



Improving Energy Performance and Achieving Decarbonization Goals With US DOE's 50001 Ready™ and Superior Energy Performance 50001™

Presented by
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Industrial Efficiency & Decarbonization Office
with
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Lawrence Berkeley National Laboratory

February 15, 2024



Webinar Procedures

- All attendees are on mute
- Submit questions at any time
- The webinar is being recorded
- Please take the after-class survey!

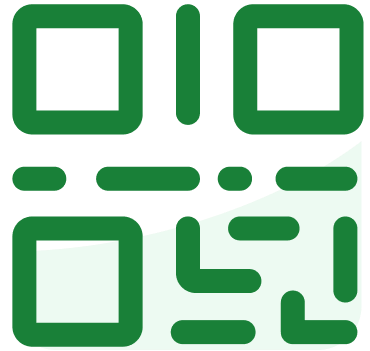


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What Is This “Lighting Design Lab”?

- Seattle City Light's go-to resource for lighting and lighting controls since 1989 – 30+ years
- Formed by BPA and NW utilities to fill education needs for the transforming market
- Expanded to include resources that support whole buildings



Upcoming Events

Course	Day	Time
Building Electrification and Decarbonization	Thu Feb 29	10:00am-11:30am
CHPWH System Considerations in a Nutshell	Thu Mar 14	10:00am-NOON
Delivering High Performance Using VHE DOAS System	Thu Mar 28	10:00am-11:30am
Seattle City Light Controls Incentives	Thu Apr 4	10:00am-11:00am

Stay up-to-date at LightingDesignLab.com and by [subscribing to our newsletter](#).

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What most closely describes your primary position function?

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What industry best represents yours?

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How would you describe your current energy-efficiency efforts?

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Do you have experience with:

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Is decarbonization a priority for your organization?

① Start presenting to display the poll results on this slide.

After Class Survey!

- Thank you for taking it!

U.S. DEPARTMENT OF
ENERGY

Office of
**ENERGY EFFICIENCY &
RENEWABLE ENERGY**

US DOE 50001 Ready Program



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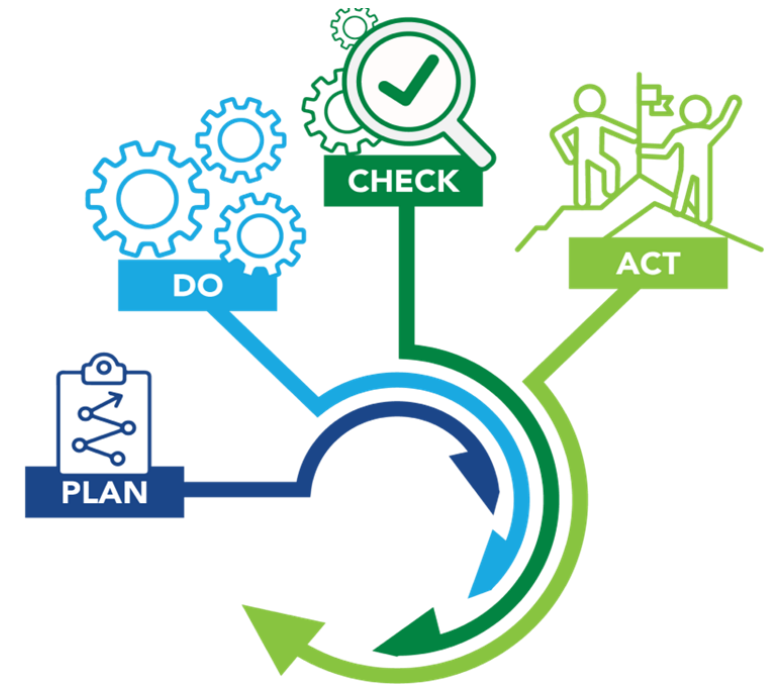
February 15, 2024
Seattle City Light



ISO 50001 Energy Management Systems

What is an Energy Management System?

- **Energy Performance Improvement Platform**
 - Energy efficiency is only one focus
 - Integrated demand side management (IDSMS)
 - Resilience, security, demand, supply
 - Decarbonization
- **Operational Excellence Program**
 - Policies and procedures
 - Systematic approach
 - Change management
- **Broader Organizational Framework**
 - Energy management platform integrated into business systems
 - (Multinational) Corporate reporting, compliance, and alignment
 - Demonstrates action and commitment to long term success



A management system is:

- ✓ Say what you do
- ✓ Do what you say
- ✓ Prove it
- ✓ Improve it

ISO 50001

- A **framework** for continual improvement of energy performance
- A **global standard** developed by 56 countries with U.S. leadership
- A **flexible business practice** used by 45,000+ sites worldwide

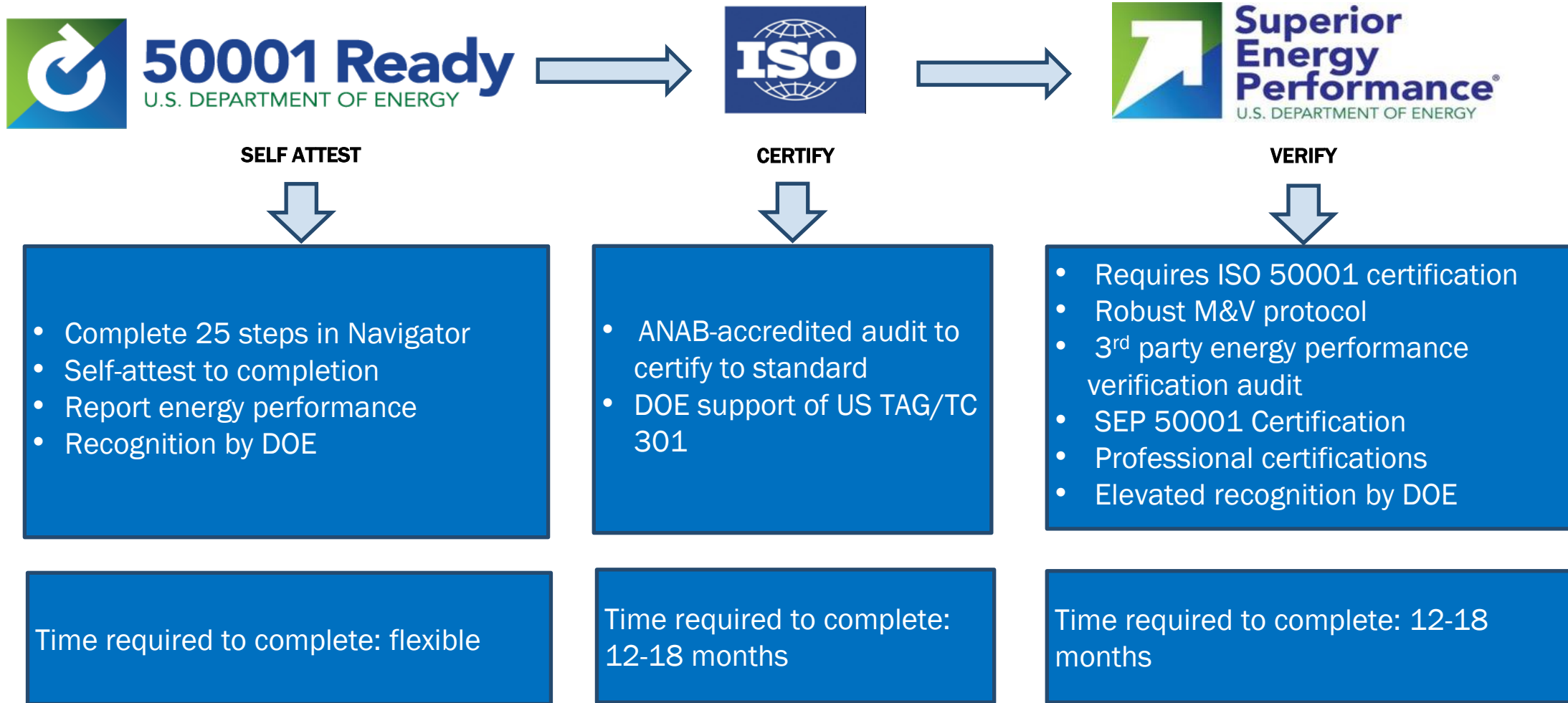


®

50001's data-driven, flexible design helps organizations of all kinds and sizes achieve **persistent energy and cost savings** over the **long term**

