



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

ORNL 50001 Ready Training
Webinar Series, Session 7
March 23, 2021
10:00 a.m. to 12:30 p.m.

Agenda – Session SEVEN



- Welcome, Safety, and Housekeeping
- Review Previous Sessions
- Today's Content: Ensuring Continual Improvement
 - PERFORMANCE EVALUATION, Section 6:
 - Task 22 – Internal Audit
 - Task 23 – Management Review
 - IMPROVEMENT, Section 7:
 - Task 24 – Corrective Action
 - Task 25 – Continual Improvement
- Webinar Training Schedule & Preparations
- Kahoot Quiz Game
- Q&A

But first,
a POLL!



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Polling Question 1

Polling Question

- 1) After having learned much more about ISO 50001 and the 50001 Ready online program, what level of energy management do you feel that your organization will work to achieve?
- A. I am not sure what our plans are
 - B. We will incorporate some of the principles we have learned to improve our energy management
 - C. We would like to achieve 50001 Ready Recognition from DOE
 - D. We plan to achieve ISO 50001 third party certification
 - E. We plan to achieve both ISO 50001 and Superior Energy Performance third party certifications
 - F. "Beam me up Scotty!"



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

Review of Previous Sessions



- Review the homework from Session SIX
- Quick List of Acronyms
- The 50001 Ready navigator
- Session 2 – 6, Review: Tasks 1 - 21
 - Laying the Foundation
 - Where Does all my Energy Go?
 - Sorting out the Energy Data
 - Engaging Other Functions
 - Evaluating Performance



Quick List of Acronyms

- SEM = Strategic Energy Management
- EnMS = Energy Management System
- SEU = Significant Energy Use
- EnPI = Energy Performance Indicator
- EnB= Energy Baseline
- PDCA = Plan, Do, Check, Act

Why 50001?: A System

Navigator

LANGUAGE
English ▼

Log In

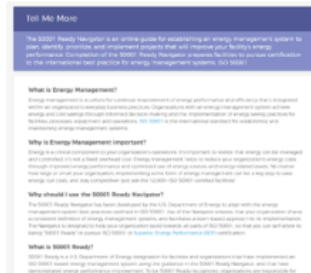


Welcome to the 50001 Ready Navigator!

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+ sites worldwide benefiting from an energy management system!

The 50001 Ready Navigator has been updated to reflect the changes made to the ISO 50001 standard in 2018. The original version of the 50001 Ready Navigator, based upon the 2011 publication of ISO 50001, will be available online for one year and accessible by existing projects to allow for a seamless transition to the revised version. Information about the full transition from the current to updated 50001 Ready Navigator is available below.

About the Navigator



Explore the Navigator



Create an Account or Log-in to Get Started

EMAIL ADDRESS

ENTER PASSWORD

Log In

[Forgot password?](#)

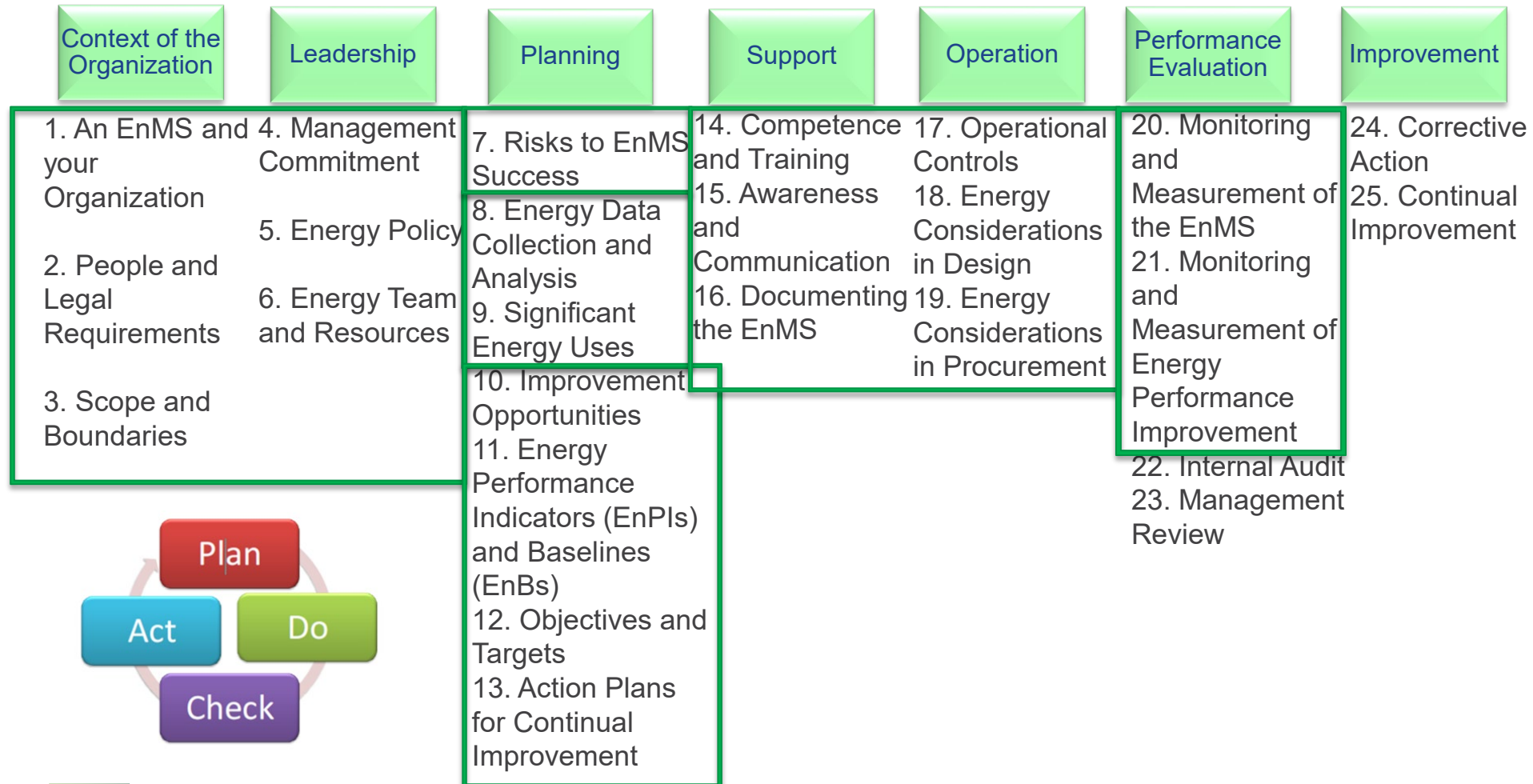
50001 Ready Navigator ISO 50001:2018 Update

