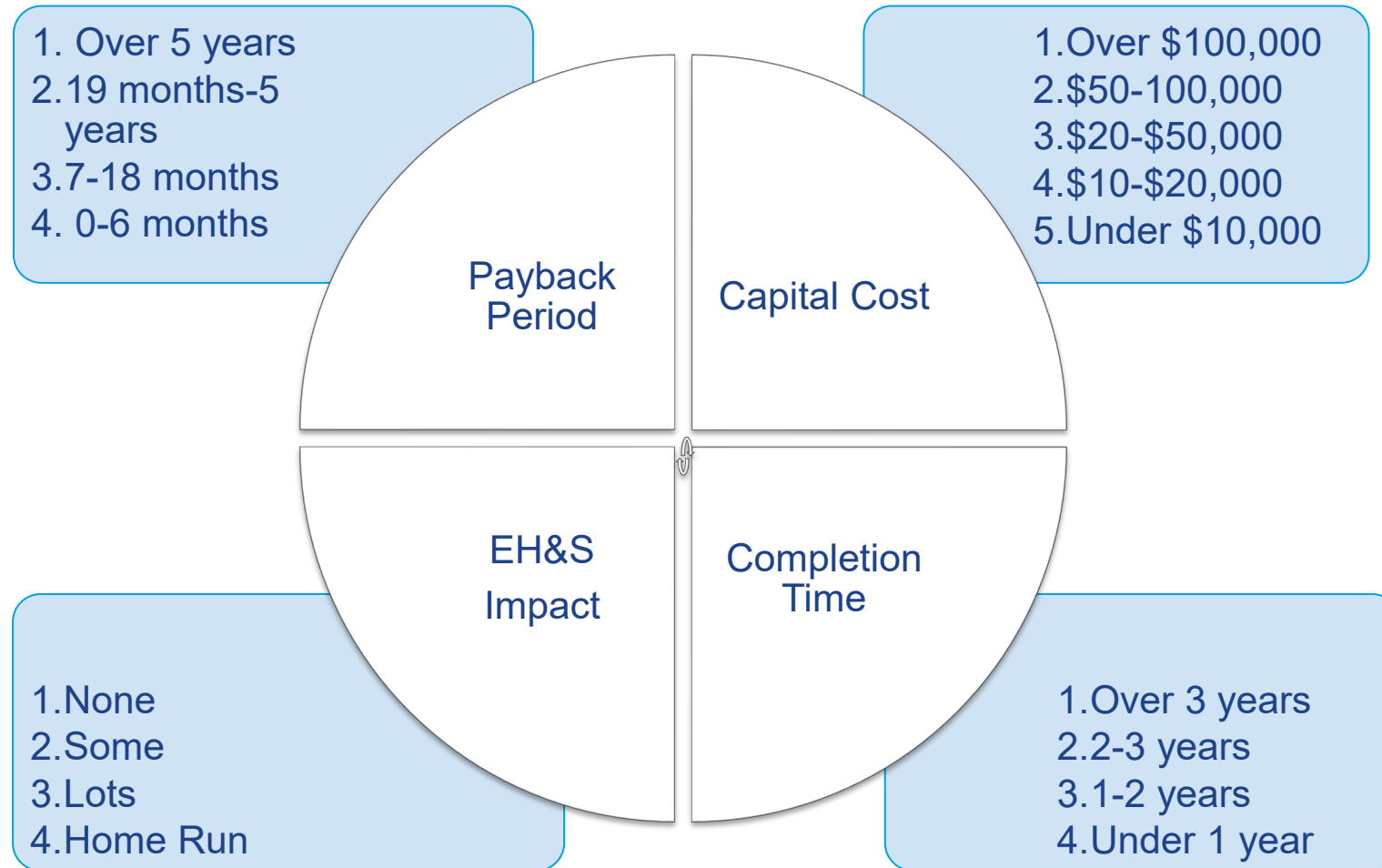
Task 12 Objectives and Targets We establish objectives and energy performance targets.



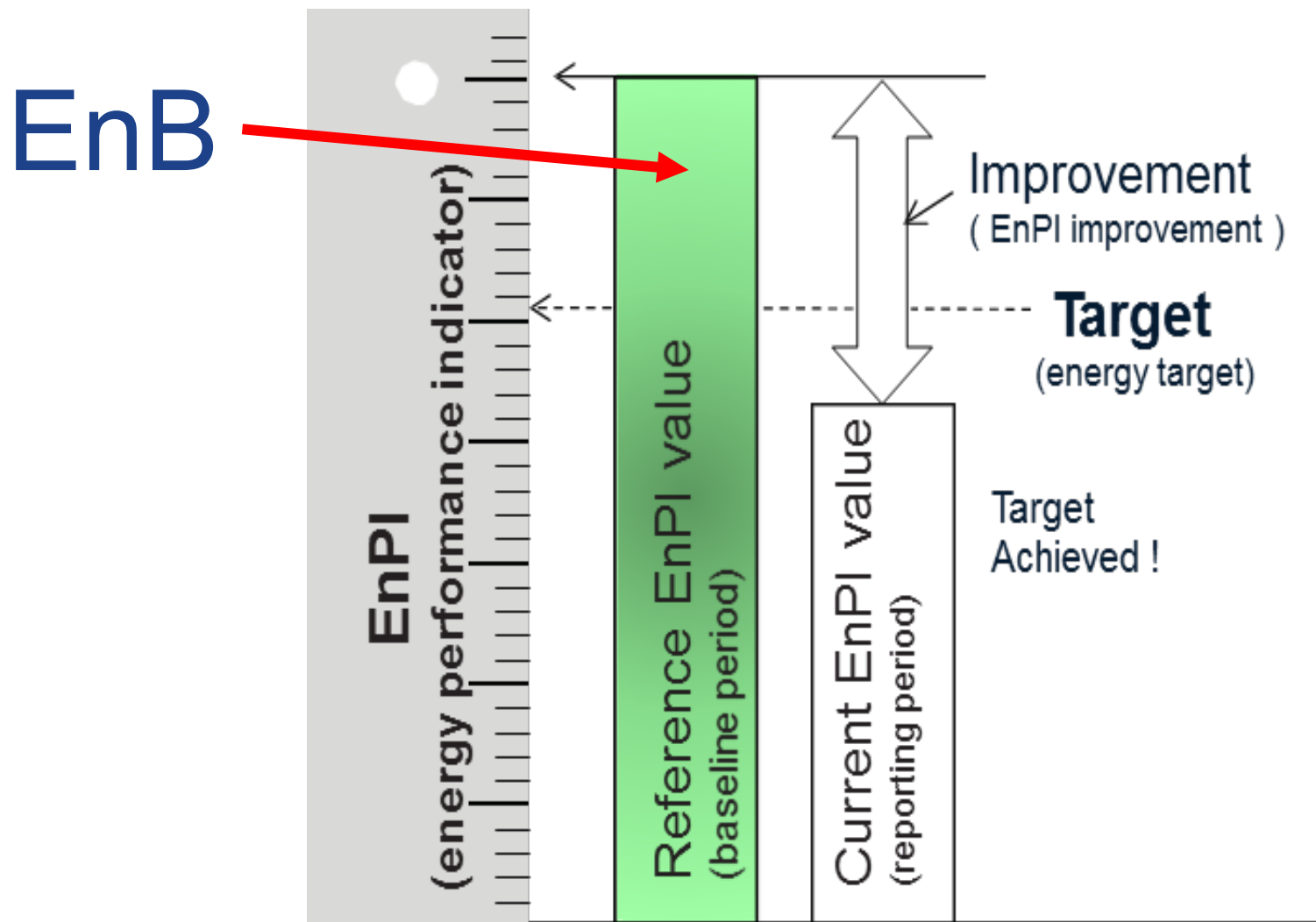
Task 13 Action Plans for Continual Improvement We develop action plans and implement improvement projects to achieve our objectives and energy targets.