US DOE's 50001 Ready Navigator and Program

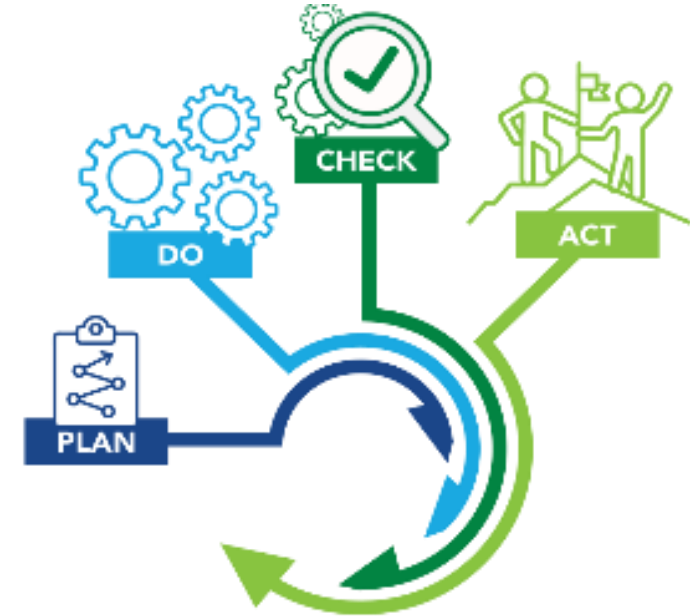
Progression in Energy Management Programs



50001 Ready is part of a Pathway toward ISO 50001 Certification and Validated Energy Savings in SEP

50001 Ready

- Developed and launched by the U.S. Department of Energy in 2017
- No-cost, self-paced, step-by-step framework
 - Aligns with ISO 50001 standard
- Recognizes US-based organizations that implement comprehensive energy management systems



50001 Ready Navigator Platform

- Includes a suite of resources to support continuous improvement of energy performance
 - Actionable tasks
 - Detailed guidance
 - Downloadable Playbooks
- Proven pathway for persistent energy savings and energy-based greenhouse gas reductions



DOE Recognition for Conforming to ISO 50001

STEP 1

Implement ISO 50001 principles

Complete 25 Tasks in US DOE's 50001 Ready Navigator
free, self-guided online tool

STEP 2

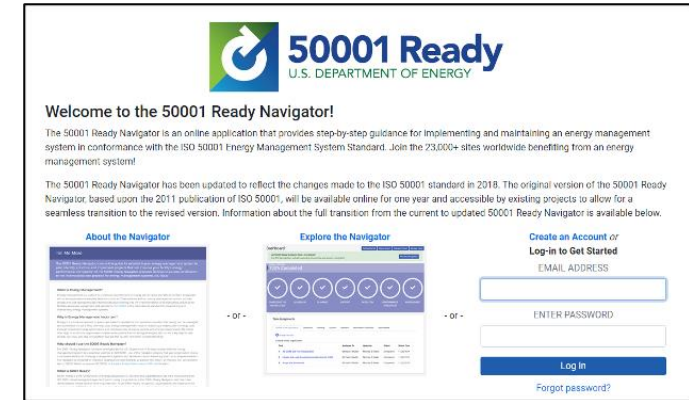
Present energy performance

Submit energy performance data. May use EPA's Portfolio Manager or DOE's EnPI Lite

STEP 3

Self-attest to 50001 Ready

Sign-off by management of 50001 Ready implementation
and commitment



DOE recognizes
50001 Ready achievement

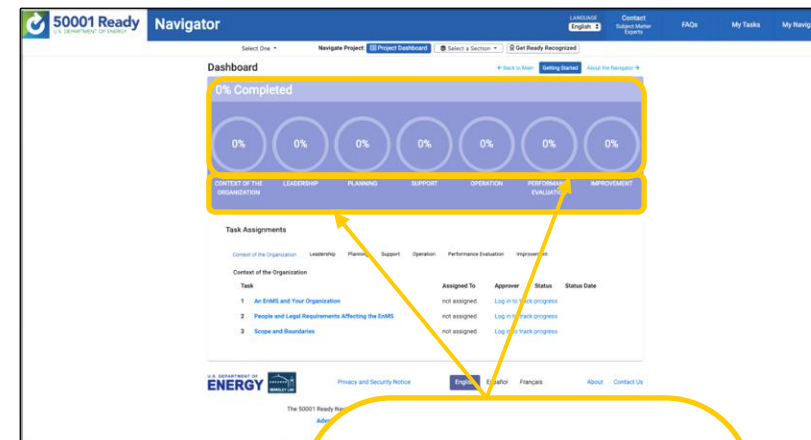


50001 Ready Program & Navigator Platform

Navigator content structure

The 25 tasks are grouped by the **seven** sections of the ISO 50001:2018 standard:

- ✓ Context of the Organization (tasks 1-3)
- ✓ Leadership (tasks 4-6)
- ✓ Planning (tasks 7-13)
- ✓ Support (tasks 14-16)
- ✓ Operation (tasks 17-19)
- ✓ Performance Evaluation (tasks 20-23)
- ✓ Improvement (tasks 24-25)



Track each section's progress right from your dashboard



ISO 50001 Standard Structure and 50001 Ready Content

50001 Ready Coaches train participants on how to implement each of the 25 steps toward building systematic energy management approach using the 50001 Ready Navigator

Context of the organization	Leadership	Planning	Support	Operation	Performance evaluation	Improvement
1. An EnMS and your organization	4. Management commitment	7. Risk to EnMS success	14. Competence and training	17. Operational controls	20. Monitoring and measurement of the EnMS	24. Corrective action
2. People and legal requirements	5. Energy policy	8. Energy data collection and analysis	15. Awareness and communication	18. Energy considerations in design	21. Monitoring and measurement of energy performance improvement	25. Continual improvement
3. Scope and boundaries	6. Energy team and resources	9. Significant energy uses	16. Documenting the EnMS	19. Energy considerations in procurement	22. Internal audit	
		10. Improvement opportunities			23. Management review	
		11. Energy performance indicators and baselines (EnPIs and EnBs)				
		12. Objectives and targets				
		13. Action plans for continual improvement				

50001 Ready Navigator

Free online 'Turbo Tax-like' tool, with step-by-step approach to ISO 50001 implementation

- Guidance broken into straight forward sections, including:
 - **Getting It Done** – what specifically needs to be accomplished
 - **Task Overview** – how does this task connect with ISO50001
 - **Full Guidance** – comprehensive guidance about the task
 - **Transition Tips** – from other management systems or ENERGY STAR
- Form teams, assign tasks, setup multiple projects
 - **Great project management tool**
- Downloadable guidance
- URL: navigator.lbl.gov

The screenshot shows the 'Context of the Organization' page for the task 'An EnMS and Your Organization'. At the top, there is a 'Task Status (click to jump):' bar with 25 numbered steps, where steps 1 through 23 are green and steps 24 and 25 are grey. Below this is a 'Task:' dropdown menu set to 'An EnMS and Your Organization'. A navigation bar contains '← BACK TO DASHBOARD', a progress indicator with steps 1, 2, and 3, and 'NEXT →'. The main content area displays 'Task 1: We determine the strategic issues that affect our ability to improve energy performance and achieve the goals of our 50001 Ready energy management system.' Below this, it shows 'Central Office role for this task: Contributor', 'Current Task Status: Completed', and a progress bar with buttons for 'Not Started', 'In Progress', 'Ready For Review', 'Completed', and 'Next Task'. A 'Get Help' box on the right contains 'Contact Central Office' and '50001 Ready Help Desk' buttons. At the bottom, there is a 'Detailed Guidance: An EnMS and Your Organization' section with tabs for 'Getting It Done', 'Task Overview', 'Full Description', 'Notes', 'Playbook', and 'Assignments'. The 'Getting It Done' tab is active, showing a list of steps: '1. Identify the external and internal strategic issues that affect your organization's ability to improve its energy performance and achieve the intended outcomes of the energy management system (EnMS).', '2. Record this information.'



Detailed Guidance: An EnMS and Your Organization

Getting It Done

Task Overview

Full Description

Notes 0

Playbook

Assignments

Guidance in Navigator is based on ISO 50001 Principles. There is no fee to use the tool.

Ready Navigator Playbook Files

Each *optional* task worksheet functions on its own, but all put together forms a living system and record of an organization's EnMS

- Multiple resources for each task have been streamlined to help you build your EnMS program one step at a time.