The 50001 Ready Navigator's structure and tasks have been updated to align with ISO 50001:2018. Documentation of this can be found here:

[Navigator crosswalk](#)

- FREE
- Download ONLY, one way information flow
- None of your site info is uploaded
- Single site or multi-site capability

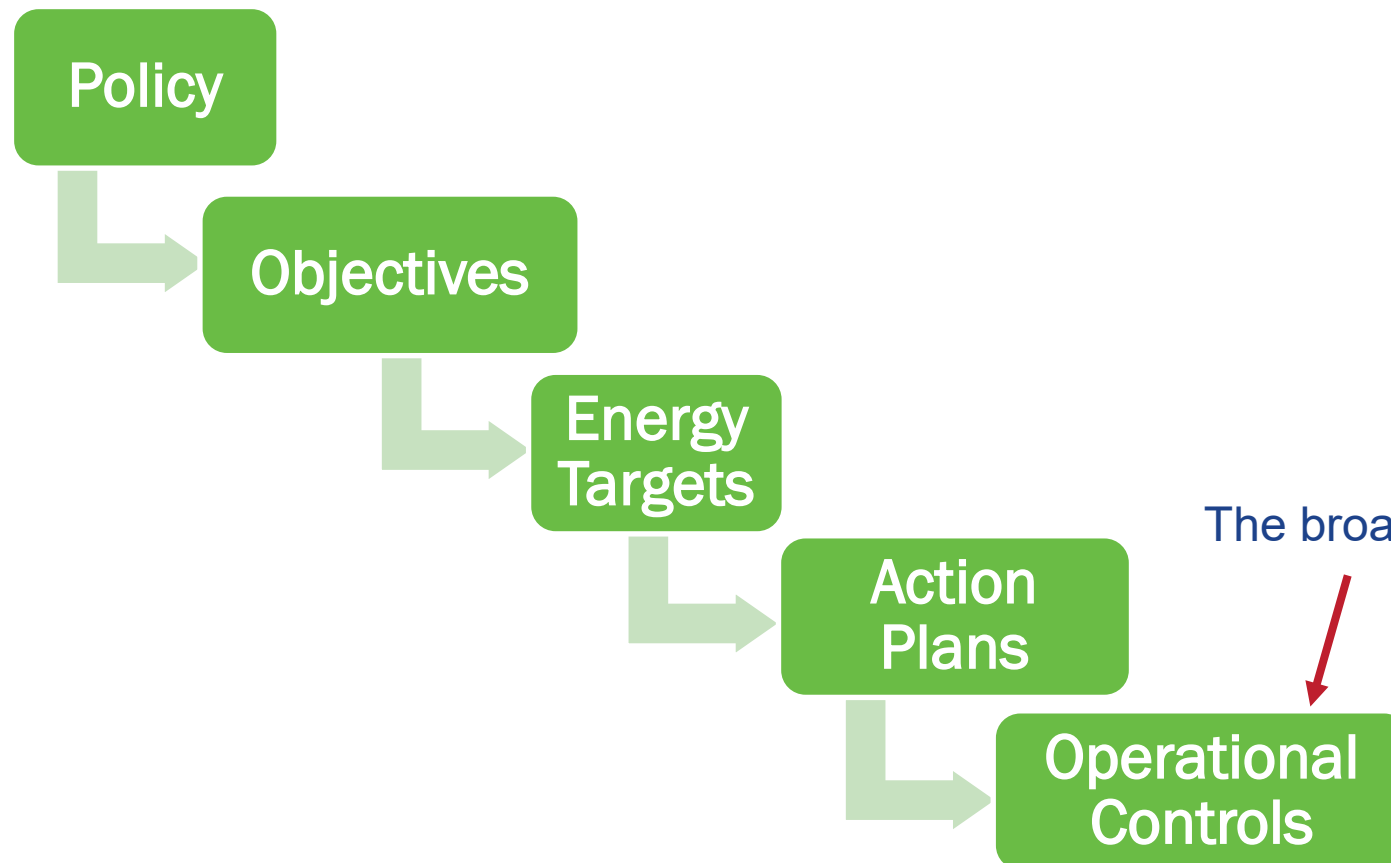