Task 10: Example of Ranking Criteria

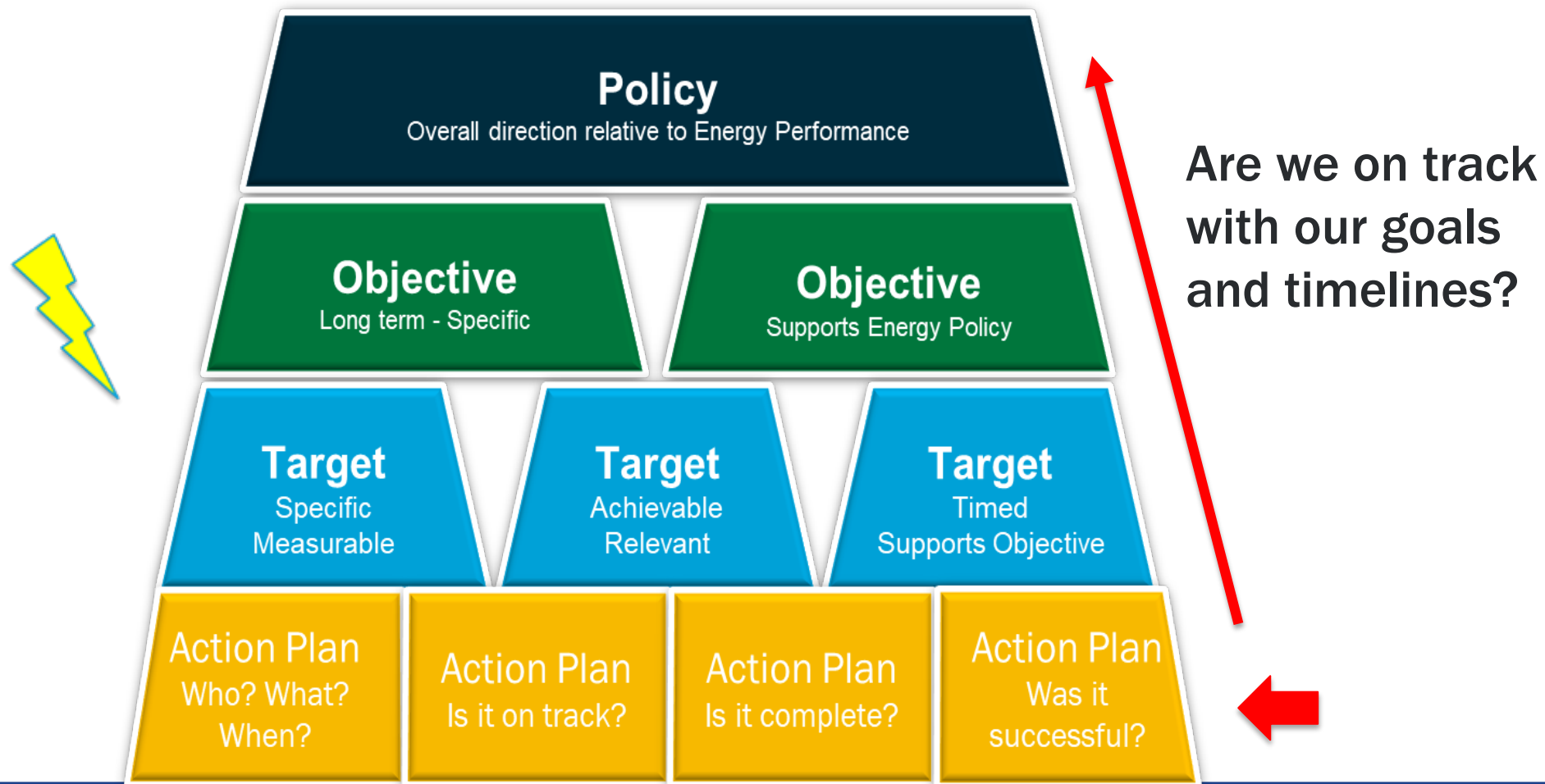


Task 11: EnPIs Relative to EnBs

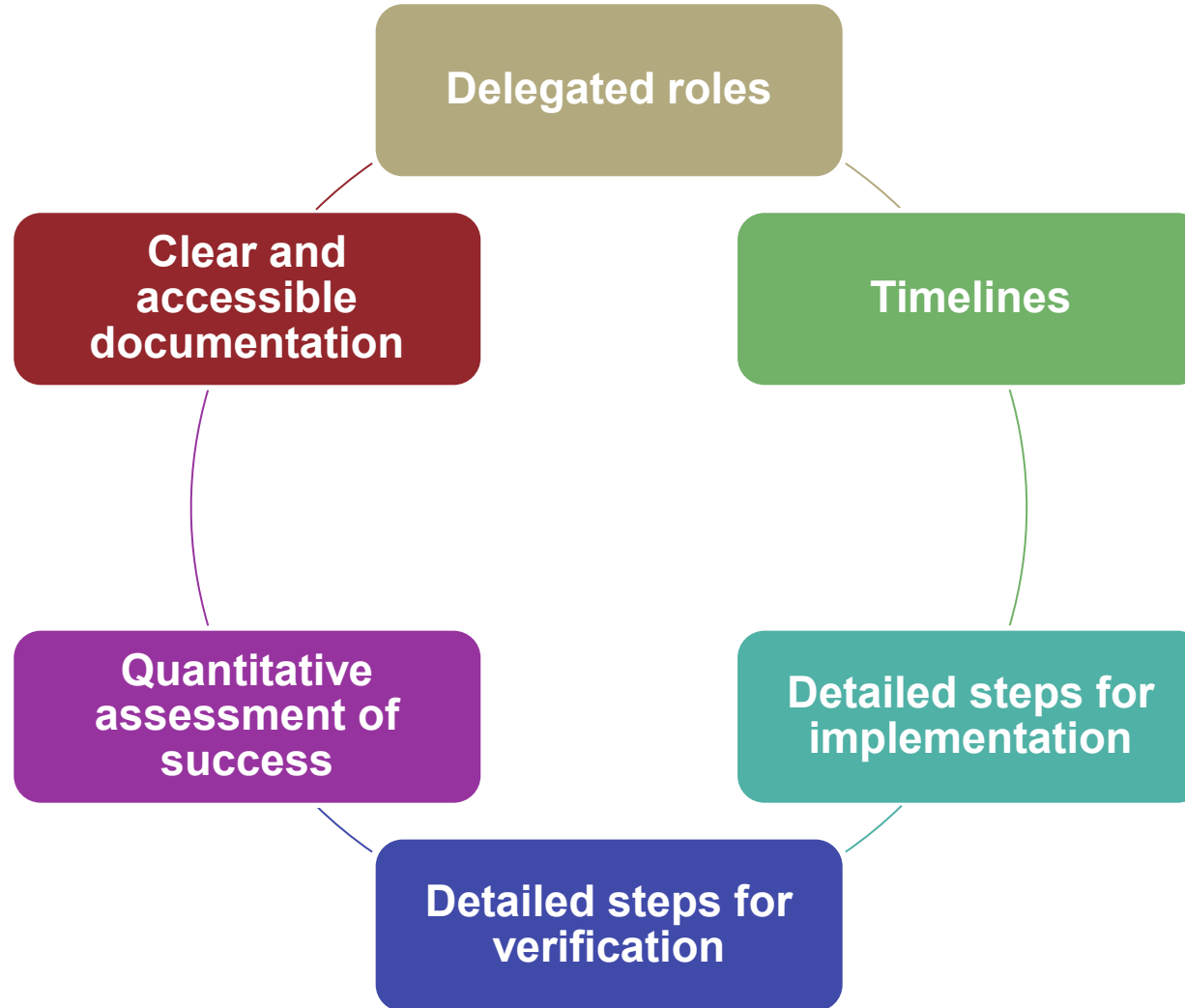


Task 12 & 13: Building the Pyramid

Planning our energy improvement pyramid:

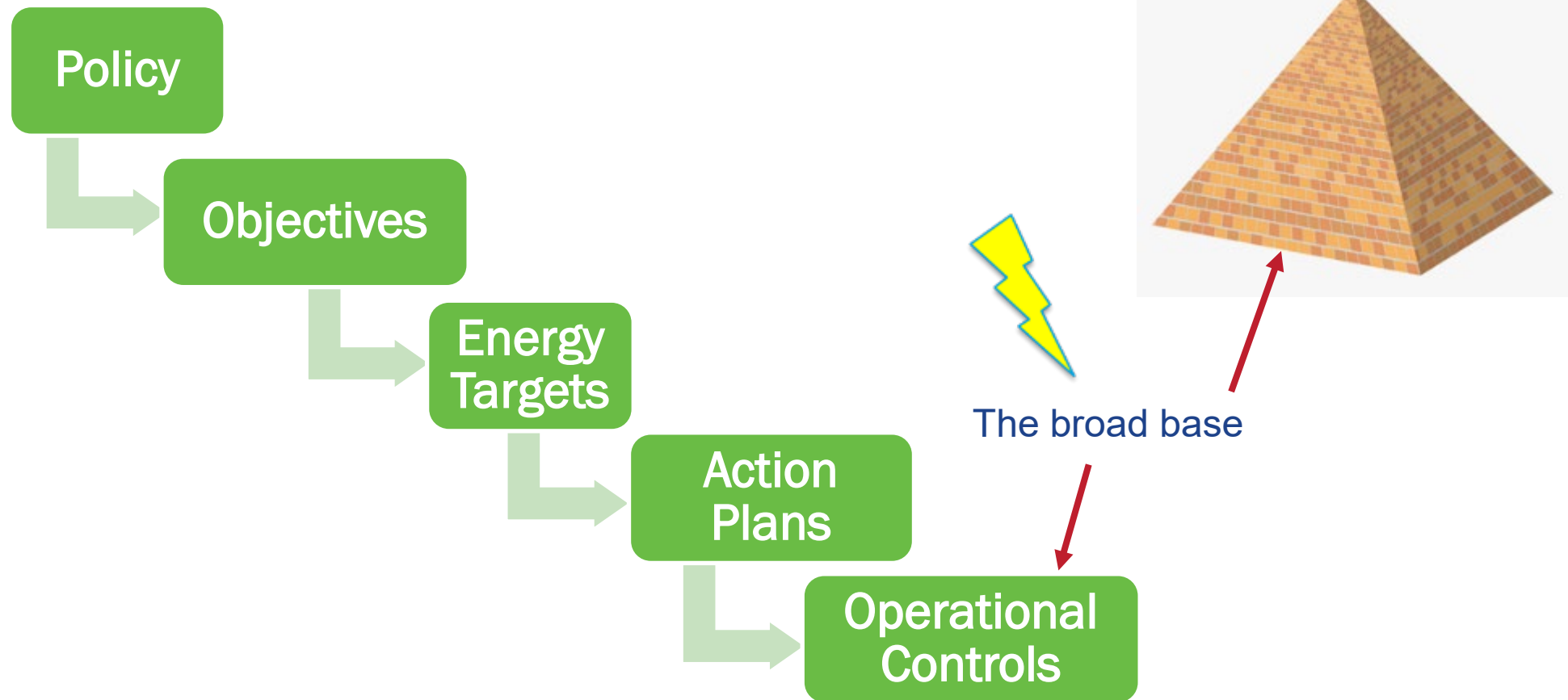


Task 13: What makes a robust action plan?