The screenshot shows the 50001 Ready Navigator web application. The header includes the 50001 Ready logo, the word "Navigator", and navigation links for "Contact", "FAQs", "My Tasks", and "My Navigator". Below the header, there are tabs for "Project Dashboard", "Context of the Organization", and "Get Ready Recognized". The main content area is titled "Context of the Organization" and features a "Task Status" bar with 25 numbered circles. A dropdown menu shows "Tasks: An EnMS and Your Organization". Below this, there is a "Task 1: We determine the strategic issues that affect our ability to improve energy performance and achieve the goals of our 50001 Ready energy management system." section with a "Get Help" button. A "Resources" table is visible at the bottom.

Name	Type	Description
50001 Ready Playbook Task 01	docx	An EnMS and your Organization



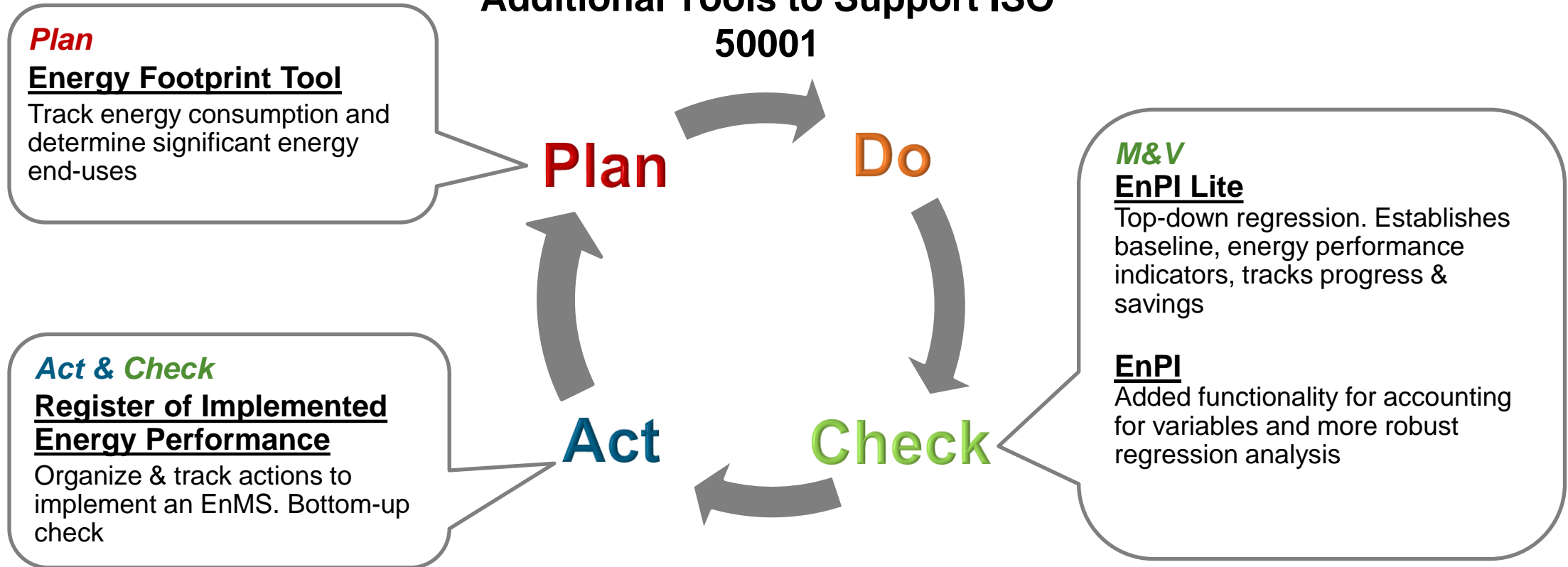
50001 Ready Summary of Tools

The 50001 Ready Navigator

Online step-by-step guide.

The core tool for EnMS development, benchmarking, and assessment.

Additional Tools to Support ISO 50001



50001 Ready Navigator Features – Additional Resources

- Contact Subject Matter Experts
- Training Materials
- FAQ's



Energy Management System and 50001 Ready Introduction Materials

50001 Ready Brief Introduction for End-Users

50001 Ready General Introduction for End-Users

Energy Management System Informative Training

Energy Management System Informative Training for Utility Program Administrators

50001 Ready Multi-Site Implementation Distance Learning for Central-Office Staff

50001 Ready Task Education Materials

50001 Ready Training for Utility Energy Efficiency Staff

50001 Ready In-plant Training for Manufacturers

How Can We Help?

Energy Management Overview

50001 Ready Program

Related Programs and Certifications

50001 Ready Navigator and related DOE Tools

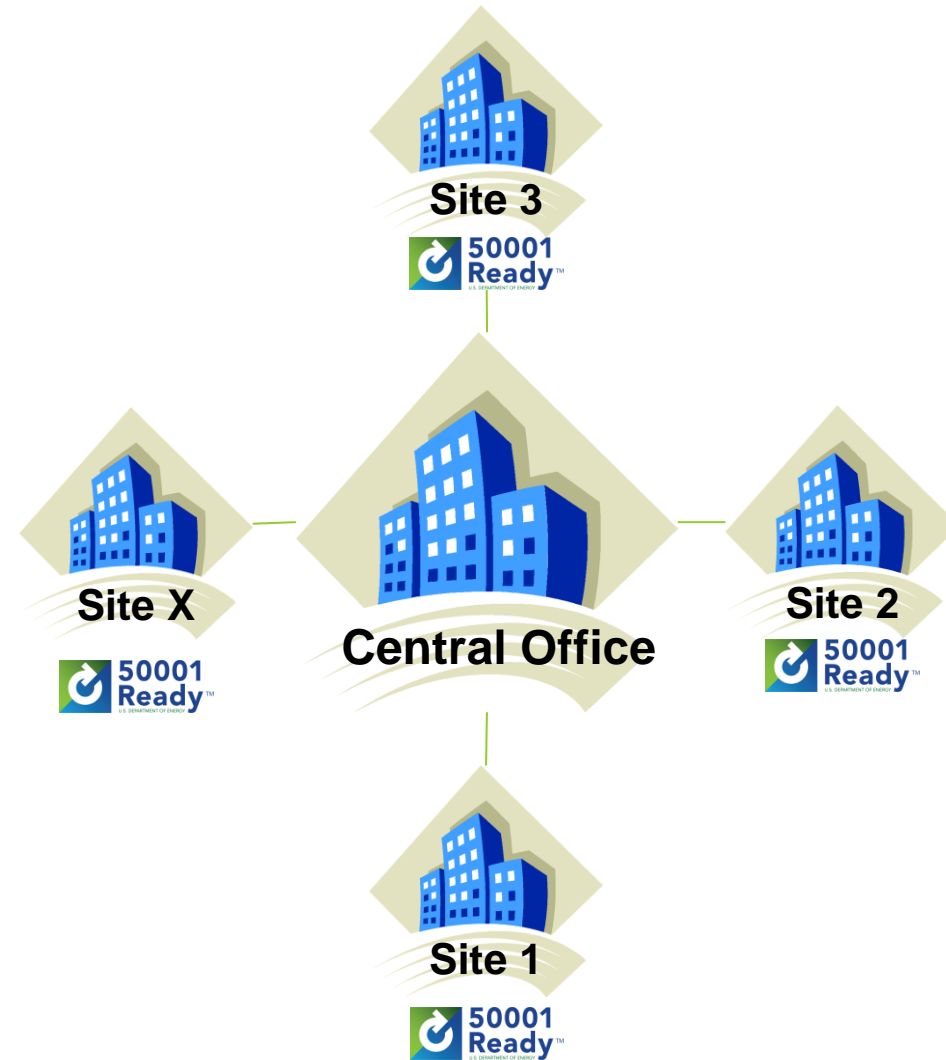
50001 Ready for Utilities and Implementers

Energy Management Overview

- + What is an energy management system and what are its benefits?
- + We manage our energy; do we have an energy management system?
- + My facility already has implemented ISO 9001 and ISO 14001. Will that be an advantage to implementing an energy management system?
- + Why is Energy Management important?