50001 Ready: Review Previous Tasks



Tasks 1-19: The Big Picture

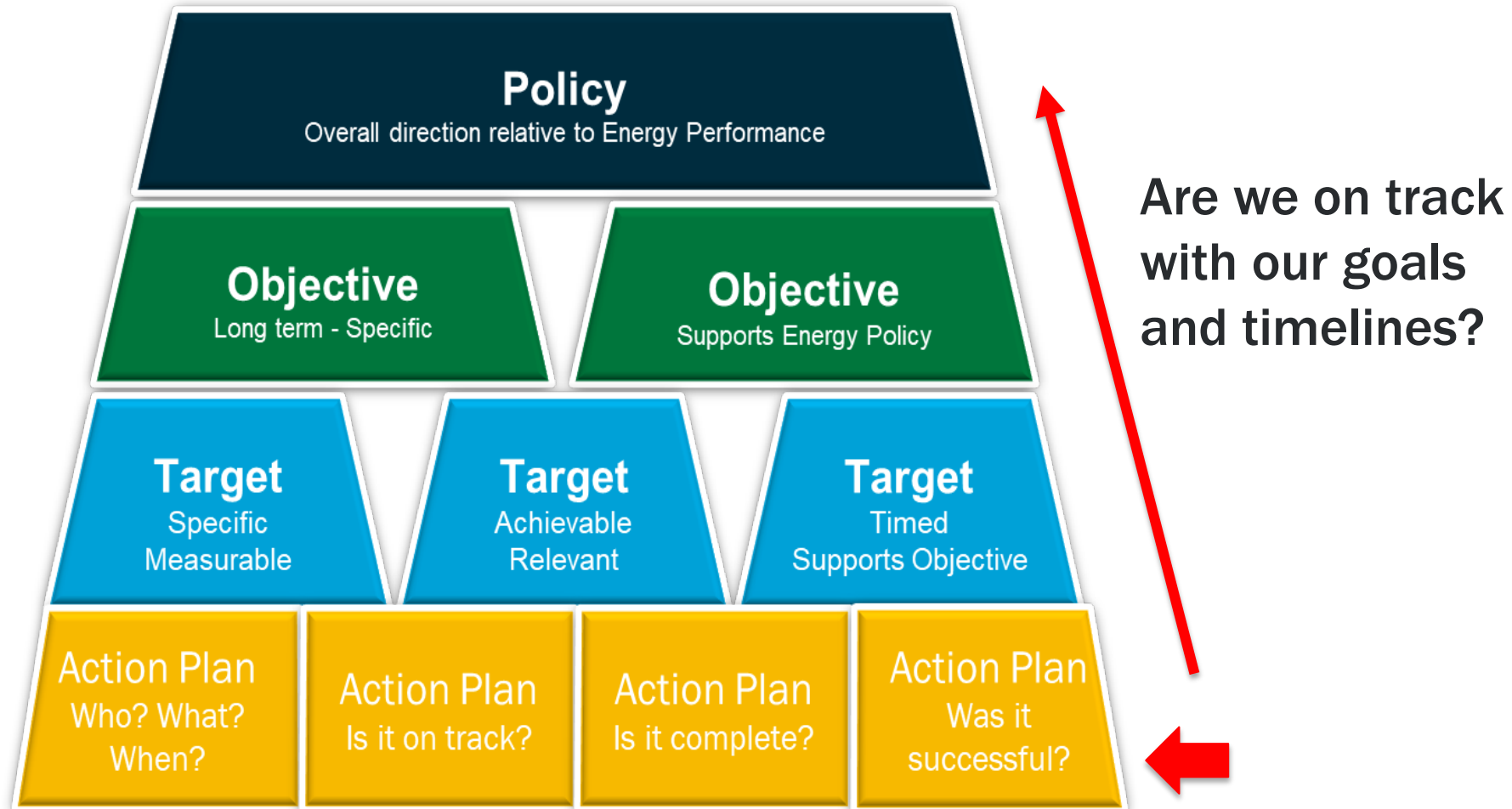


- Building the energy success pyramid starts with a wide base of small actions that build to the completion of energy policy

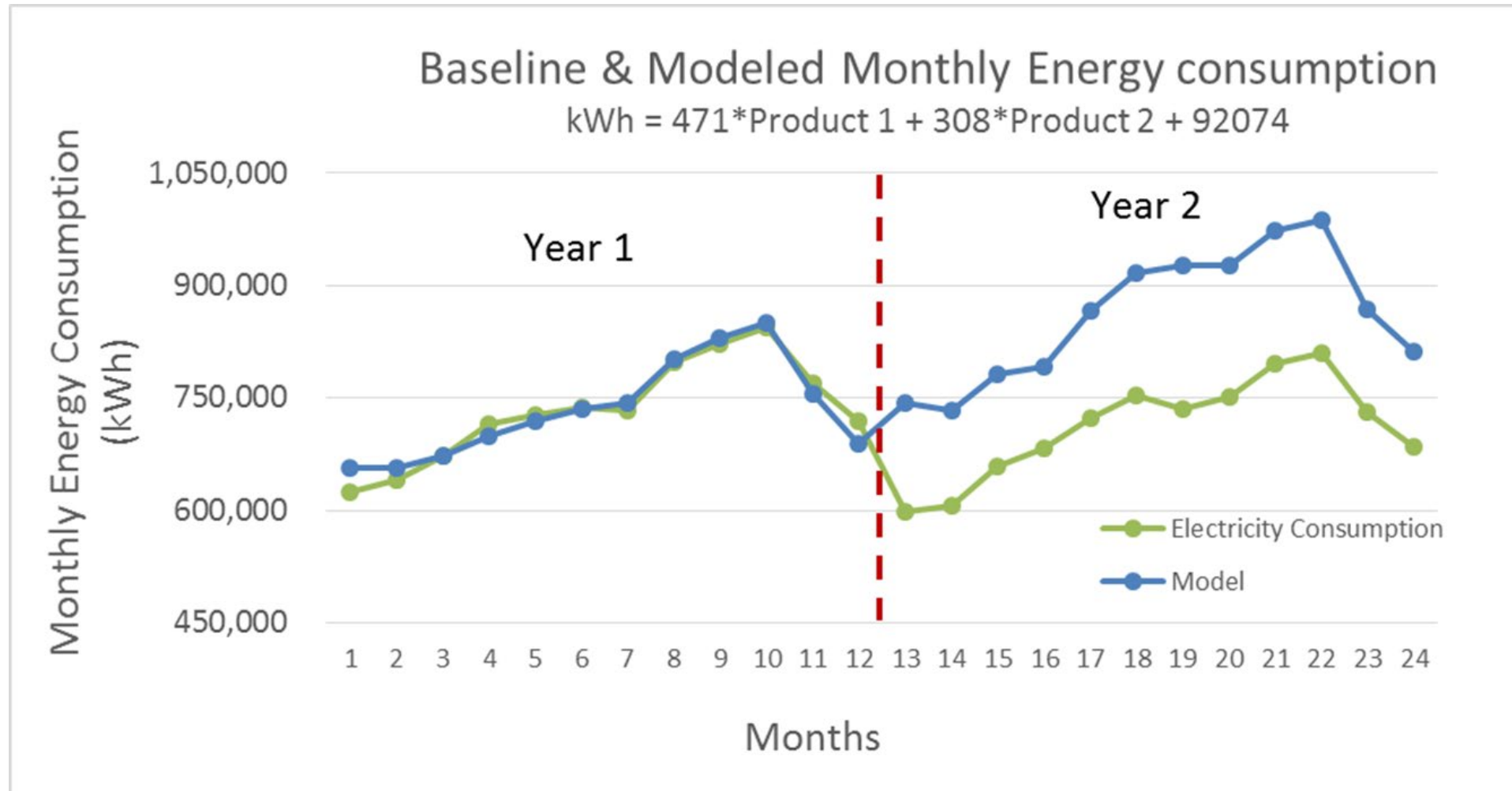


Task 20: MMA&E the EnMS

How do we keep tabs on our smallest scale goals?