Tasks 10 - 13: The Big Picture

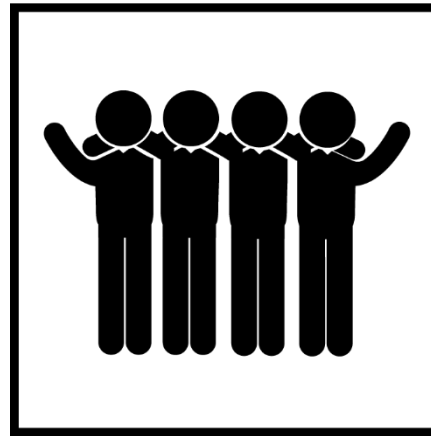
- Building the energy success pyramid starts with a wide base of small actions that build to the completion of energy policy



Section 4: Support (Tasks 14 – 16)



Ensure all team members who impact energy performance understand their role



Who impacts energy performance and our EnMS?

Are they aware, competent, trained, documented?

Is our training for them effective?

Do we maintain good documentation and records of our EnMS?

Section 4: Support

Section 4: Support

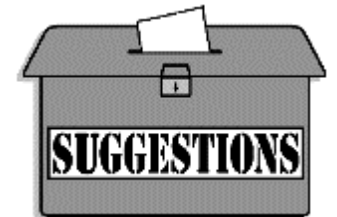
Task 14 **Competence and Training**

We ensure the competence of personnel whose work affects our energy performance and energy management system. We evaluate the effectiveness of actions taken to acquire competencies. We retain appropriate records of competencies and training.



Task 15 **Awareness and Communication**

Our personnel and on-site contractors are aware of our energy policy and their energy-related roles and responsibilities. We have processes in place for internal and any applicable external energy management system communications.



Task 16 **Documenting the EnMS**

We document information we determined is needed to ensure energy management system effectiveness and demonstrate energy performance improvement, as well as that suggested by the guidance of the 50001 Ready Navigator. We have processes in place for creating, updating, and controlling our documented information.

**Think Missouri...
The “Show Me”
State**

Task 14: Who Needs Competence

including
tion, etc.

- Boiler Technicians
- HVAC Technicians
- Process Operators
- Energy team members
- Data collectors
- Others



Task 15: Communications Are Ongoing

Ongoing Communication Topics:

- Energy policy
- Importance of energy management
- Energy management responsibilities and authorities
- Energy objectives
- Energy performance successes



GET INPUT:

Have a method or system to get input on the EnMS from employees and contractors.



Task 16: Key Terms

Document:

Information that guides action or communicates expectations

Record:

Captures activities performed as evidence of the activity

3.3.5

documented information

information required to be controlled and maintained by an organization (3.1.1) and the medium on which it is contained

Task 16: Documentation

- ISO 50001 tells you what needs to be documented
- The new term is:
 - **DOCUMENTED INFORMATION**

This appears 18 times in the ISO 50001 standard:

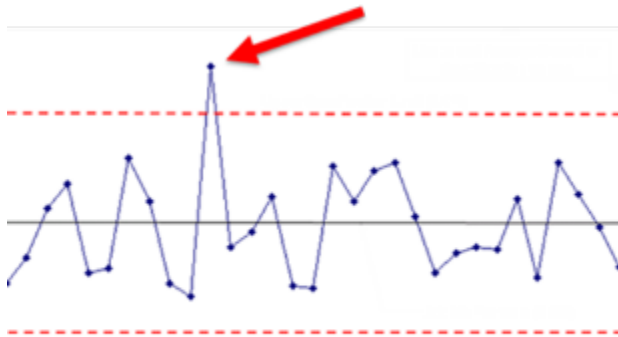
...shall retain documented information (see [7.5](#))...



Section 5: Operation (Tasks 17 – 19)



Operate, maintain, design and procure to optimize energy performance



Do I have good operational and maintenance controls for my SEUs and action plans?

Do my operators know what to do when energy expectations are not met?

Are design and procurement teams are engaged?

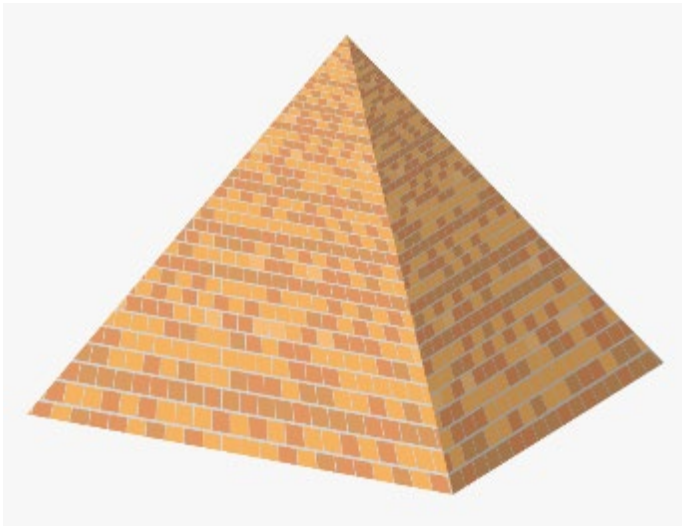
Section 5: Operation

Section 5: Operation

Task 17 **Operational Controls**

We plan and control the processes related to our significant energy uses (SEUs) and action plans and set operation and maintenance criteria where there are risks of significant deviations in energy performance.

We operate the SEU and action-plan related processes in accordance with the criteria and communicate the criteria to relevant personnel. We control planned changes, along with outsourced processes related to SEUs.



Section 5: Operation (continued)

Section 5: Operation

Task 18 Energy Considerations in Design We consider energy performance improvement opportunities and operational controls when designing new, modified, or renovated sites, equipment, systems, and processes.

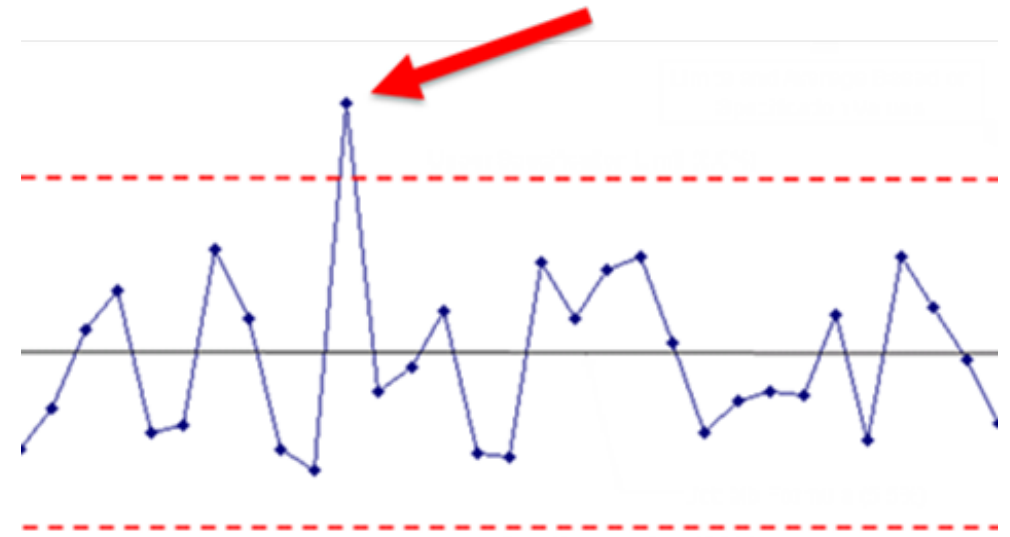


Task 19 Energy Considerations in Procurement We establish energy performance criteria spanning the operating life for purchases affecting energy performance, inform suppliers that this is a factor in procurement, and define and use specifications for energy supply purchases.



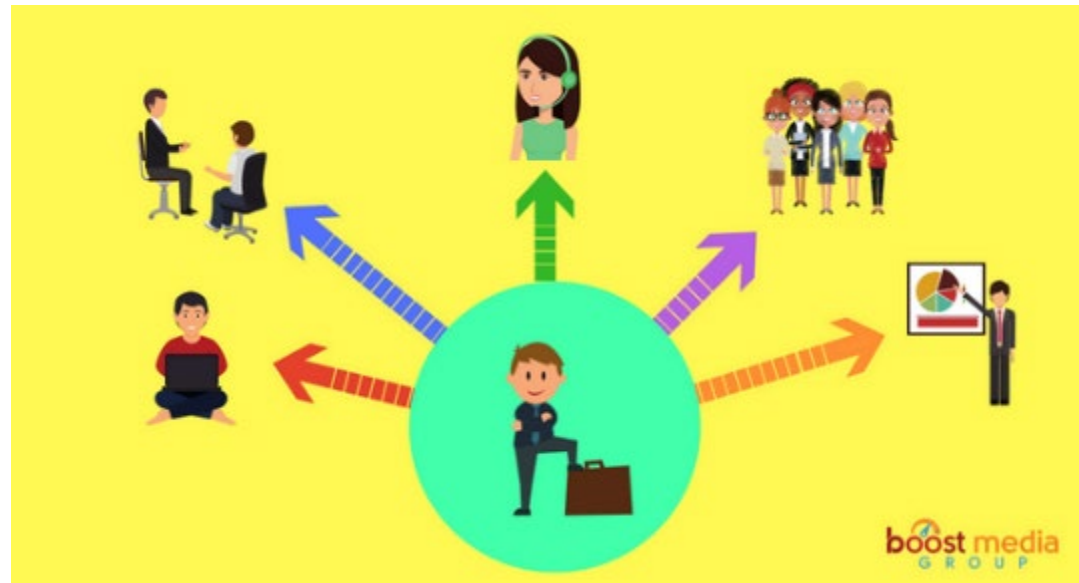
Task 17: Determining Appropriate Controls

1. Document all current official operating practices for each SEU.
2. Map processes that use SEUs or have related action plans for improvement.
3. Identify opportunities for streamlining SEU controls.