Multi-Site Functionality

- Create and manage multiple 50001 Ready projects under one umbrella project administered by a Central Office
- Complete, participate in, and/or review tasks for all sites at once
- Work with teams across multiple facilities
- Reduce time and effort for implementing 50001 Ready
- Individual sites are still recognized for 50001 Ready implementation



50001 Ready Navigator Features – Multi-Site Platform

- Multi-site functionality – central office involvement to coordinate and support activities at multiple linked facilities
- Reduces time and effort to implement 50001 Ready across multiple facilities
- Standardizes 50001 Ready system across facilities
- Centralized repository for understanding how your facilities manage energy

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																										
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Sector and Program Specific Guidance

- Sector specific guidance
 - Wastewater treatment
 - Government organizations
 - Hospitality
- Program specific guidance
 - ENERGY STAR
 - ISO 9001
 - ISO 14001
- 50001 Ready Program Partner affiliation
 - Join a partner cohort and receive program specific guidance

Additional Guidance will be added based on Experience, Sector, and Partner Affiliation.

← PROJECT NAME ●—●—○—○ TEAM →

What is the project sector?
Why we ask about the project sector.

MANUFACTURING COMMERCIAL U.S. FEDERAL GOVERNMENT
 U.S. STATE OR LOCAL GOVERNMENT OTHER

SUBSECTOR OR SPECIFIC BUILDING USE (HOTEL, COLLEGE, METAL BENDER, ETC):

The 50001 Ready Navigator offers tips and resources that leverage your existing experience, subsector-specific details, and partnership affiliation(s). By making selections below appropriate to your project, you can customize which tips and additional resources will appear. You can make changes to your selections at any time by using the "manage project" function on your project page.

Experience
The project team has experience with:

Yes No X ENERGY STAR Guidelines for Energy Management
 Yes No X ISO 9001
 Yes No X ISO 14001

Project Sub-Sector(s)
Select the sub-sector(s) associated with this project. This will add sub-sector-specific guidance and additional resources for completing tasks. When available, this additional guidance will be found in the "Full Description" tab and additional resources (such as Playbook example files) will be provided in the "Resources" tab of each task.
Important Note: New types of sector-specific guidance will be added in the future.

Federal Agency
 Wastewater Treatment

50001 Ready Partner Affiliation
Specific Energy Management program guidance and contact information will appear in the Navigator if available.
Why associate this project with a Program Partner?

ENTER PARTNER REFERENCE CODE(S) [ENTER REFERENCE CODES, SEPARATE BY COMMAS IF MORE THAN ONE]
optional

Unsure? Don't worry, you may change your program associations at any time in the Project Profile

Subsector Specific Guidance

Task: Scope and Boundaries

← Previous 1 2 3 Next Section →

Task 3: We have documented and approved the scope and boundaries of our 50001 Ready energy management system.

Current Task Status: **Not Started**

Not Started **In Progress** **Ready For Review** **Completed**

Your roles for this task: Contributor & Approver

Detailed Guidance: Scope and Boundaries

Getting It Done Task Overview Full Description Decarbonization Notes Playbook Assignments

Full Description

- ▶ **Wastewater Treatment Sector - Additional Guidance**
- ▶ ENERGY STAR Energy Management transition tips
- ▶ Scope and boundaries - Where to start
- ▶ Scope: Identify the set of activities to be included in your EnMS
- ▶ Boundaries: Define the physical or organizational limits of your EnMS
- ▶ Scope and boundaries statement

Task 3 Guidance Version: v18.03.01.02

The creative commons license is applicable only to the technical content found in the "Getting it Done", "Task Overview", "Full Description", and "Decarbonization" tabs. The creative commons license does not extend to the 50001 Ready Navigator software or other resources.

Need assistance? [Contact the 50001 Ready Help Desk](#) [Download as PDF](#)

Get Help
50001 Ready Help Desk

Detailed Guidance: Scope and Boundaries

Getting It Done Task Overview Full Description Decarbonization Notes Playbook Assignments

Full Description

▶ **Wastewater Treatment Sector - Additional Guidance**

When establishing the scope and boundaries of an Energy Management System, it is easy to over-simplify this process and simply state that all people and equipment within the facility footprint are what constitute the scope and leave it at that. Thus, it is important to think deeper to ensure nothing is being left out, for example:

- Is approval needed from people outside of the wastewater treatment plant, such as city/county operations?
- Does the municipality have authority over changes in controls, equipment, or other operations?
- Will the Energy Management System apply to pumping stations / control instruments located outside the boundary of the wastewater treatment plant fence line, such as collection and transmission systems?

When initially defining your facility's boundaries, it is typical to cover all processes and supporting operations that are either directly financially or operationally controlled. "This generally includes everything within a wastewater treatment plant's fence line and sometimes includes associated pumping or lift stations...Some organizations include office space and laboratories, particularly if they are not separately metered. Most organizations exclude energy used for vehicles, as this tends to add complexity. Transportation energy use typically calls for different energy management strategies than those targeted directly at the facility. Energy consumption from suppliers and customers should be excluded from the organization's boundary." (SWIFT EDMM, p.10)

Added complexity may be introduced if there are multiple treatment facilities that one organization has control over. "Organizations with multiple treatment plants usually establish separate boundaries at each plant and track energy performance at each individual facility. In theory, all facilities can be included under one boundary. While this may add simplicity from an accounting perspective, it masks trends unique to one plant and makes it difficult to identify the impacts of energy efficiency efforts. Additionally, it eliminates the energy manager's ability to identify leading and lagging plants. **For this reason, DOE recommends that wastewater treatment agencies separately track energy performance at each facility.** Agencies interested in pursuing an agency-wide energy efficiency goal can track each plant separately and roll the plant-level metrics into a single agency-wide percentage improvement number." (SWIFT EDMM, p.11)

Decarbonization Guidance

- ✓ Task by task considerations and strategies
- ✓ Three major anchor points
 - WRI and WBCSD – GHG Protocol
 - US EPA – Center for Corporate Climate Leadership (inventory guide)
 - ISO 14064-1 – Quantification and reporting of GHG emissions and removals
- ✓ Training materials for cohorts focusing on decarbonization
 - Tools and resources
 - Playbook files
 - PowerPoint slide decks

Decarbonization Guidance

For each of the 25 tasks, the Navigator has energy management related guidance:

- Getting it Done
 - Simple description of task
- Task Overview
 - Explanation of reason for task
- Full Description
 - Reference materials and links
 - Definitions
 - How-to descriptions
 - Decarbonization guidance
- Playbook
 - Worksheet with guidance
 - Form for documenting

The screenshot shows the 'Task 3: We have documented and approved the scope and boundaries of our 50001 Ready energy management system.' page in the 50001 Ready Navigator. The page is titled 'Task: Scope and Boundaries' and shows a progress indicator with three steps, where step 3 is active. The current task status is 'Not Started'. Below the status, there are buttons for 'Not Started', 'In Progress', 'Ready For Review', and 'Completed'. The user's roles for this task are 'Contributor & Approver'. The 'Detailed Guidance: Scope and Boundaries' section has tabs for 'Getting It Done', 'Task Overview', 'Full Description', 'Decarbonization', 'Notes', 'Playbook', and 'Assignments'. The 'Decarbonization' tab is highlighted with a green box and an arrow pointing from the 'Decarbonization guidance' item in the list on the left. The 'Getting It Done' section contains two steps: 1. Consider the strategic issues and requirements identified as part of Task 1 [An EnMS and Your Organization](#) to determine the scope and boundaries of the energy management system (EnMS). 2. Develop and document an EnMS Scope and Boundaries Statement. The page also includes a 'Task 3 Guidance Version: v18.03.01.02' and a Creative Commons license notice. At the bottom, there are links for 'Need assistance?', 'Contact the 50001 Ready Help Desk', and 'Download as PDF'.

Decarbonization Guidance

Each of the 25 tasks will have guidance on how to incorporate GHG management into an EnMS.

The guidance will point out where there might be tradeoffs between energy efficiency and decarbonization goals.

Task 3: We have documented and approved the scope and boundaries of our 50001 Ready energy management system.

GHG Management Tab:

Determining the scope and boundaries for an energy management system that includes energy-related GHG emissions allows your organization to focus its efforts and resources. As described in the Task Overview, the scope identifies the set of activities that are included in the EnMS, while the boundaries are the physical or organizational limits of the EnMS.