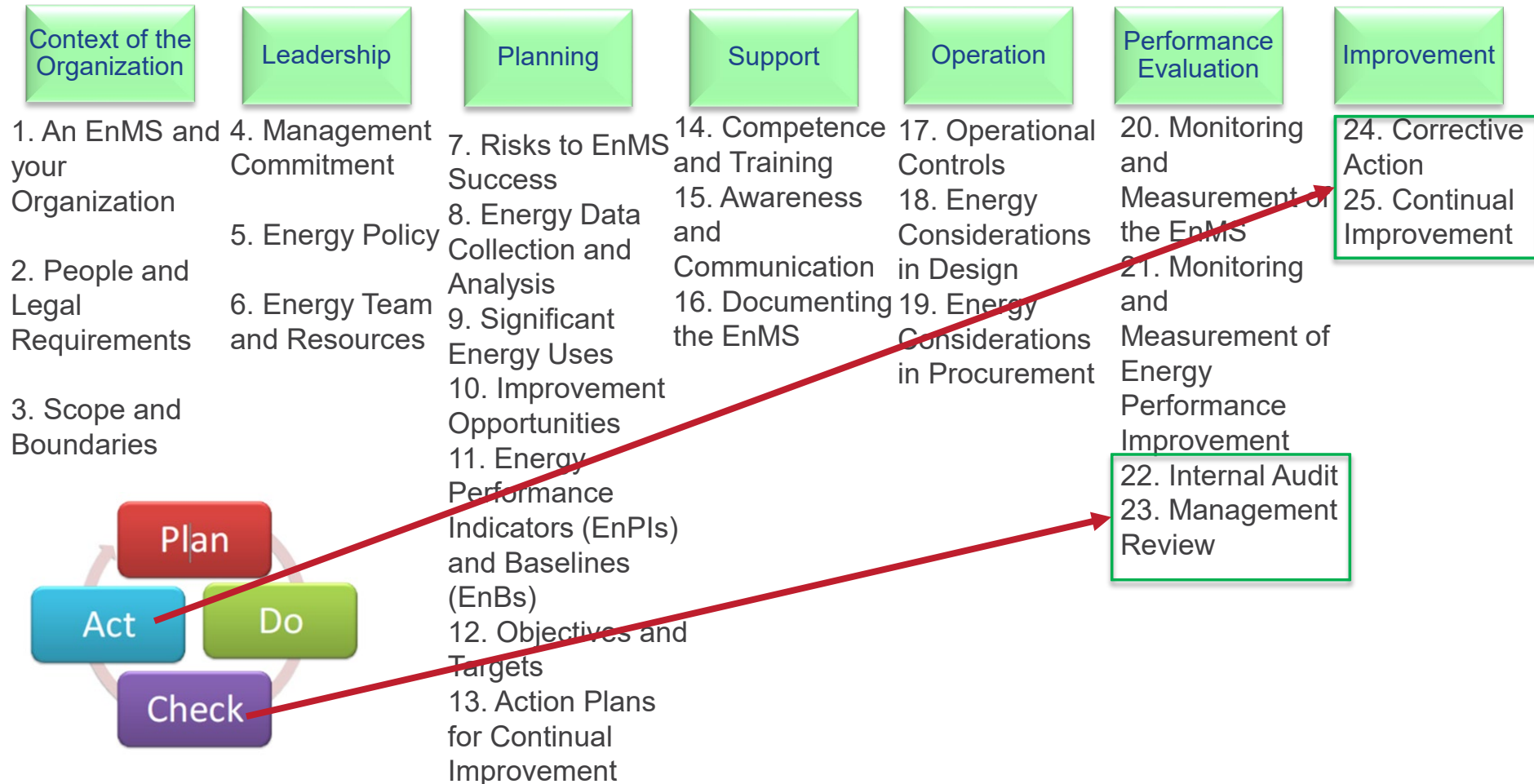
Task 21: MMA&E Energy Performance



- Today's Content

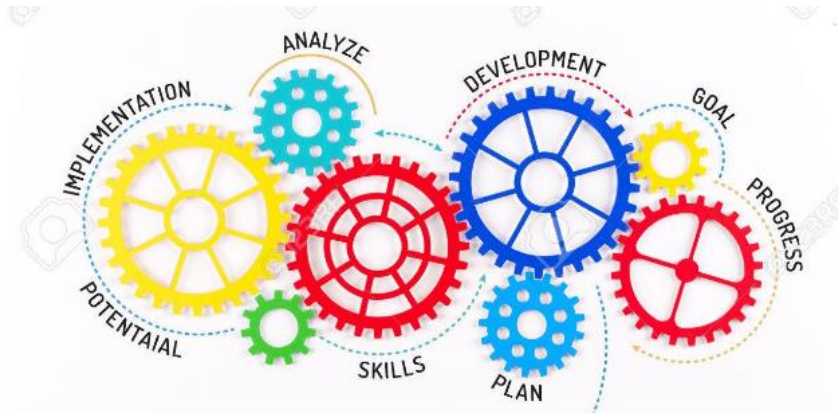
Tasks 22 - 25

50001 Ready Navigator: Today's Tasks



Performance Evaluation (4 tasks)

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? [Session 6]

How are your tracking systems working? [Session 6]

Are internal audits and management reviews all set up? [Session 7 - Today]



Continual Improvement (2 tasks) [Today]

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



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?

Task 22: Internal Audit

Task 22: 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.