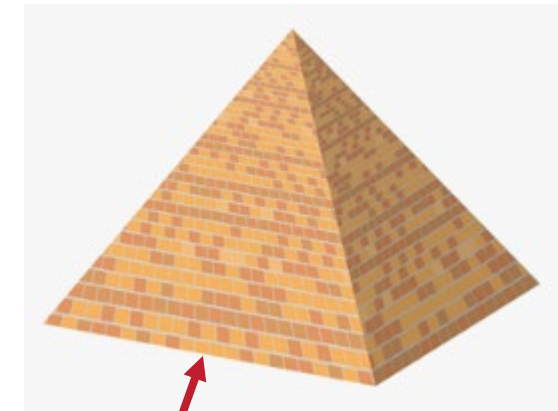
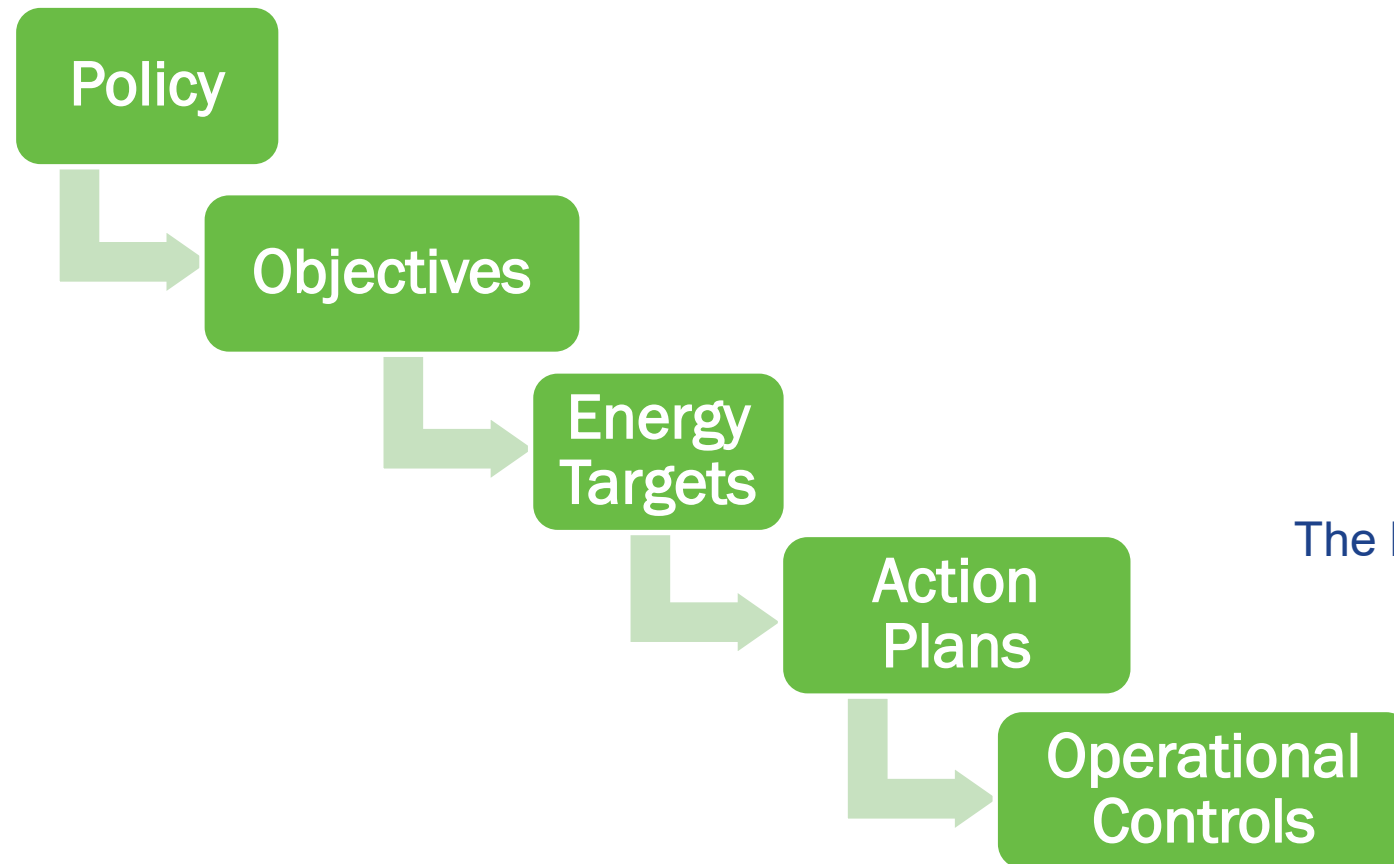
Task 17: Delegate Responsibilities

- Communications and training for all related personnel
- Verification that best operations practices are followed
- Data collection for verification process



Tasks 1-17: The Big Picture

- Building the energy success pyramid starts with a wide base of small actions that build to the completion of energy policy



The broad base

Task 18: Considerations in Design

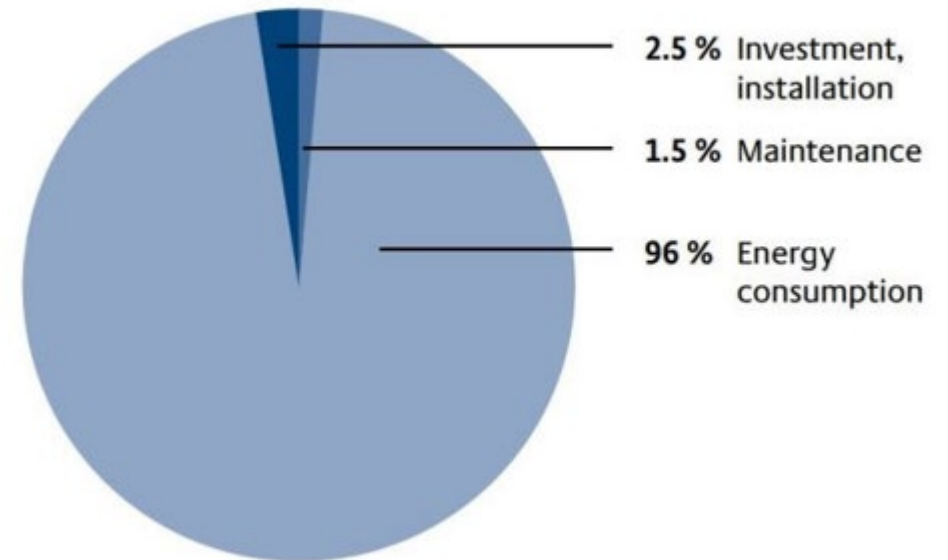
- Consider energy performance improvement and operations in the design of new, modified and renovated facilities over the lifetime
- Design the facility to be efficient right from the start and ongoing
- Include these items in the design specifications that are sent out for quote



Task 19: Procurement Specific Actions

- Inform suppliers that energy performance is an evaluation factor for SEU-related purchases
- Establish operating lifetime energy performance criteria for purchases that can significantly affect energy performance
- Develop documented specifications for:
 - the purchase of energy supply
 - ensuring the energy performance of procured equipment and services

Lifecycle costs of an electric motor



Section 6: Performance Evaluation (Tasks 20-23)



Check on how you are doing for both your EnMS and your energy performance improvement



Are you effectively monitoring and measuring your EnMS and your energy performance improvement?

How are your tracking systems working?

Are internal audits and management reviews all set up?

Section 6: Performance Evaluation

Section 6: Performance Evaluation

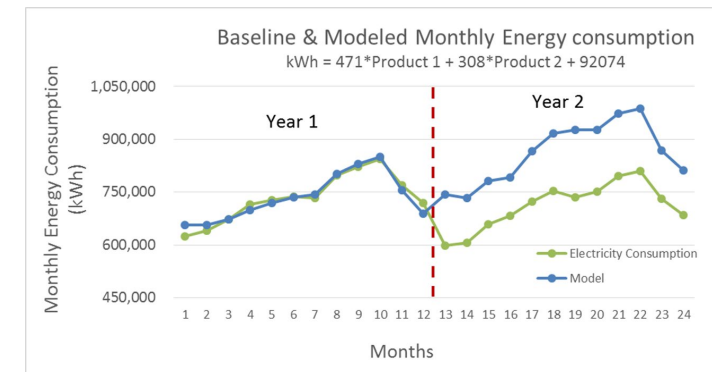
Task 20 Monitoring and Measurement of the EnMS

We monitor trends in energy management system (EnMS) performance and evaluate the effectiveness of the EnMS in achieving intended outcomes and planned results. The methods used, the frequency of the monitoring, and when the results are analyzed and evaluated are defined.