When determining the scope, or set of activities to be included in the EnMS, organizations will need to distinguish between the various sources of direct and indirect emissions that are to be managed by the EnMS. The [GHG Protocol's Corporate Accounting and Reporting Standard](#) defines three categories, or "scopes" of direct and indirect emissions that are widely used and should be considered:¹

- **Scope 1 Emissions: Direct GHG emissions.**
Direct GHG emissions occur from sources that are owned or controlled by the organization, for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.; emissions from chemical production in owned or controlled process equipment.
- **Scope 2 Emissions: Electricity indirect GHG emissions.**
Scope 2 accounts for GHG emissions from the generation of purchased electricity, steam, heat, or cooling consumed by the organization. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organizational boundary of the company. For purchased energy, scope 2 emissions physically occur at the facility where electricity, steam, heat, or cooling is generated.
- **Scope 3 Emissions: Other indirect GHG emissions.**
Scope 3 is an optional reporting category that allows for the treatment of all other indirect emissions. Scope 3 emissions are a consequence of the activities of the organization, but occur from sources not owned or controlled by the organization. Some examples of scope 3 activities are extraction and production of purchased materials; transportation of purchased fuels; and use of sold products and services.

For most organizations, inclusion of scope 1 and scope 2 emissions is the minimum that should be considered when determining the EnMS scope and boundaries. However, some organizations also include scope 3 emissions within the scope of their GHG

¹ The Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard: World Business Council for Sustainable Development and World Resources Institute (<https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>)

objectives and can consider including some categories of scope 3 emissions that are energy-related in the EnMS.

Keep in mind that your organization may choose to **manage** some scope 3 emissions, for instance by engaging with stakeholders in the value chain, whether or not it chooses to **report** those emissions externally. Consider the issues and requirements identified in Task 1: An EnMS and your Organization to determine which GHG emissions categories are relevant to your organization. For instance, the decision to include various categories of scope 3 emissions in the EnMS could be due to those emissions being:

- Large relative to the organization's scope 1 and scope 2 emissions.
- Critical to key stakeholders (e.g. customers or investors)
- Ones that your organization can influence (e.g. outsourced production processes).

In setting the boundaries for the EnMS, consider the EnMS scope identified (especially for scope 3 emissions) to ensure that the boundaries include all managed emissions.

For many organizations, starting with management of scope 1 and 2 boundaries will provide ample opportunity to reduce energy-related GHG emissions.

For corporate entities, the organizational boundary addresses the variety of ownership structures a corporation could have, including wholly owned operations, incorporated and unincorporated joint ventures, subsidiaries, and others. [Chapter 3 of the GHG Protocol's Corporate Accounting and Reporting Standard](#) provides guidance on the use of two distinct approaches to define organizational boundaries for the purpose of accounting for GHG emissions:

- Equity share approach: A company accounts for GHG emissions from operations according to its share of equity in the operation.
- Control approach: A company accounts for 100 percent of the GHG emissions from operations over which it has control.

Corporate entities should review this document to better understand corporate GHG emissions accounting practices.

If you have an existing 50001 Ready-based EnMS and want to adapt it to manage energy-related GHG emissions, you should:

1. **Review your existing scope.** Consider whether your organization will manage energy-related scope 1 and scope 2 emissions and which, if any scope 3 emissions it will include. Make sure the scope reflects the issues and requirements identified when updating Task 1: An EnMS and Your Organization for GHG emissions. Update your scope as needed.

Benefits of Using 50001 Ready to Decarbonize

Help organizations

- Bring structure to decarbonization initiatives, carbon counting, and reporting
- Coordinate their energy efficiency and decarbonization strategies
- Leverage existing management systems (ISO 9000, 14000, 50001, etc.)
- Understand the trades offs of various decarbonization and energy efficiency actions

Support participation

- Better Climate Challenge
- CDP, EPA, other decarbonization programs

The screenshot shows the '50001 Ready' logo with the U.S. Department of Energy tagline. The page title is 'Energy Management Systems Support the Better Climate Challenge'. It contains several sections of text and lists:

- An Energy Management System Will Help Your Organization Meet Its Better Climate Challenge Goals.**

The United States and the world face a profound climate crisis. To mitigate the impacts of climate change while creating jobs and strengthening the clean energy economy, the U.S. Department of Energy (DOE) is challenging organizations to set ambitious, portfolio-wide, and near-term operational greenhouse gas (GHG) emissions reduction goals to showcase how they as leaders are taking measurable steps to address climate change.
- What is the Better Climate Challenge?**

The Better Climate Challenge is a voluntary, market-based platform for organizations to set ambitious, portfolio-wide, GHG emissions reduction goals and showcase how they are taking steps to address climate change. Partnering organizations commit to reducing their scope 1 and 2 GHG emissions by at least 50% (25% for energy-intensive industries) within 10 years.
- How can Energy Management Systems Support the Better Climate Challenge?**

Energy management systems – business practices based on ISO 50001 – are a key set of organizational processes that can be used to save energy as well as reduce GHG emissions. Energy efficiency activities organized as part of an energy management system are proven to lead to persistent improvement in energy performance and represent best practice in meeting energy reduction targets. By extension, a properly implemented energy management system will result in GHG emissions reductions, especially if that is a stated target and/or objective of the energy management system. US DOE offers two energy management system solutions, 50001 Ready and SEP 50001, that can help your organization meet its Better Climate Challenge goals.
- As part of the 50001 Ready program, DOE has developed several resources to help organizations implement energy management systems. The 50001 Ready Navigator is a web-based tool that provides step-by-step guidance for implementing and maintaining an energy management system in conformance with the ISO 50001 global standard. Use of the Navigator ensures that your organization shares a consistent definition of energy management systems, and facilitates a team-based approach to its implementation.**
- How does DOE's 50001 Ready Program Support Decarbonization?**

DOE released a new feature in the Spring of 2022 tailored to organizations using the Navigator for GHG emissions reduction. DOE and Lawrence Berkeley National Laboratory (Berkeley Lab) have developed the 50001 Ready Decarbonization Management Guidance. This guidance applies to each of the 50001 Ready Navigators 25 tasks, and is designed to help organizations comprehensively manage energy-related greenhouse gas emissions using an ISO 50001-based energy management system as a foundation.
- Specifically, the new 50001 Ready Decarbonization Management Guidance will help organizations:**
 - ▶ Align internal systems, processes, and stakeholders to reduce energy-related GHG emissions more effectively and efficiently
 - ▶ Improve the quality and rigor of energy-related GHG emissions reduction data and information shared internally and with key stakeholders such as regulatory authorities, customers, and investors
 - ▶ Create a culture for continual improvement of energy and GHG emissions performance, capture synergies among various investments (e.g., energy efficiency and renewable energy), and create sustained energy and cost savings
 - ▶ Develop or improve a data collection, analysis, and reporting processes for energy-related GHG emissions reduction
 - ▶ Establish a systematic approach to managing and reducing energy-related GHG emissions
- The guidance also provides assistance on how to adapt procurement processes to encourage suppliers to adopt ISO 50001-based business practices as a key strategy for addressing their Scope 3 emissions.**
- How Can I Learn More?**
 - ▶ Visit <https://betterbuildingsolutioncenter.energy.gov/bcc-challenge> to learn more about BCC
 - ▶ Visit <https://betterbuildingsolutioncenter.energy.gov/iso-50001-50001-Ready> to learn more about 50001 Ready
 - ▶ Draft 50001 Ready Decarbonization Management Guidance can be found at: <https://doe.gov/organizations/bcc/betterenergy-management>

Learn more at betterbuildingsolutioncenter.energy.gov

U.S. DEPARTMENT OF ENERGY

50001 Ready Partner Program

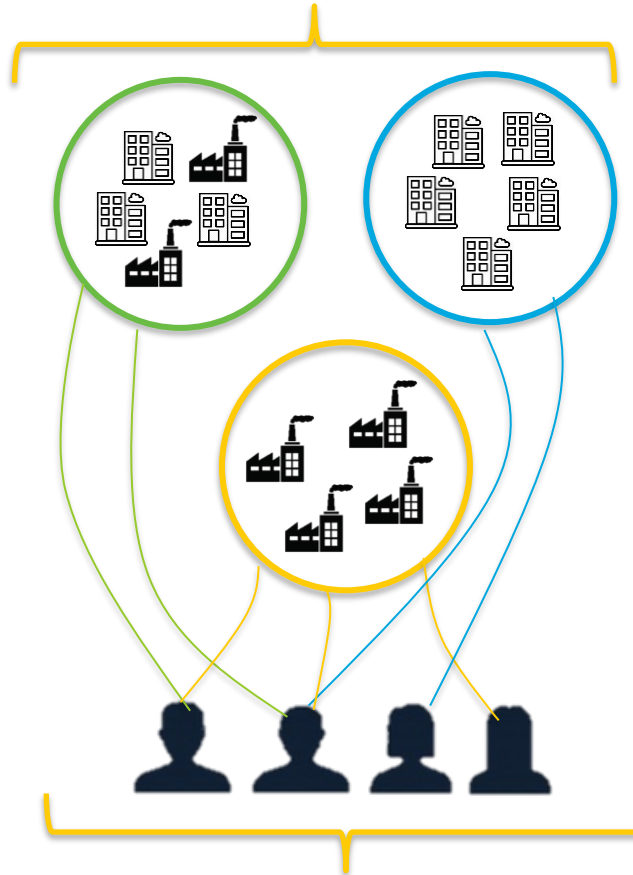
DOE 50001 Ready Partners + Utilities Engaged in 50001 Ready