Section 9.2 of the ISO 50001: 2018 standard



Task 22: Audit Defined

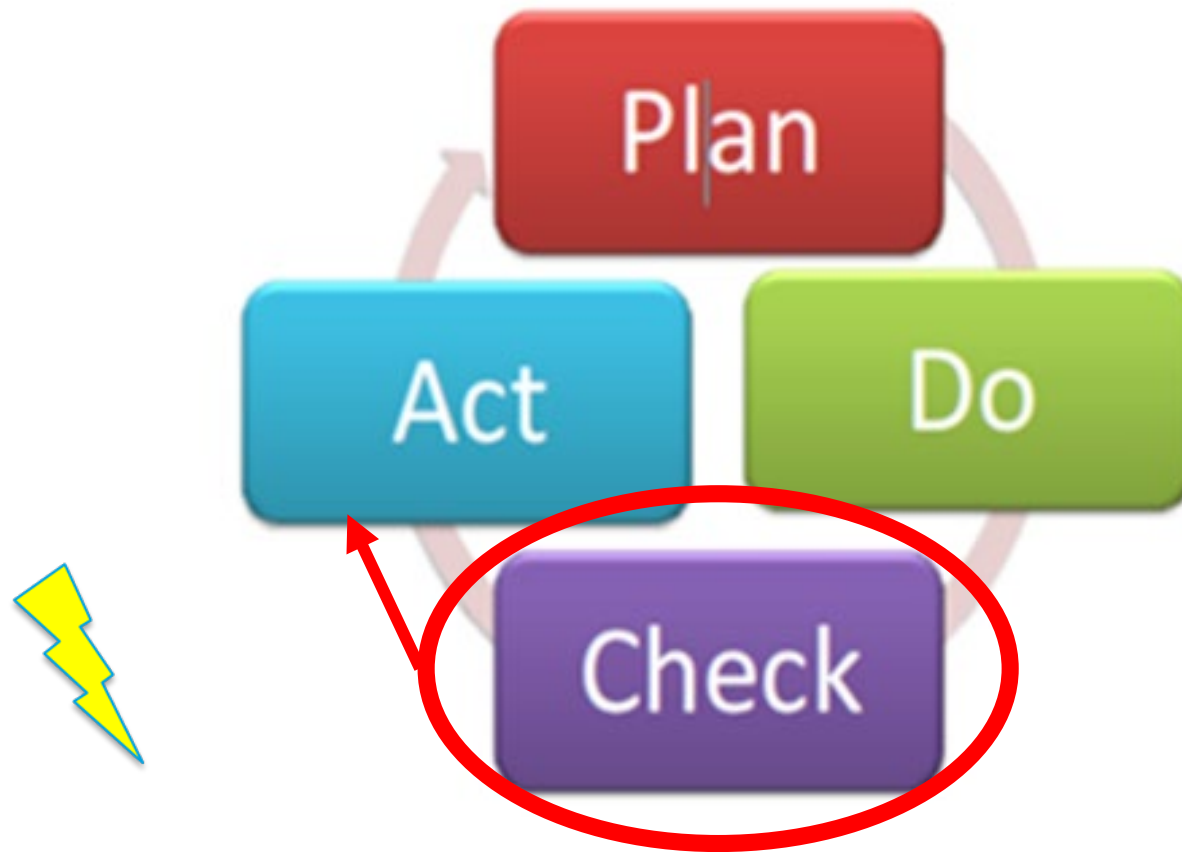
Definition 3.3.8

audit

- systematic, independent and documented process for obtaining evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled
- Audits can be internal or external
- Today we are focusing on internal audits

Task 22: The Internal Audit Process

Determining Conformity



Task 22: The Internal Audit Process



Task 22: The Internal Audit Process

Internal Audits

- Organize audit team
- Develop checklists
- Conduct audit, gather evidence
- Compile audit results
- Produce audit report
 - Include in Management Review
- Process audit findings
 - Corrections, corrective actions and follow up



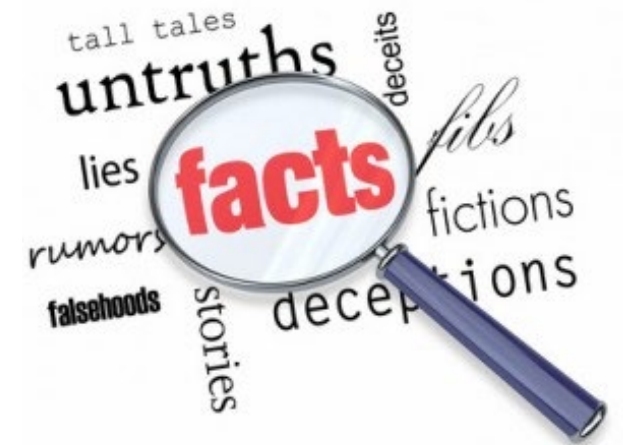
Task 22: The Internal Audit Process

- 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 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



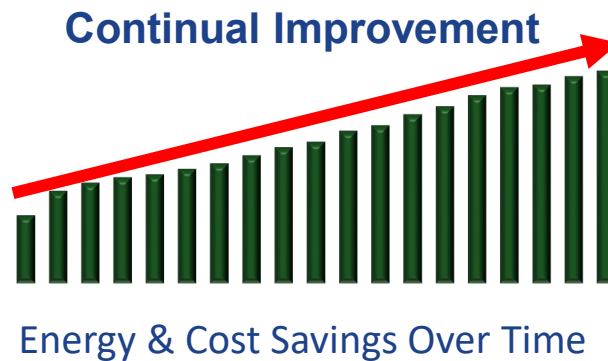
Task 22: The Internal Audit Process

- Nonconformities
 - Non-fulfillment of a requirement is a nonconformance
- Nonconformities should receive corrective action



Task 22: The Internal Audit Process

- Types of Nonconformities
 - Requirements of ISO 50001 are not met (Intent)
 - The organization does not meet its own requirements (Implementation)
 - The EnMS is not working (Effectiveness)
 - There is no improvement in energy performance over time



Task 22: The Internal Audit Process

■ Nonconformity Examples

- No evidence of conducting management reviews
- Documented and planned operational control log sheets for air compressors (an SEU) not being filled out regularly
- No evidence of measurement of natural gas consumption for site boiler (an SEU) as required by the measurement and monitoring plan
- No response to significant deviations for operational controls on an SEU
- No evidence of competency gap closure for boiler operator certification



Task 22: The Internal Audit Process

■ Outputs of the Internal Audit

- Complete an internal audit report
- Document specific nonconformities on an audit finding form
- Turn over this information to the energy management team for action:
 - Enter findings into the Corrective Action Log
 - Take immediate actions, as needed to correct the immediate situation
 - Determine the root cause for the nonconformity
 - Implement corrective actions
- Evaluate effectiveness of corrective actions
- Make updates to the overall EnMS, as indicated
- Review internal audit results and trends as part of the management review


Audit Finding Form		
RECORD OF INTERNAL AUDIT NONCONFORMITY/CONCERN/POSITIVE FINDING		
Organization: Click here to enter text.	Auditor: Click here to enter text.	Standard: Click here to enter text.
Date: Click here to enter text.	Location of Finding: Click here to enter text.	
Type of Finding (check one): <input type="checkbox"/> Nonconformity <input type="checkbox"/> Concern <input type="checkbox"/> Positive Finding		
Facts Concerning the Finding*		
Statement of Criteria (Requirement): Click here to enter text.		
Objective Evidence (Statement of Finding): Click here to enter text.		
<small>* Statement of Criteria (Requirement) is not required for positive findings, but should be provided if appropriate.</small>		
Documentation Reference: Click here to enter text.		
ISO Requirement Reference: Click here to enter text.		
Auditee Signature: Click here to enter text.	Auditor Signature: Click here to enter text.	
<small>Auditee signature indicates that facts concerning the nonconformity are correct.</small>		



Task 22: Playbook

Activity

- Look at Task 22 in 50001 Ready
- Look at the Task 22 Playbook

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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 2

Polling Question

- 2) Based on task 22 for internal auditing, what experience level does your organization have with this?
- A. We have an existing internal auditing program for other ISO systems, and we can readily add ISO 50001 to our program
 - B. We understand internal auditing of ISO systems, but will need to improve and expand this to include ISO 50001
 - C. We have not ever done any internal auditing and we will have to establish this program for ISO 50001
 - D. We plan to outsource our internal auditing needs to a contractor
 - E. “In space, no one can hear you scream!”





Task 23: Management Review

Task 23: 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 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?