Task 21 Monitoring and Measurement of Energy Performance Improvement

We monitor and measure the key characteristics of processes that affect our energy performance. We define the methods used, the frequency of the monitoring and measurement, and when the results are analyzed and evaluated. We evaluate our energy performance improvement and investigate and respond to significant deviations in energy performance.



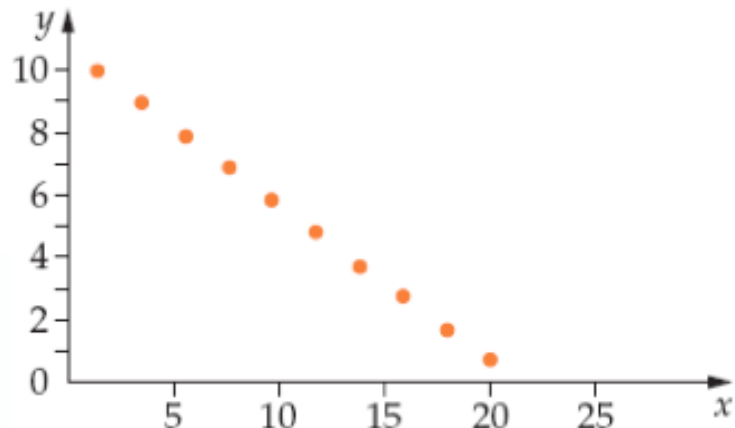
Performance Evaluation: The Big Picture

Monitoring and Measuring focuses on TWO areas:

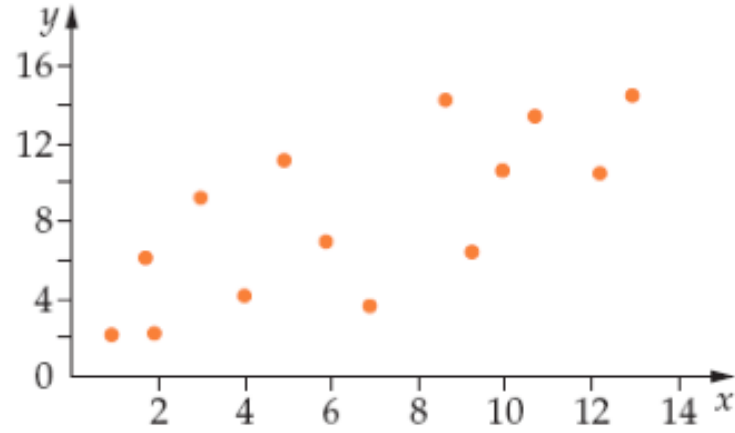
The EnMS

Energy
Performance
Improvement

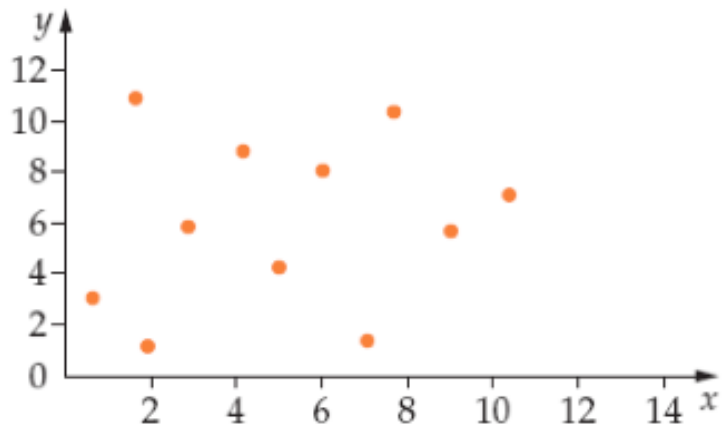
Task 20: Track Measurements to Monitor Trends



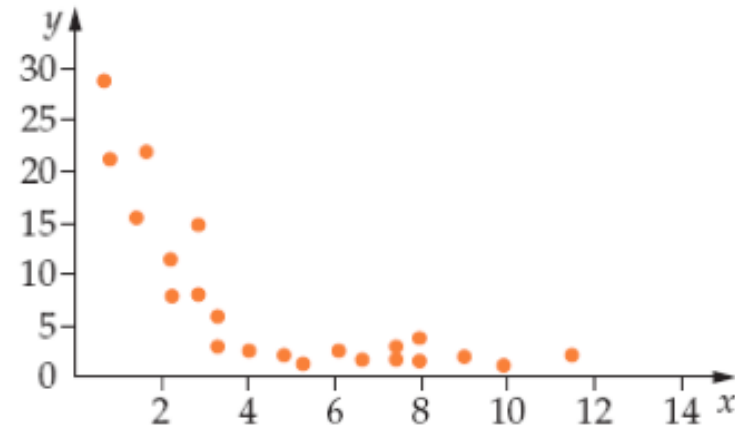
A strong, negative linear trend



A weak, positive linear trend



No trend



A weak, negative non-linear trend

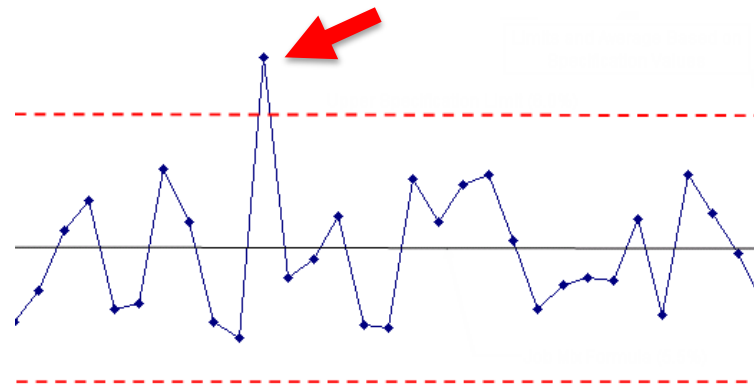
Plotting and trending systematic results is a GREAT method for evaluating the operations of your EnMS.

Task 21: Key Term

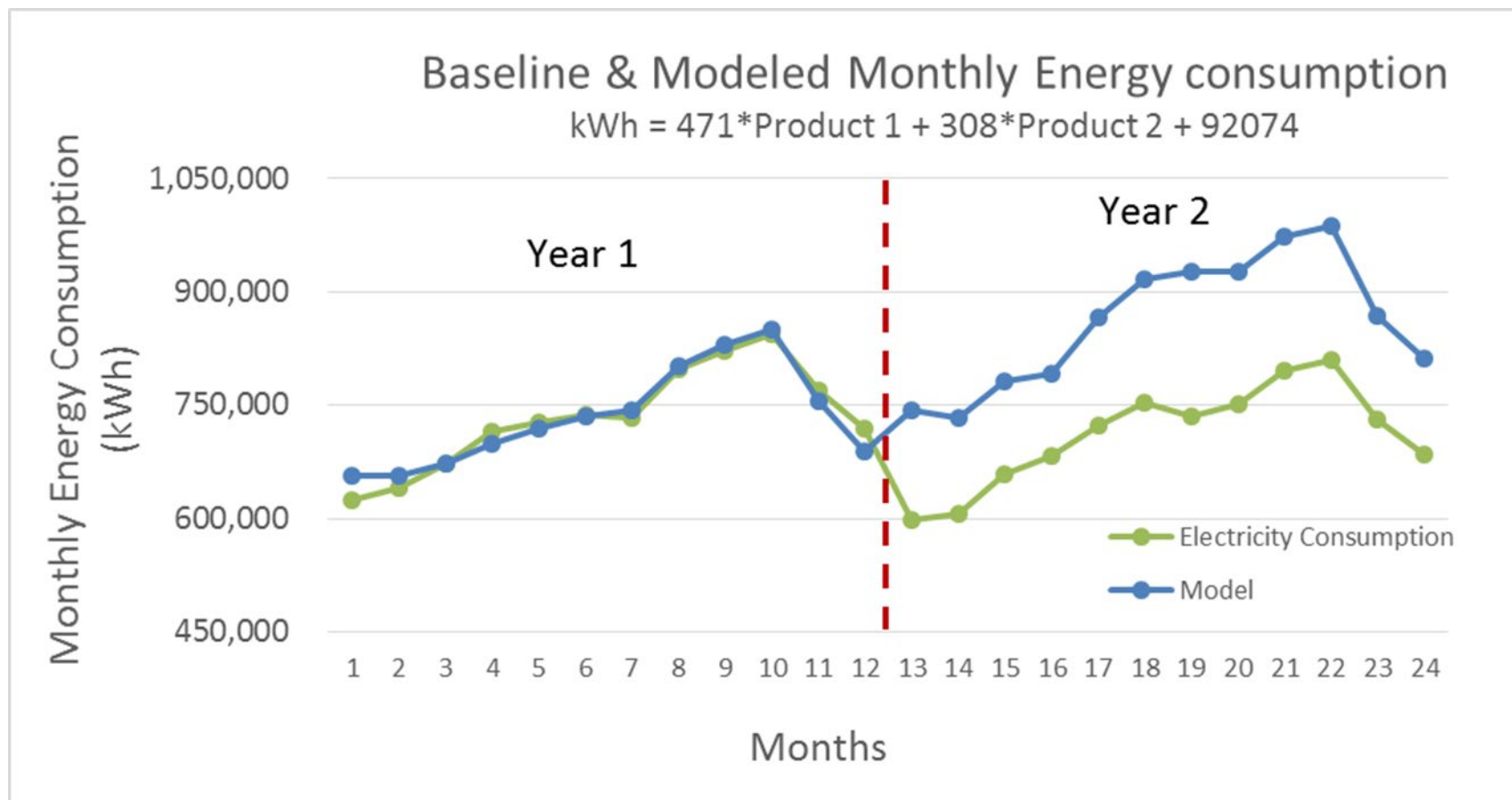
- Significant deviation:
 - “The organization shall investigate and respond to significant deviations in energy performance.” (ISO 50001: 2018, 9.1.1)
 - When to respond and how to respond will be determined and appropriate personnel will be trained
 - Maintain records of the results of the responses and investigations into significant deviations