As of Feb 2024

50001 Ready Partner Program

Organize multiple facilities
into cohorts



Provides Partners visibility to cohort participant progress.
Enables Partners to provide custom guidance

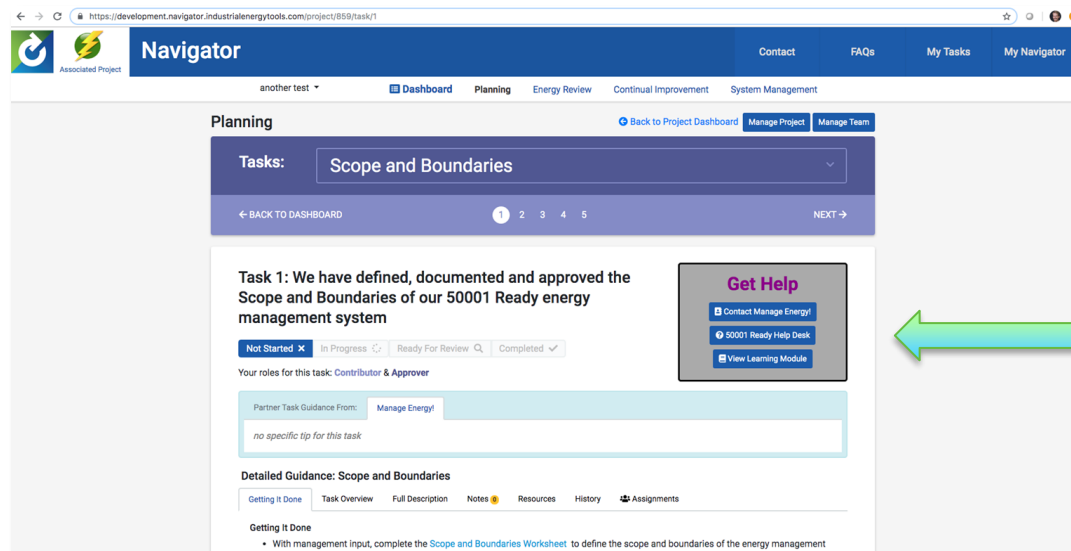
50001 Ready Partner Program



Use of 50001 Ready logo on partner websites and materials



Partner logo on Navigator and recognition certificate



Partner created custom guidance for each task

50001 Ready in Canada

Canadian 50001 Ready Program

Natural Resources Canada now recognizes facilities in Canada!

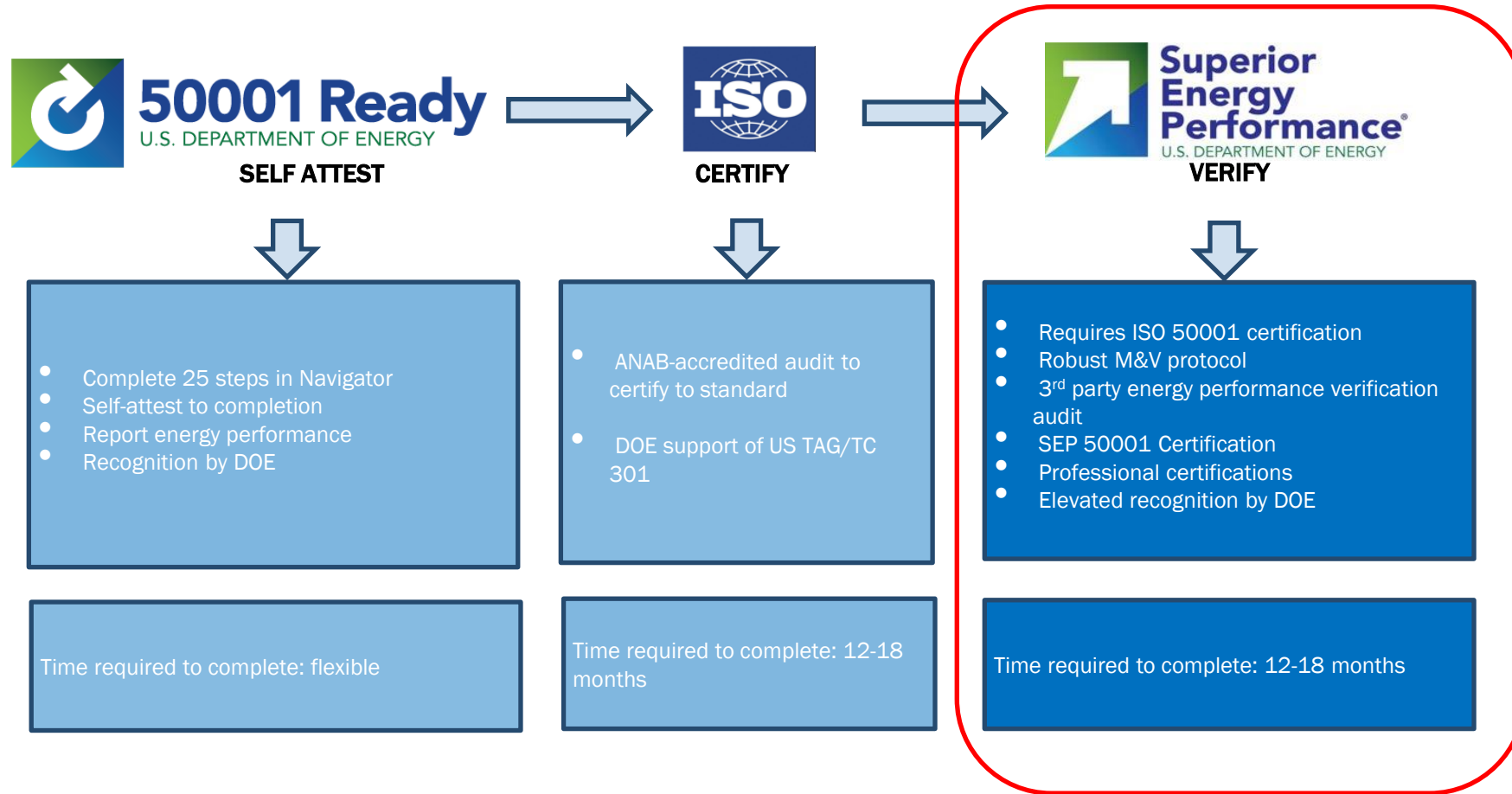


50001 Ready Canada Video

Get 50001 Ready Canada recognition with the Ready Navigator tool

Superior Energy Performance 50001™ Program

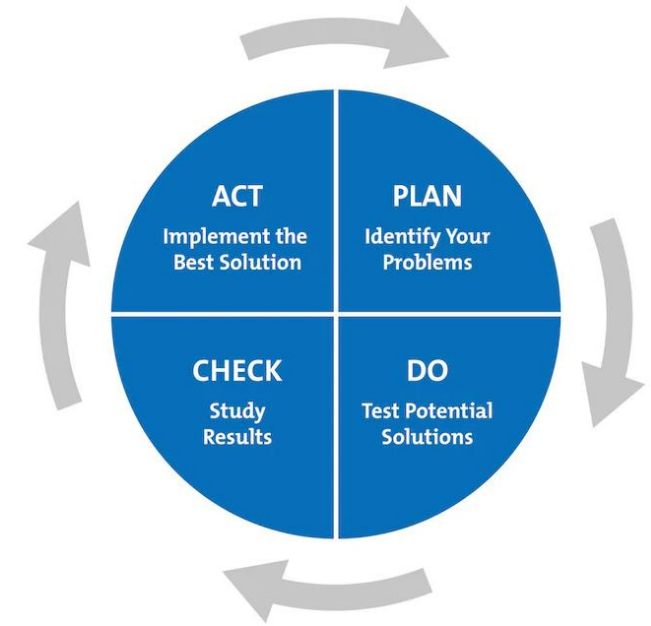
SEP 50001 Certification



50001 Ready is part of a Pathway toward ISO 50001 Certification and Validated Energy Savings in SEP

Overview of the SEP Program

- The U.S. DOE has developed the ANSI-accredited 50001 Superior Energy Performance (SEP 50001) program in which facilities implement an EnMS based on the ISO 50001 standard and pursue third-party verification after achieving established energy performance improvement targets.
- ISO 50001 and SEP 50001 are data driven, using measured energy and relevant data to calculate energy performance.
- ISO 50001 uses the Plan-Do-Check-Act framework oriented towards improving energy efficiency to overcome organizational limitations and drive greater energy savings
- The SEP 50001 certification program provides a transparent, globally accepted system for verifying improvements in energy performance and management practices achieved with an ISO 50001 certified EnMS