Task 23: Periodic Review

Regular Topics

- Aligning EnMS with strategic direction
- Prioritized Performance Improvement Opportunities

Others as Appropriate

- Audit trends
- Energy Performance Improvements

Document:

Discussion

Decisions

Actions



Task 23: Playbook

Activity

- Look at Task 23 in 50001 Ready
- Look at the Task 23 Playbook

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50001 Ready Navigator Playbook

Task 23: Management Review

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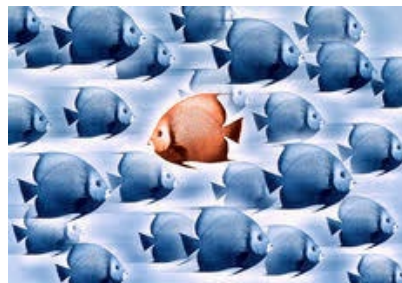
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This part of the Navigator Playbook is completed when you have:

1. Defined the intervals at which top management will review the EnMS and energy performance.
2. Identified who must participate in the management review.
3. Compiled the relevant data and information (inputs) needed for the management review and prepared this information for presentation.
4. Conducted management reviews that address all required inputs and outputs.
5. Implemented the decisions and actions (outputs) of management reviews.
6. Determined if the EnMS continues to be suitable, adequate, effective and aligned with your organization's strategic direction.
7. Maintained a record of management reviews.

Task 24: Corrective Action

Task 24: We identify nonconformities and other problems in the 50001 Ready energy management system and take appropriate corrective action.



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: First things First

- Control and correct the immediate situation, e.g., fix it now
- Examples:
 - Stop the leak
 - Reset the chiller supply water temperature
 - Reprogram the occupancy sensors
 - Change the air handler filters where the differential pressure had exceeded the specified level



Task 24: Impact and Why?

- What is the impact?
 - 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 24: Effective?



- It is not enough to just find and fix the non-conformity
- You must determine that your action was effective
- It may be appropriate for an internal audit team member to follow up after some time has passed to check up on things

effectiveness

ef·fec·tive·ness

/i'fektivnəs/

noun: the degree to which something is successful in producing a desired result; success.

"the effectiveness of the treatment"



Task 24: Documentation


1. List of non-conformities from your internal audit
2. What action will you take?
3. Responsible party and timeline
4. Plan to follow up
5. Are any changes required for the EnMS?



Task 24: Playbook

Activity

- Look at Task 24 in 50001 Ready
- Look at the Task 24 Playbook

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50001 Ready Navigator Playbook

Task 24: Corrective Actions

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

Internal audit: [Click here to enter a date.](#)

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

Management review: [Click here to enter a date.](#)

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

1. Developed and implemented a process for taking corrective action at your organization.
2. Defined roles, responsibilities and authorities for the various steps in the corrective action process.
3. Trained employees on types of problems and nonconformities to be addressed through implementing the corrective action process.

Polling Question 3

Polling Question

- 3) Based on task 24 for corrective action, what experience level does your organization have with this?
- A. We have an existing corrective action program for other ISO systems, and we can readily add ISO 50001 to our program
 - B. We understand corrective action for ISO systems, but will need to improve and expand this to include ISO 50001
 - C. We do not have any corrective action systems and we will have to establish this program for ISO 50001
 - D. We are not sure what to do about a corrective action system
 - E. “You can’t handle the truth!”

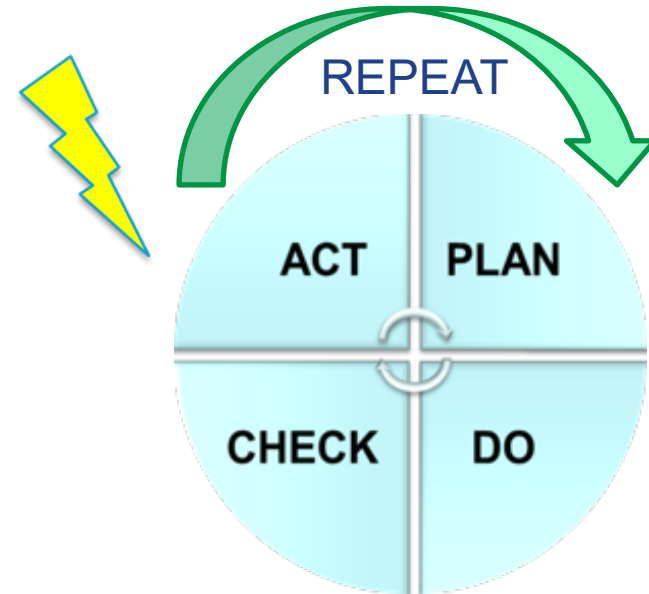


Task 25: Continual Improvement

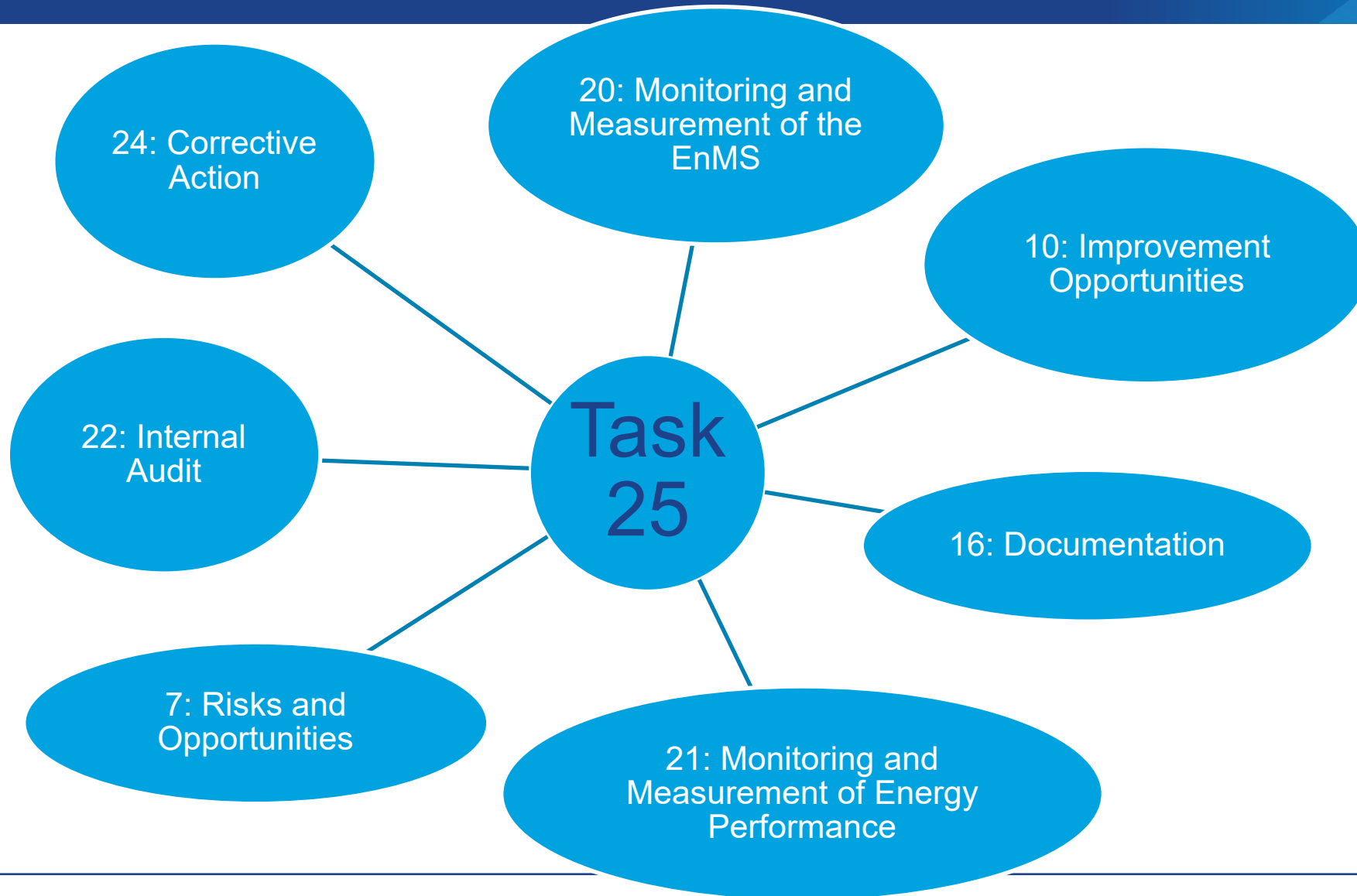
Task 25: We have a 50001 Ready energy management system and continually improve its processes and interactions.