***Your energy team
defines what
amount of deviation
becomes significant***



Task 21: MMA&E Energy Performance



Polling Question 2

Polling Question

- 2) Based on previous work and what you have learned during these energy management sessions, what method do think you will used to determine your energy performance?
- A. Month of current year versus month of previous year (no relevant variables)
 - B. Combined total energy consumption per unit of production, trended
 - C. Actual total energy consumption per month versus budget
 - D. Linear regression with relevant variables
 - E. We are not sure yet
 - F. “Where we’re going, we don’t need any roads!”



Section 6: Performance Evaluation (continued)

Section 6: Performance Evaluation

Task 22 Internal Audit

We conduct internal audits of the 50001 Ready energy management system at specified intervals and report the results to relevant management. We identify trends in internal audit results for consideration in management review.



Task 23 Management Review

Top management periodically reviews the 50001 Ready energy management system and our organization's energy performance to ensure its continuing suitability, adequacy, and effectiveness.



Task 22: The Internal Audit Process



Task 22: The Internal Audit Process

- Findings need to be based on facts and not opinion
- Findings should include:
 - Direct observations
 - Statement of facts, first-hand only, not hearsay
 - Documents, data, and records
 - Evidence
- First-hand, verifiable
- Touch it, see it , read it, hear it




Task 22: The Internal Audit Process

- REMEMBER THESE!
- Anything that you invoke on yourself from your own EnMS requirements, processes, or procedures, are auditable under your internal audit program
- To ensure objectivity and the impartiality of the internal auditing process, personnel should not audit items that they developed or worked on.



Task 23: Management Review



Management review is the engagement of top management in reviewing the EnMS and the energy performance, as well as asking and answering these questions:

- How have we done?
- Where can we improve?
- What do we need to change?
- Do we have enough resources in the right places?



Section 7: Continual Improvement (Tasks 24 - 25)



When we check, if things are not okay, then we act to fix them, and we do this in an ongoing method

Continual Improvement



Energy & Cost Reduction Over Time



Do you have a strong corrective action program to fix and follow up on nonconformities to your EnMS?

Do you continually improve both your EnMS and your energy performance?

Section 7: Continual Improvement

Section 7: Improvement

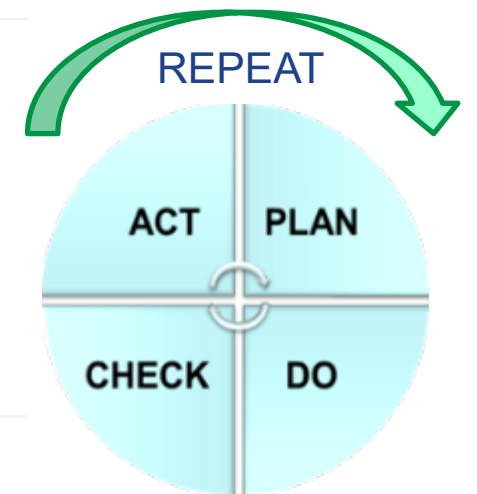
Task 24 Corrective Actions

We identify nonconformities and other problems in the 50001 Ready energy management system and take appropriate corrective action.



Task 25 Continual Improvement

We have a 50001 Ready energy management system and continually improve its processes and interactions. We continually improve the suitability, adequacy and effectiveness of our energy management system. We achieve and demonstrate continual energy performance improvement.



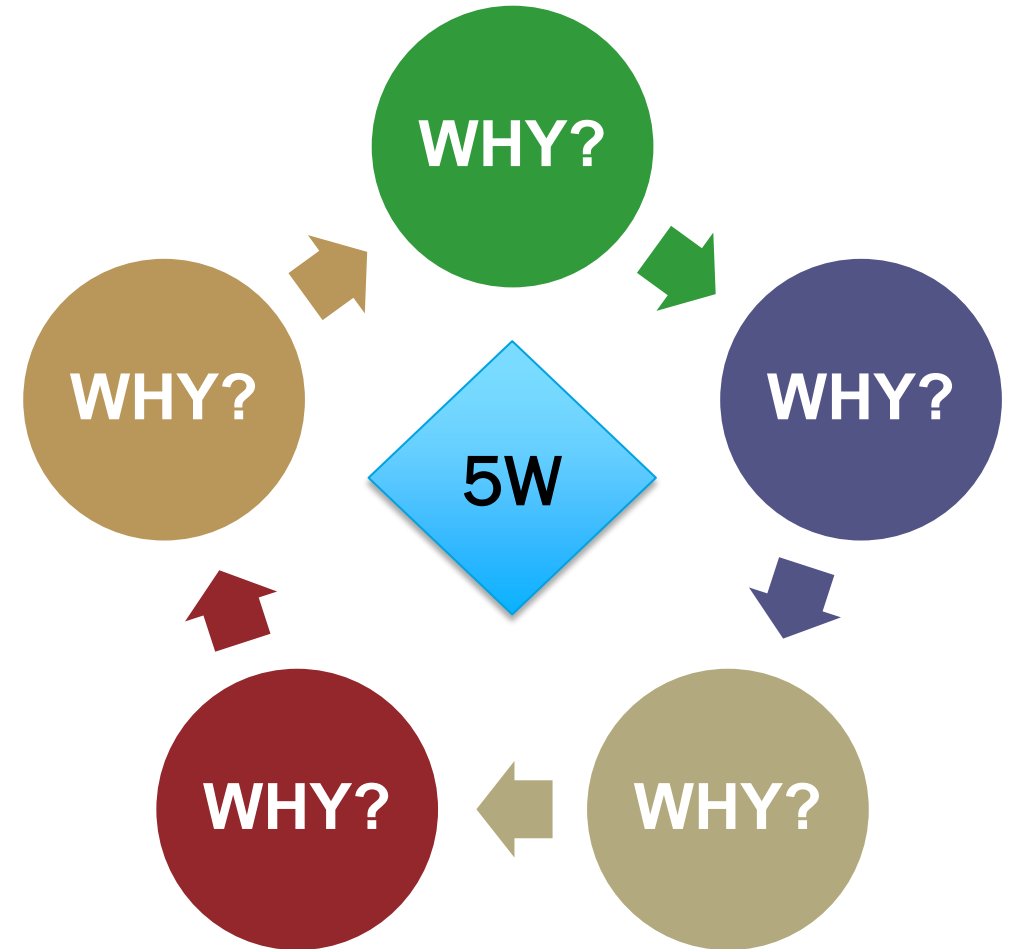
Task 24: Key Terms

- **3.3.3 nonconformity**
 - non-fulfilment of a *requirement* (3.3.1)
- **3.3.1 requirement**
 - need or expectation that is stated, generally implied or obligatory
- **3.3.4 corrective action**
 - action to eliminate the cause of a *nonconformity* (3.3.3) and to prevent recurrence