SEP M&V Protocol

- Energy performance improvement is determined through use of the Superior Energy Performance Measurement & Verification (SEP M&V) Protocol.
- The SEP M&V Protocol requires the use of linear regression models that meet specified statistical validity requirements to calculate energy savings attributable to energy efficiency actions.
- The SEP M&V Protocol allows for non-routine adjustments, such as major process line changes, further ensuring that the Energy Performance Indicator (EPI) determined through its use isolates gains achieved via the adoption of energy efficiency actions.

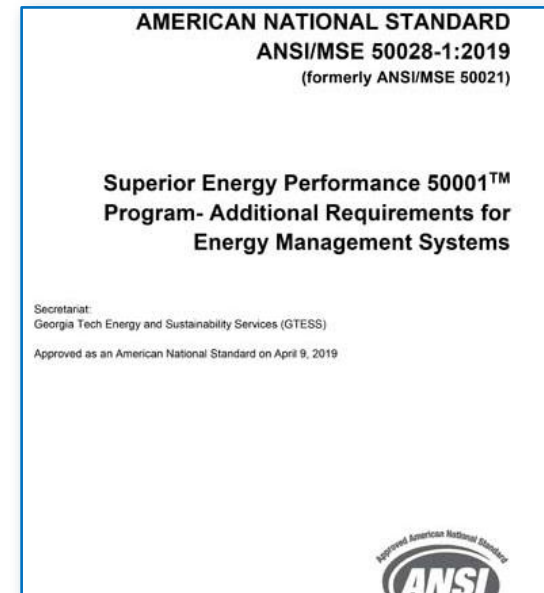
Energy Management Certifications

Creating a System and Creating Trust

The Value of Certification

ISO 50001 Certification mean you can trust the system

SEP 50001 Certification means you can trust the numbers



SEP 50001 Certification Process Overview

Organization meets requirements

- ISO 50001 EnMS
- SEP 50001 Verification
 - ANSI/MSE 50028-1
 - SEP 50001 Energy Performance Improvement:
SEnPI > 0.0%

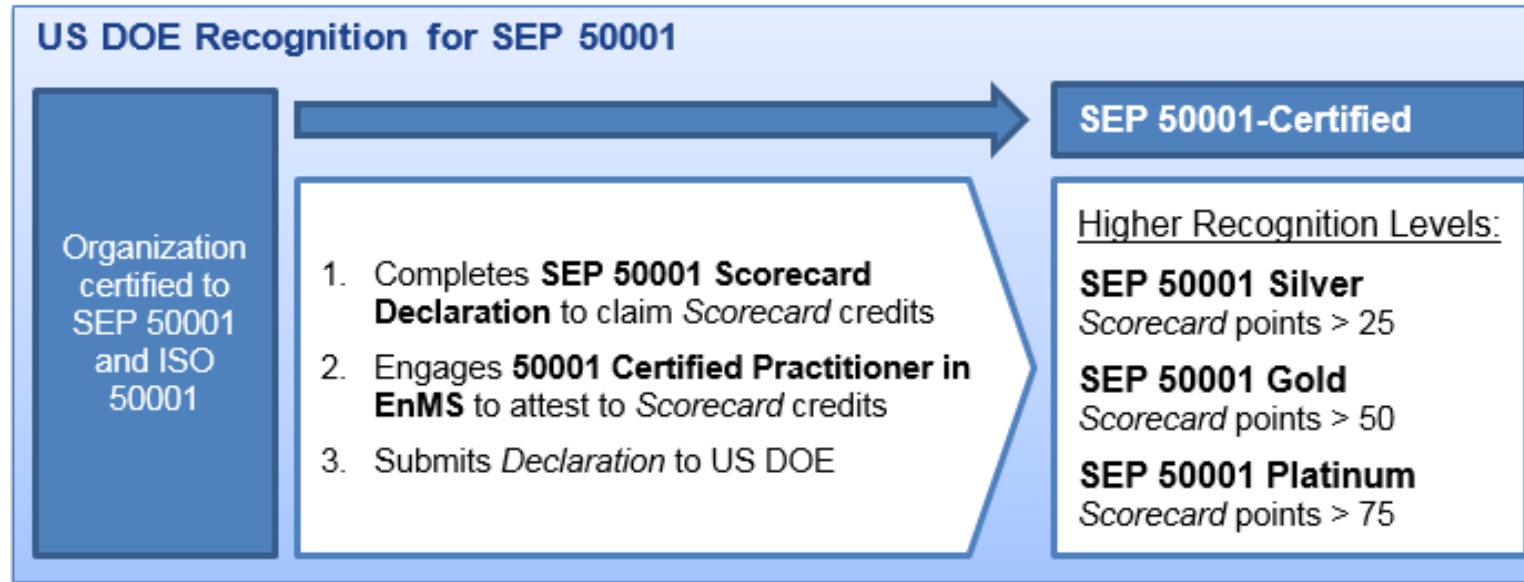
SEP 50001 Verification Body

- Conducts audit
- Issues SEP 50001 program certificate
- Submits *Energy Performance Improvement Report* to SEP 50001 Program Administrator*

SEP 50001
certified 

- **ANAB-Accredited ISO 50001 and SEP 50001 Program Certification**
- Achievement period: 1, 2, or 3 years
- *For multiple-site certification, organization completes the reports for non-sampled sites, not Verification Body

DOE Enhanced Recognition for SEP 50001



- DOE recognizes all SEP 50001-certified facilities.
- Silver, Gold, or Platinum designation are higher levels of recognition earned by SEP 50001-certified entities that exceed certification requirements using the *SEP 50001 Scorecard*.
- *SEP 50001 Scorecard*
 - Describes how organizations achieve DOE recognition for Silver, Gold, or Platinum levels for SEP 50001.
 - Elevated recognition confirmed by DOE (via the SEP 50001 Program Administrator)

Key SEP 50001 Program Documents for Certification

Standards

ISO 50001
EnMS Requirements

ANSI/MSE 50028-1
SEP 50001 Requirements
beyond ISO 50001

ANSI/MSE 50028-2
Specifies the principles and
requirements for SEP 50001
Verification Bodies.

Protocols

**Measurement & Verification
(M&V) Protocol**
Methodology to verify facility energy
performance improvement

Certification Protocol
Process for becoming certified, and
energy performance improvements
requirements timeframes

Forms submitted during certification process

Application for SEP 50001

- Organizations provide to the Administrator and Verification Body.
 - Submit prior to audit.

**Register of Implemented Energy
Performance Improvement
Actions**
Summary of key improvement actions for
bottom-up comparison of energy performance
improvement.