We continually improve the suitability, adequacy and effectiveness of our energy management system.

We achieve and demonstrate continual energy performance improvement.

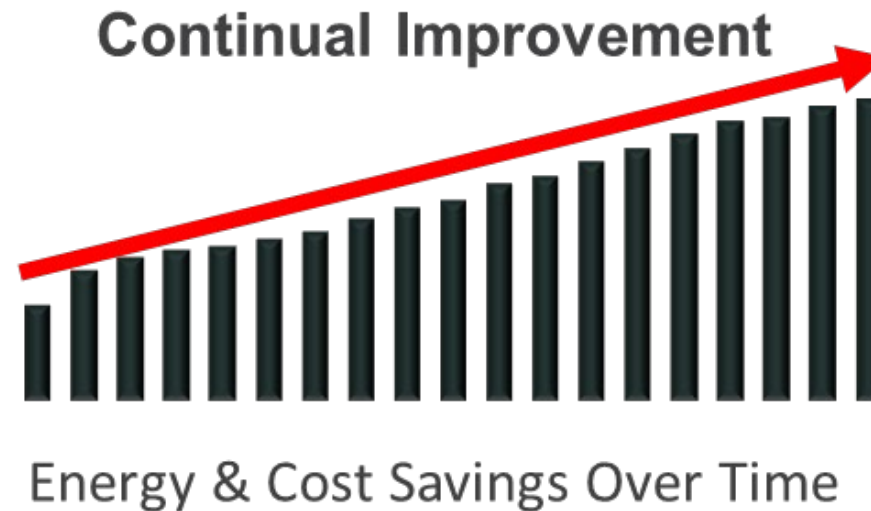


Task 25: Connecting the Tasks



Task 25: Continual Improvement

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



Task 25: Playbook

Activity

- Look at Task 25 in 50001 Ready
- Look at the Task 25 Playbook

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50001 Ready Navigator Playbook

Task 25: Continual Improvement

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

Internal audit: [Click here to enter a date.](#)

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

Management review: [Click here to enter a date.](#)

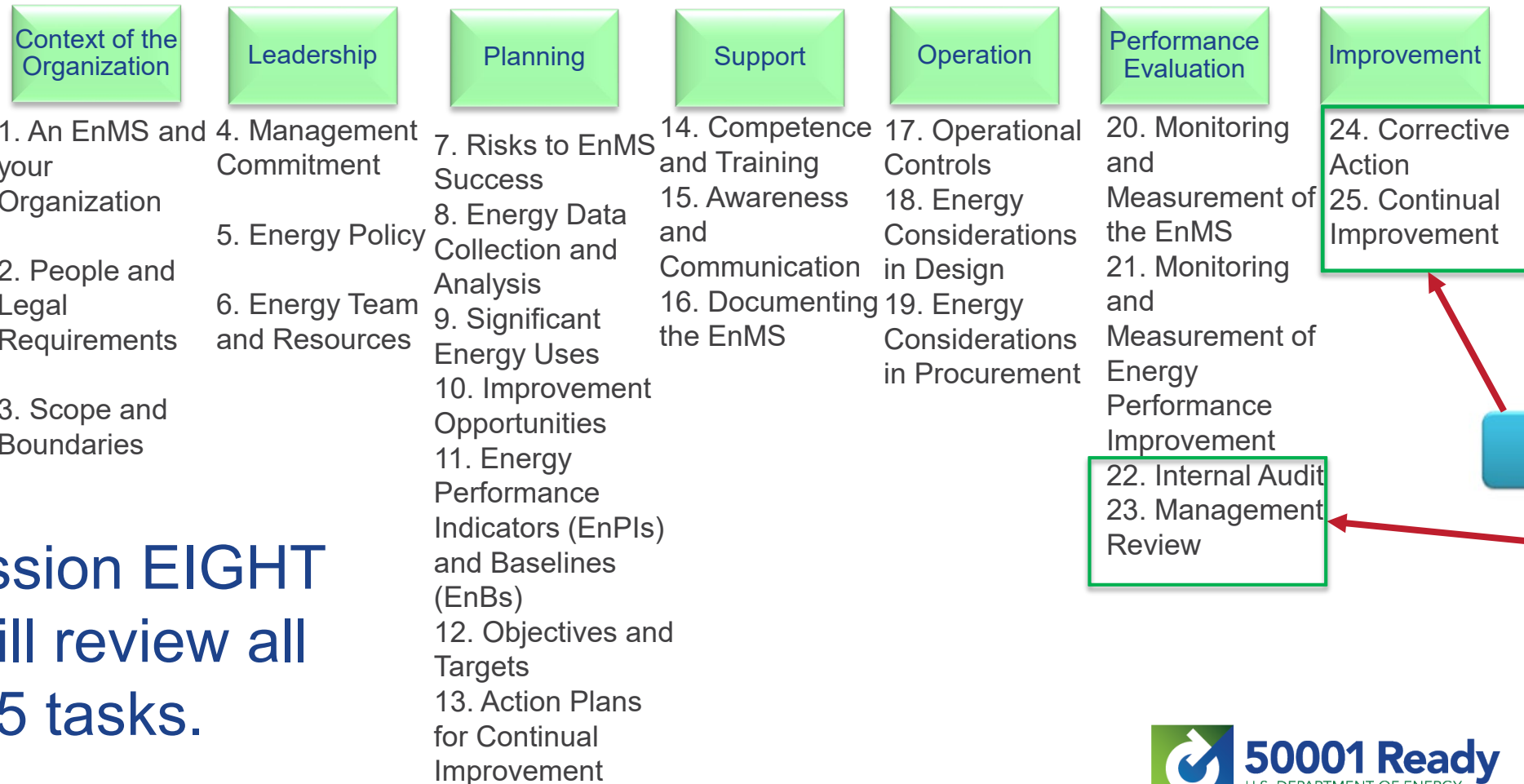
This part of the Navigator Playbook is completed when you have:

1. Checked that processes are in place for reviewing and updating specific parts of the EnMS on a regular basis and that the relevant decisions on “how,” “when,” and “who” are made and implemented.
2. Confirmed that the needed connections between the processes of the EnMS and how the organization manages change are present.
3. Reviewed processes for integrating EnMS requirements into the organization’s business operations and practices.
4. Confirmed that top management promotes continual improvement as part of organizational culture and meets and demonstrates its responsibilities.
5. Ensured you have processes in place to continually improve the EnMS and energy performance.

- Review and Wrap Up

Webinar Training Schedule & Preparations
Kahoot Quiz Game
Q&A

50001 Ready Navigator Tasks



In Session EIGHT
we will review all
25 tasks.

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 – **TODAY** – March 23
8. Wrap Up and Next Steps
 - a. March 30, 10:00 a.m. to 12:30 p.m.

Preparation for Session EIGHT

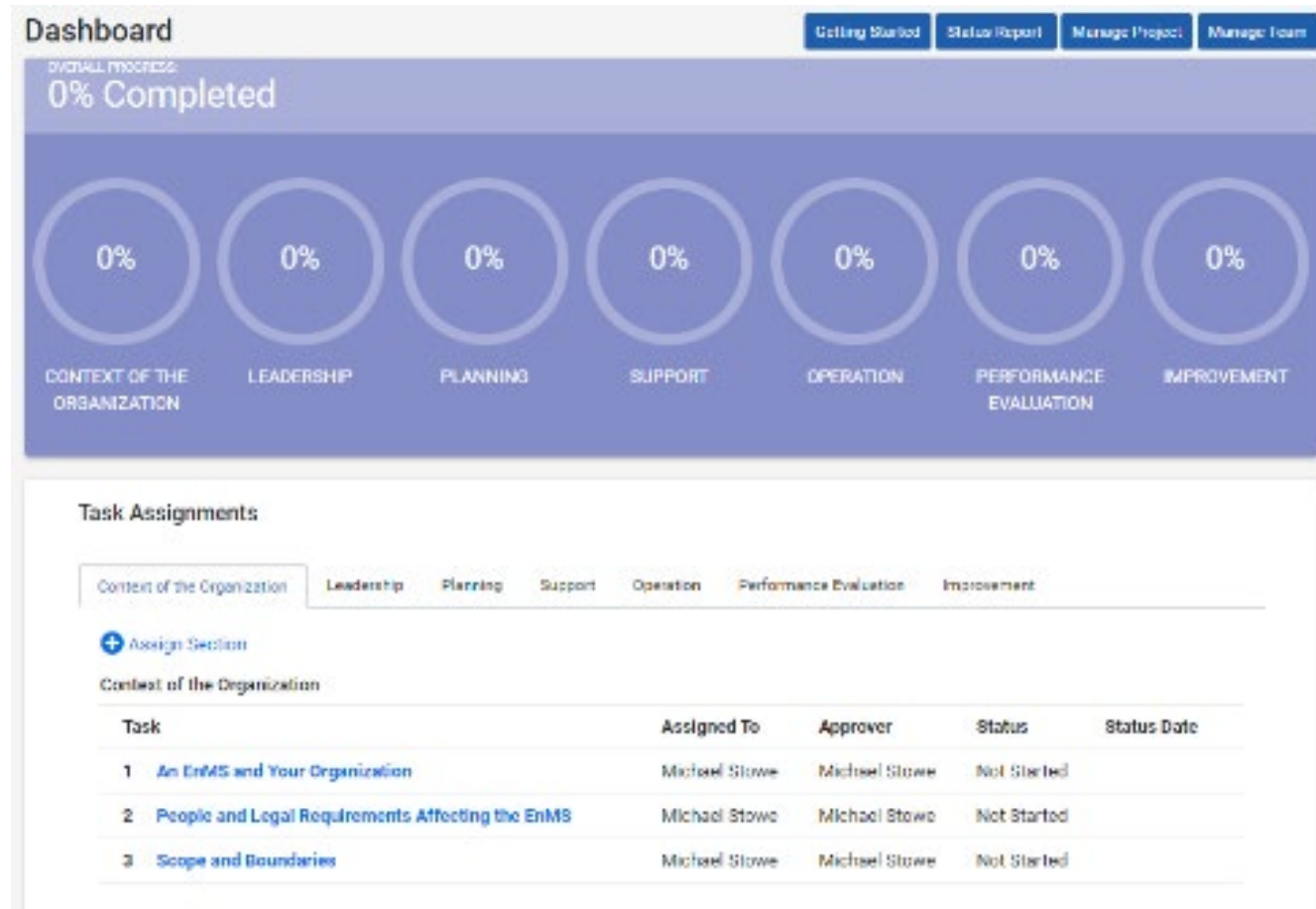
- If desired, purchase the ISO 50001: 2018 standard
- Set up, use, and maintain your 50001 Ready account
- Prepare for Session EIGHT:
 - Review back over the 25 tasks of 50001 Ready
 - Think about items you would like to discuss and review in session 8



In Session EIGHT
we will review all
25 tasks.

Between Sessions

As a routine, use the 50001 Ready Navigator to assign tasks and update task completion status



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://betterbuildingssolutioncenter.energy.gov/better-plants/software-tools>

Polling Question 4

Polling Question

- 4) How much time have you spent each week on homework, playbooks, preparations, online in the navigator, etc., for 50001 Ready in between the weekly sessions?
- A. > 8 hours
 - B. 6 to 8 hours
 - C. 4 to 6 hours
 - D. 2 to 4 hours
 - E. 0 to 2 hours
 - F. I love the webinars, but all my time in between sessions is spent to keep the soft service ice cream machine working!



Polling Question 5

Polling Question

5) After listening to today's webinar session SEVEN, and now having covered tasks 1-25, how do you feel about 50001 Ready as a resource to help you with your energy management plans:

- A. Still overwhelmed
- B. Overwhelmed, but feeling much better
- C. Optimistic
- D. Very encouraged
- E. Ready to get Ready
- F. "Please pay no attention to the man behind the curtain!"



And now, our Kahoot Quiz Review Game



Question and Answer Time



Please Contact Us With Any Questions



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