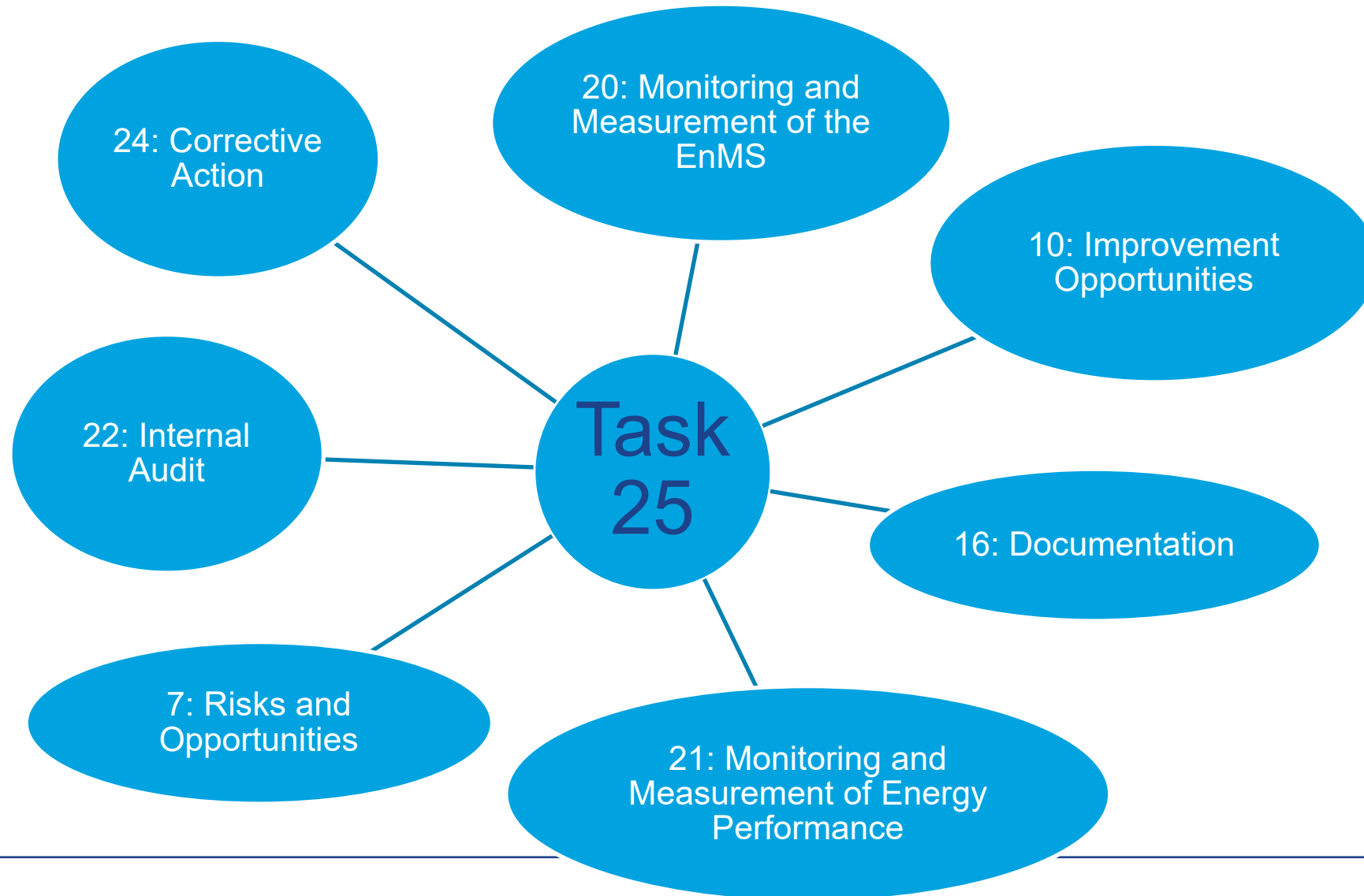


Task 24: Impact and Why?

- What is the impact?
- What is the need for further action.
 - Do similar nonconformities exist?
 - Can similar nonconformities occur?
- Why did this happen?
 - Five Why's Exercise
 - Get to the root cause
- Eliminate the root cause
 - Take corrective action

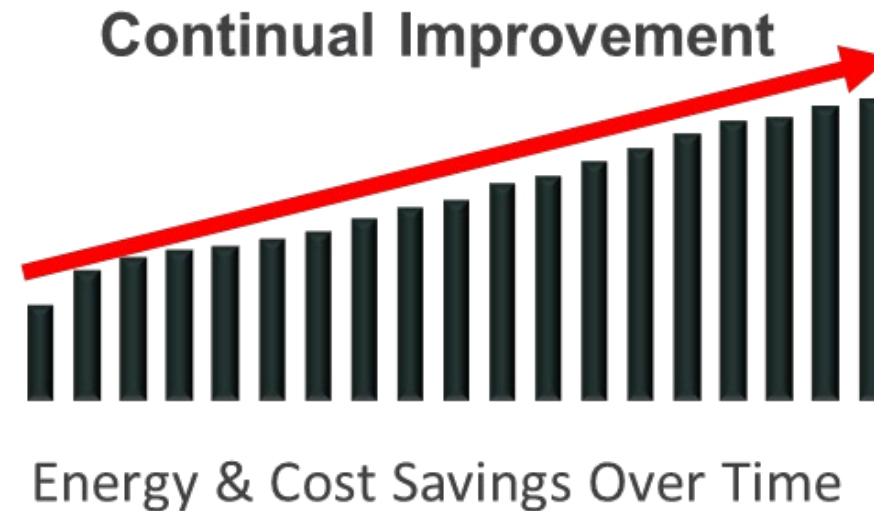


Task 25: Connecting the Tasks



Task 25: Continual Improvement

- You SHALL demonstrate continual improvement of your EnMS
- You SHALL demonstrate continual improvement of your energy performance





- Today's Content

Remember to use the 50001 Ready Navigator

Use the Navigator

Active Partner Referral | Advanced Energy more information cancel referral



Partnering with:

Welcome to the 50001 Ready Navigator!

The 50001 Ready Navigator is an online application that provides step-by-step guidance for implementing and maintaining an energy management system in conformance with the ISO 50001 Energy Management System Standard. Join the 23,000+ facilities worldwide benefiting from an energy management system!

About the Navigator

Tell Me More

The 50001 Ready Navigator is an online guide for establishing an energy management system in order to identify, provide, and improve projects that will improve your facility's energy performance. Completion of the 50001 Ready Navigator program includes the purchase contribution to the International Joint Venture for Energy Management Systems, Inc. (IJEV).

What is Energy Management?

Energy management is a system for managing energy performance and efficiency that integrates with an organization's existing business systems. Organizations with an energy management system achieve energy efficiency through continuous system audits and the implementation of a step-by-step process for defining, providing, and improving energy efficiency. The 50001 Ready Navigator is an online application for establishing and maintaining energy management systems.

Why is Energy Management important?

Energy is a critical component to your organization's operations. It's important to identify how energy can be managed and controlled in order to have maximum energy management. Below is a list of key components to energy, color-coded to indicate energy performance and an overview of energy structure and energy management. The energy data helps to inform your organization's performance over time of energy management, can be a key to cost savings, and can be a key to your organization's success.

Why should I use the 50001 Ready Navigator?

The 50001 Ready Navigator has been developed by the U.S. Department of Energy to help you with the energy management system. For purchase information or 50001 Ready, the 50001 Ready website that provides you with a complete list of energy management guides, and includes a user support system for all implementation. The 50001 Ready program is a key component to the success of your 50001 Ready program. It is a key to your organization's success. For more information, visit www.50001ready.com.

What is 50001 Ready?

50001 Ready is a U.S. Department of Energy program for facilities and organizations that have implemented an ISO 50001 energy management system using the guidance of the 50001 Ready Navigator. ISO 50001 is an international energy performance standard. For 50001 Ready program information, visit www.50001ready.com.

Explore the Navigator

Dashboard

50001 Navigator Program on 05/26/2019 10:00 AM. 100% Complete. 100% Completed

Task Assignments

Task	Assigned To	Status	Status Date	Action
Energy and Sustainability	Joe Name Last Name	Completed		
Energy Policy	Joe Name Last Name	Completed		
Management Committee	Joe Name Last Name	Completed		
Energy Team	Joe Name Last Name	Completed		
Legal Requirements	Joe Name Last Name	Completed		

Create an Account or Log-in to Get Started

EMAIL ADDRESS

ENTER PASSWORD

Log In

[Forgot password?](#)

Use the Multi-Site Option

- The multi-site option can be very helpful

Central Office Portfolio View [Central Office Dashboard](#) [Manage Central Office](#) [Manage CO Team](#) [Add Site](#)

Central Office CONTRIBUTOR

Central Office Tasks Not Started In Progress Ready for Review by Site Support Only Completed

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Contact	Site Name	Task Progress	Action	Last Activity
	EMD	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12 <input type="checkbox"/> 13 <input type="checkbox"/> 14 <input type="checkbox"/> 15 <input type="checkbox"/> 16 <input type="checkbox"/> 17 <input type="checkbox"/> 18 <input type="checkbox"/> 19 <input type="checkbox"/> 20 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> 23 <input type="checkbox"/> 24 <input type="checkbox"/> 25	Dashboard	08/12/2020 Notes 0 Remove
	Utility Services - 23rd...	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12 <input type="checkbox"/> 13 <input type="checkbox"/> 14 <input type="checkbox"/> 15 <input type="checkbox"/> 16 <input type="checkbox"/> 17 <input type="checkbox"/> 18 <input type="checkbox"/> 19 <input type="checkbox"/> 20 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> 23 <input type="checkbox"/> 24 <input type="checkbox"/> 25	Continue Setup	05/22/2020 Notes 0 Remove
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	Sweeney WTP	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12 <input type="checkbox"/> 13 <input type="checkbox"/> 14 <input type="checkbox"/> 15 <input type="checkbox"/> 16 <input type="checkbox"/> 17 <input type="checkbox"/> 18 <input type="checkbox"/> 19 <input type="checkbox"/> 20 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> 23 <input type="checkbox"/> 24 <input type="checkbox"/> 25	Continue Setup	05/22/2020 Notes 0 Remove
	Nano WTP	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12 <input type="checkbox"/> 13 <input type="checkbox"/> 14 <input type="checkbox"/> 15 <input type="checkbox"/> 16 <input type="checkbox"/> 17 <input type="checkbox"/> 18 <input type="checkbox"/> 19 <input type="checkbox"/> 20 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> 23 <input type="checkbox"/> 24 <input type="checkbox"/> 25	Continue Setup	05/22/2020 Notes 0 Remove
	235 Government Center Dr...	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12 <input type="checkbox"/> 13 <input type="checkbox"/> 14 <input type="checkbox"/> 15 <input type="checkbox"/> 16 <input type="checkbox"/> 17 <input type="checkbox"/> 18 <input type="checkbox"/> 19 <input type="checkbox"/> 20 <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> 23 <input type="checkbox"/> 24 <input type="checkbox"/> 25	Continue Setup	05/22/2020 Notes 0 Remove

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The 50001 Ready Navigator is a resource of the Department of Energy's Advanced Manufacturing Office.
[Advanced Manufacturing Office](#) | [Office of Energy Efficiency & Renewable Energy](#)

Use the Playbooks



50001 Ready
U.S. DEPARTMENT OF ENERGY

50001 Ready Navigator Playbook

Task 22: Internal Audit

Date last modified/updated: [Click here to enter a date.](#)

Who last modified/updated: [Click here to enter text.](#)

This part of the Navigator Playbook is completed when you have:

1. Appointed an EnMS internal audit program manager.
2. Developed a documented internal audit procedure that addresses the responsibilities, planning, and conducting of EnMS internal audits, as well as the reporting of audit results.
3. Identified personnel to serve as EnMS internal auditors and train them on 50001 Ready Navigator EnMS guidance (or ISO 50001 requirements), internal auditing of ISO 50001 (including auditing of energy performance improvement), and your internal audit procedure.
4. Conducted regularly scheduled EnMS internal audits to identify areas of success and areas in need of improvement.
5. Recorded the results of your organization's internal audits.
6. Ensured that internal audit results are reported to relevant management.