**Energy Performance
Improvement Report**

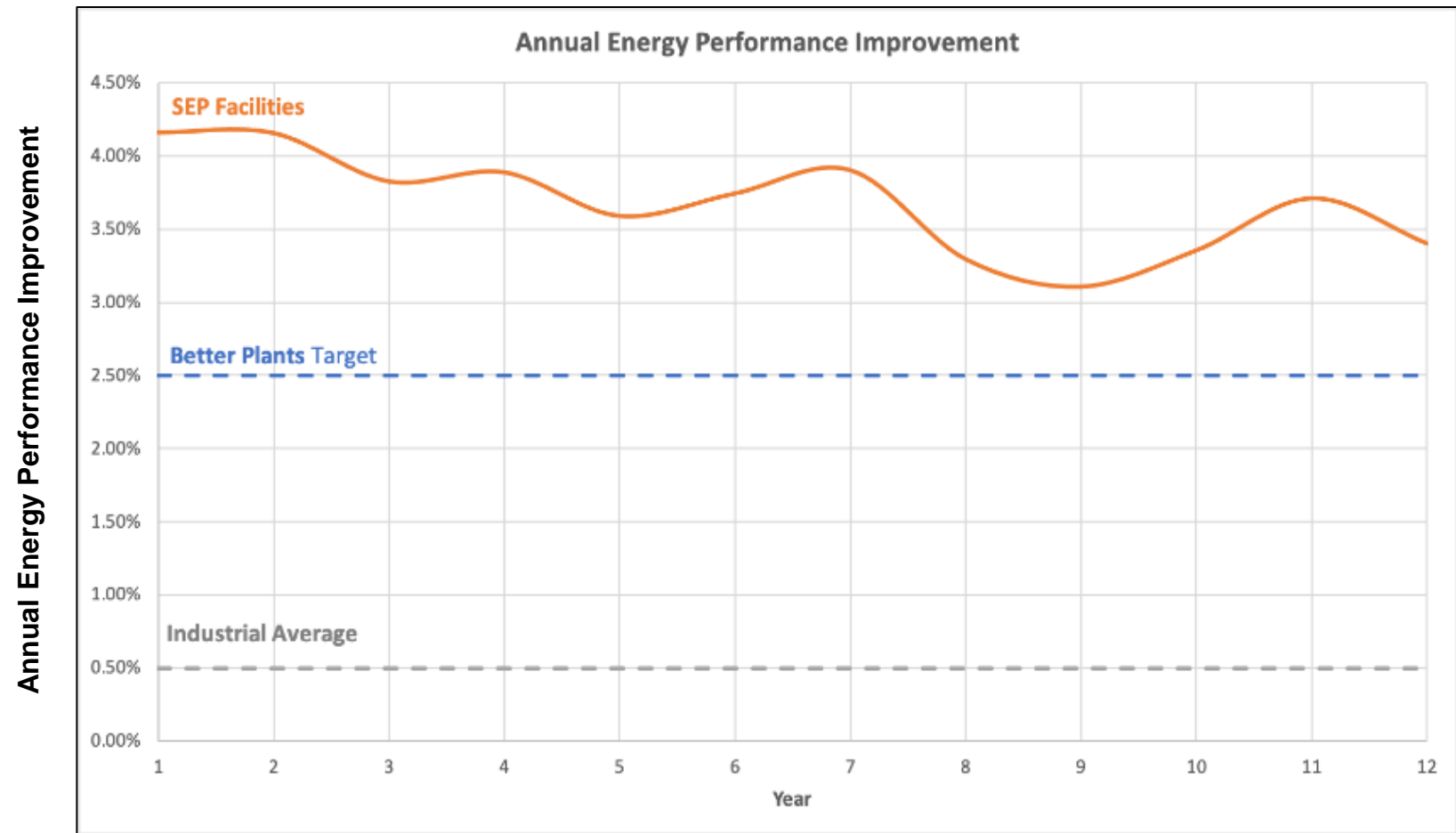
- SEP 50001 Performance Verifiers complete this report
- Submit certification details to DOE.

SEP 50001 [program documents](#) web page also includes: Approval forms for alternative approaches, M&V guidance, Voluntary Cost/Benefit Form, and more.

Superior Energy Performance 50001 Program

- Analysis of eleven years of SEP program participants' energy savings shows a **4.2% improvement** across all facilities in the first year.
- By the 11th year, the facilities are still achieving a **3.4% year on year improvement** in energy performance.
- Far exceeds the average improvement in energy intensity across all of industry
 - 0.5%/year per EIA
 - 1.3%/year per IEA
- Journal article to publish in [Sustainable Energy Technologies and Assessments](#) in late 2023

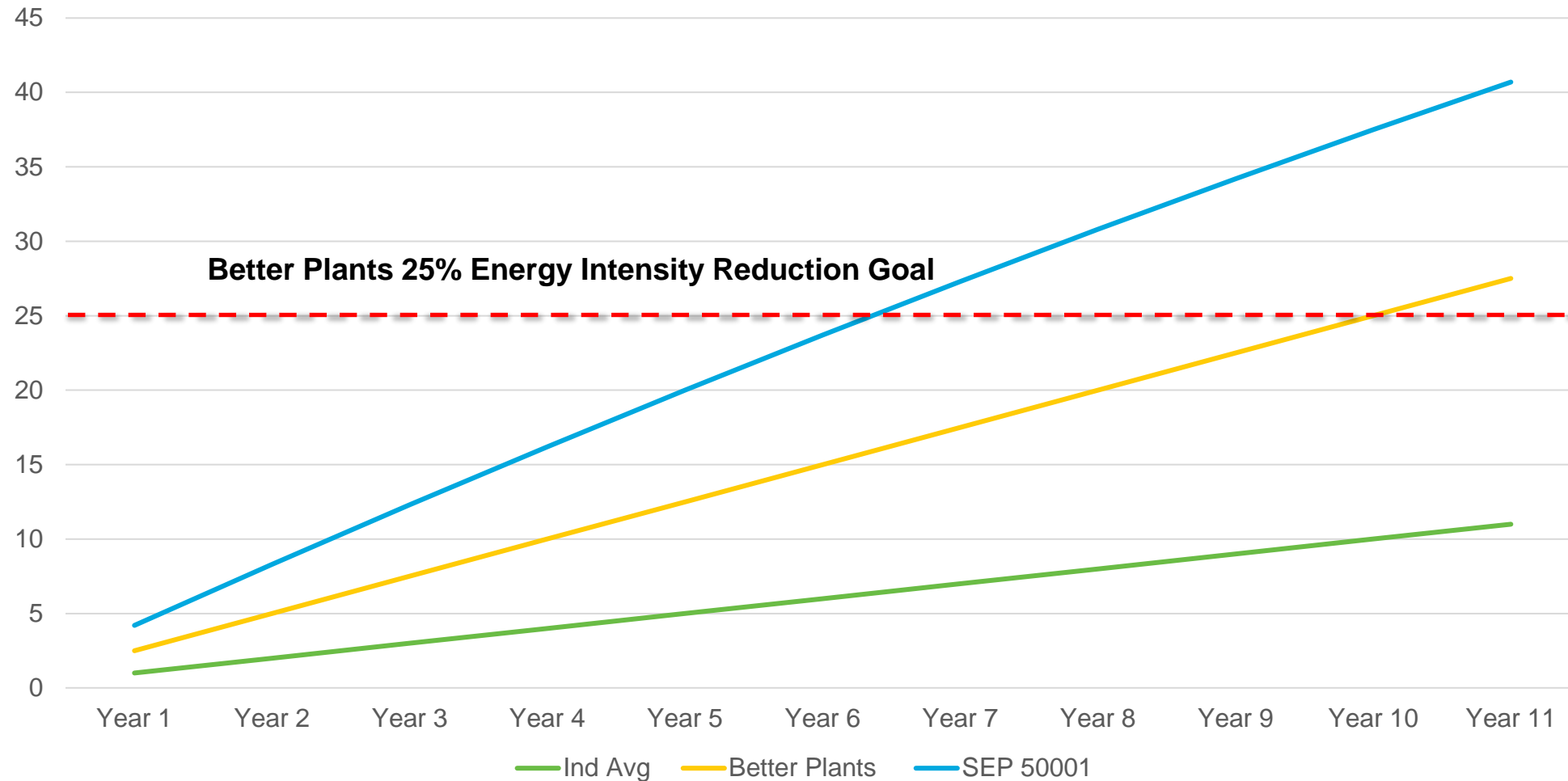
Research Findings: Energy Management Saves More Energy



2022 LBNL analysis

Energy Management Accelerates Results

SEP 50001 performance, Better Plants Goal vs Business as Usual





“50001 Ready has proven critical in managing operations at GM efficiently throughout this year’s challenges and positioned us well to meet our net-zero 2050 goals. Our implementation enabled us to establish common processes and procedures to increase efficiency, optimize production, and aid in effective remote troubleshooting. These actions have been indispensable in supporting GM’s responsiveness to the operational variabilities and challenges introduced by the COVID-19 pandemic.”

Bob Baird, Energy Sustainment Manager, General Motors

Thank you!



Questions?

Visit the 50001 Ready website at energy.gov/50001Ready

Stay informed

CONTACT ethan.rogers@ee.doe.gov

THANK YOU



lightingdesignlab.com | ✉ lightingdesignlab@seattle.gov