Polling Question 3

Polling Question

- 3) On a scale of one to five, how would you rate the value of the 50001 Ready tool, including the informational tabs and the downloadable playbooks, for implementing energy management?
- A. FIVE – Excellent. I used this during this training and will continue to do so
 - B. FOUR – Very good. I was able use this some and want to use it more
 - C. THREE – Okay. I did not get to fully use or evaluate this tool
 - D. TWO – Not sure. I did not get to use this tool at all during this training
 - E. ONE – No value to my organization
 - F. ZERO – Life (and 50001) is like a box of chocolates.
You never know what you're going to get!"



- Today's Content

Where can we go from here?

OPTIONS to Move Forward

- If not already done:
 - Purchase and download the ISO 50001: 2018 standard
 - Set up your 50001 Ready account
 - Download 50001 Ready playbooks for tasks 1-25 and began working on these
- Work through the 25 task playbooks:
 - Leverage ISO 9001, 14001 & 45001 systems, if already in place
 - Make the playbooks your own
 - Evaluate your energy performance improvement
- Join a cohort for further progress assistance ([more to follow](#))
- Apply for [50001 Ready Recognition](#) (use the navigator to apply)
- Go for ISO 50001 third-party certification



50001 Ready
U.S. DEPARTMENT OF ENERGY

The DOE AMO Cohort Program



- The DOE AMO currently has the 50001 Ready Technical Assistance Program in operation
 - This program uses the cohort method
 - This program requires specific commitment
 - This program is FREE

U.S. DEPARTMENT OF
ENERGY | Energy Efficiency &
Renewable Energy
ADVANCED MANUFACTURING OFFICE

The DOE AMO Cohort Program



- The Cohort Method
 - Typically, five to seven organizations
 - Multi-site organizations are okay
 - Benefit from shared learning
 - Benefit from shared best practices
 - ~ 7-month engagement



The DOE AMO Cohort Program



- Participating organizations will **commit to**:
 - Providing staff resources to complete the program
 - Providing requested data collection forms, pre and post cohort
 - Completing assigned preparation and homework items
 - Applying for **50001 Ready Recognition**



50001 Ready Technical Assistance Program
Site Level Participant Agreement



The DOE AMO Cohort Program



- Participating organizations will receive:
 - You have already received the eight webinar sessions!
 - Guidance to complete the pre and post cohort data collection forms
 - EIGHT 1-hour group sessions for playbook review
 - EIGHT 1-on-1 session with each individual site for check in on progress and technical assistance
 - Assistance with applying for 50001 Ready Recognition

A screenshot of a document titled "50001 Ready Navigator Playbook" from the U.S. Department of Energy. The document is divided into sections for "Task 1: An EnMS and Your Organization" and "Task 7". It includes instructions on when each task is completed and lists specific actions to be taken, such as identifying external and internal issues and recording information. The document also mentions adding information to the Risks and Opportunities Register.

The DOE AMO Cohort Program



■ Desired Outcomes:

- Gain an understanding of ISO 50001 and create your EnMS
- Use the 50001 Ready navigator tool to implement the 25 energy management tasks and create your playbooks
- Improve your overall plant operations
- Demonstrate ongoing energy performance improvement
- Apply for and receive 50001 Ready Recognition for self-attesting to completion



Applying for 50001 Ready Recognition

The application is accessible from the navigator

1. Self-attest to task implementation

Complete Self Attestation Form

2. Complete Performance Improvement Report

Submit energy performance data 'snapshot'.

3. Management sign-off

Sign-off by management of 50001 Ready implementation.

**DOE
recognizes
50001 Ready
Achievement**

**Use the 50001
Navigator
instructions to
apply**

Participation in the DOE AMO Cohort Program

If you are interested participating in a DOE AMO Energy Management Cohort as a follow up to t:

PLEASE LET US BOTH KNOW “**ASAP**”:

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ADVANCED MANUFACTURING OFFICE

- Review and Wrap Up

Webinar Wrap Up

Kahoot Quiz Game

Q&A

Training Schedule: By Session

1. An Introduction and Overview – DONE – February 9
2. Laying the Foundation of 50001 – DONE – February 16
3. Where does all the Energy Go? – DONE – February 23
4. Sorting out the Energy Data – DONE – March 2
5. Engaging Other Functions – DONE - March 9
6. Evaluating Performance – DONE – March 16
7. Ensuring Continual Improvement – DONE – March 23
8. Wrap Up and Next Steps – **TODAY** – March 30

NEXT: Join the follow up cohort?

50001 Ready - Resources

- 50001 Ready Program
 - <https://www.energy.gov/eere/amo/50001-ready-program>
- 50001 Ready Navigator
 - <https://navigator.lbl.gov/>
- Energy Footprint Tool
 - <https://www.energy.gov/eere/amo/downloads/energy-footprint-tool>
- EnPI Lite Tool
 - <https://enpilite.lbl.gov/>
- 50001 Ready at Better Building
 - <https://betterbuildingsolutioncenter.energy.gov/better-plants/software-tools>

Polling Question 4

Polling Question

- 4) On a scale of one to five, what do you think about participating in a DOE AMO follow up cohort?
- A. FIVE – We plan to participate
 - B. FOUR – We want to participate, but need to get a little more info
 - C. THREE – We are not sure
 - D. TWO – Our participation is unlikely
 - E. ONE – We will not participate
 - F. We would love to participate, but all our time in the near future will be spent to keep the soft service ice cream machine working!

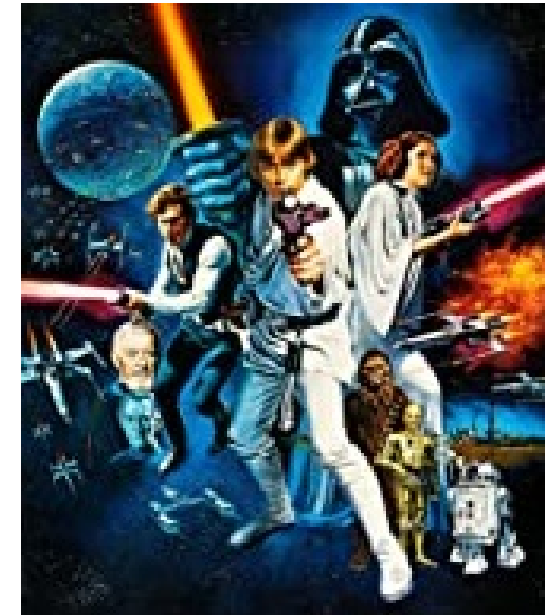


Polling Question 5

Polling Question

5) After attending all eight VINPLT trainings on 50001 Ready, how do you feel about 50001 Ready as a resource to help you with your energy management plans:

- A. Overwhelmed, with no hope of recovery
- B. Overwhelmed, but feeling much better
- C. Optimistic
- D. Very encouraged
- E. Ready to get Ready
- F. Looking forward to the follow up cohort!
- G. And a wish from your presenter: *“May the force be with you!”*



1977

And now, our Kahoot Quiz Review Game



50001 Ready Navigator: Questions?

Context of the Organization

1. An EnMS and your Organization
2. People and Legal Requirements
3. Scope and Boundaries

Leadership

4. Management Commitment
5. Energy Policy
6. Energy Team and Resources

Planning

7. Risks to EnMS Success
8. Energy Data Collection and Analysis
9. Significant Energy Uses
10. Improvement Opportunities
11. Energy Performance Indicators (EnPIs) and Baselines (EnBs)
12. Objectives and Targets
13. Action Plans for Continual Improvement

Support

14. Competence and Training
15. Awareness and Communication
16. Documenting the EnMS

Operation

17. Operational Controls
18. Energy Considerations in Design
19. Energy Considerations in Procurement

Performance Evaluation

20. Monitoring and Measurement of the EnMS
21. Monitoring and Measurement of Energy Performance Improvement
22. Internal Audit
23. Management Review

Improvement

24. Corrective Action
25. Continual Improvement



Possible Discussion Topics

1. What has been the most challenging so far?
2. What has been most helpful and useful?
3. Do you feel that you can move forward from here?
4. What would be helpful moving forward?
5. Other....?



Please Contact Us With Any Questions



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