



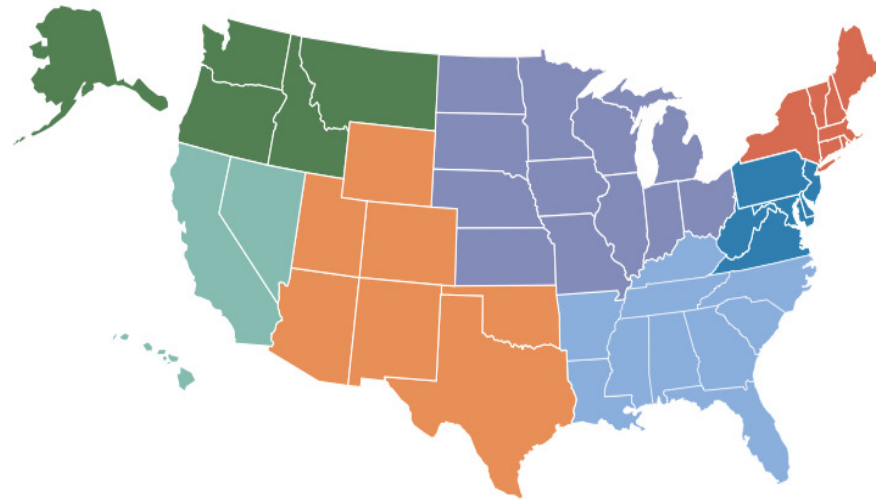
50001 Ready Program for CIBO Members

Jay Wrobel, Manager
Technical Partnerships
Jay.Wrobel@ee.doe.gov

DOE CHP Technical Assistance Partnerships

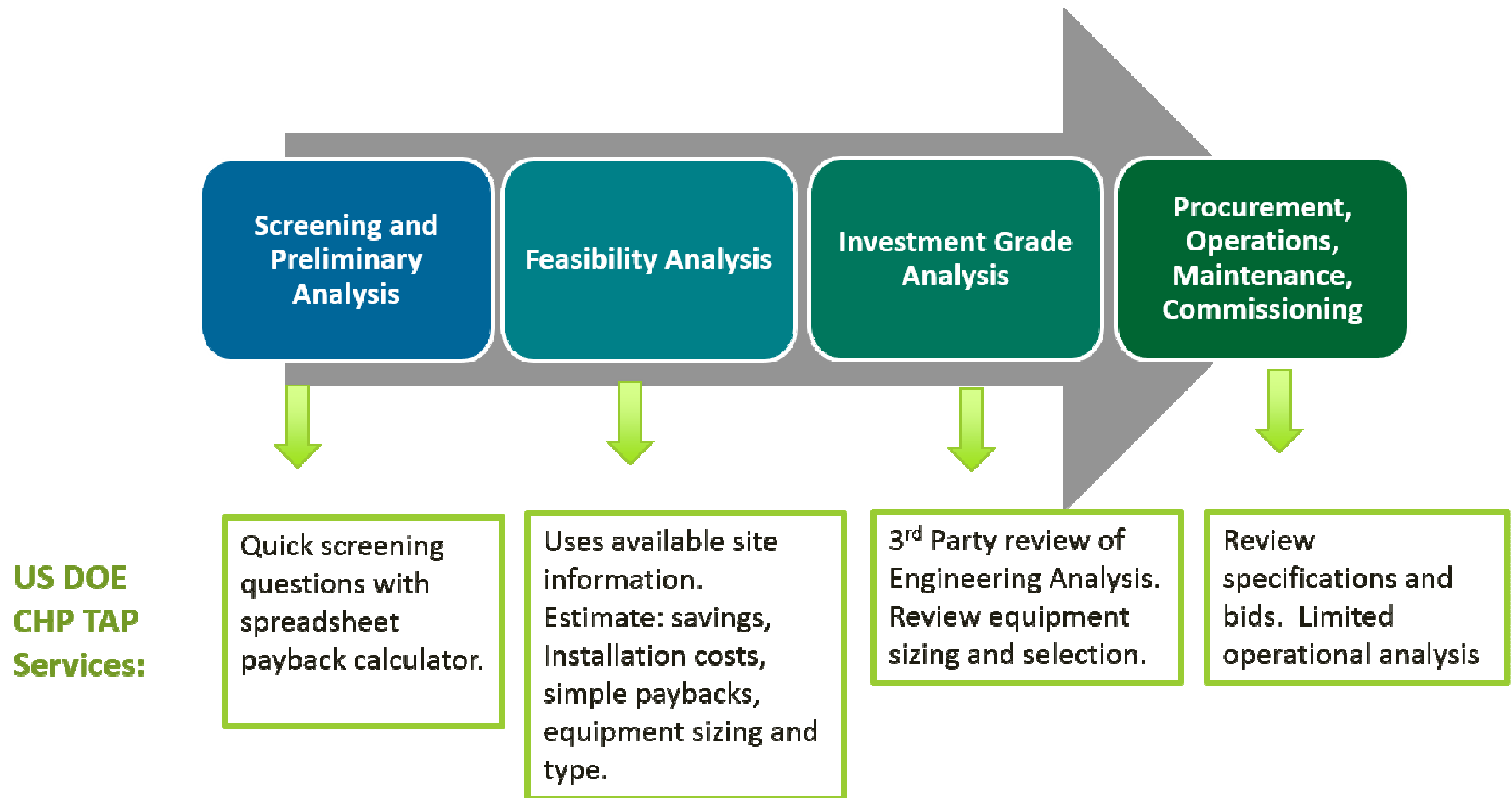
DOE's CHP TAPs can work with CIBO members to advance their mission that non-utility industrial, commercial and institutional energy producers can continue to provide safe, cost-effective and reliable energy to sustain a strong and globally competitive economy **through:**

- **Market Opportunity Analysis**
Supporting analyses of CHP market opportunities in diverse markets including industrial, federal, institutional, and commercial sectors
- **Education and Outreach**
Providing information on the energy and non-energy benefits and applications of CHP to state and local policy makers, regulators, end users, trade associations, and others.
- **Technical Assistance**
Providing technical assistance to end-users and stakeholders to help them consider CHP, waste heat to power, and/or district energy or microgrid with CHP in their facility and to help them through the development process from initial CHP screening to installation.



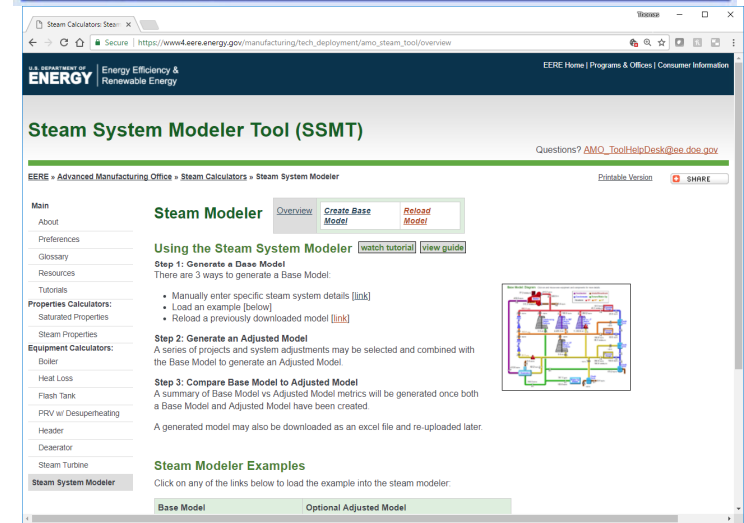
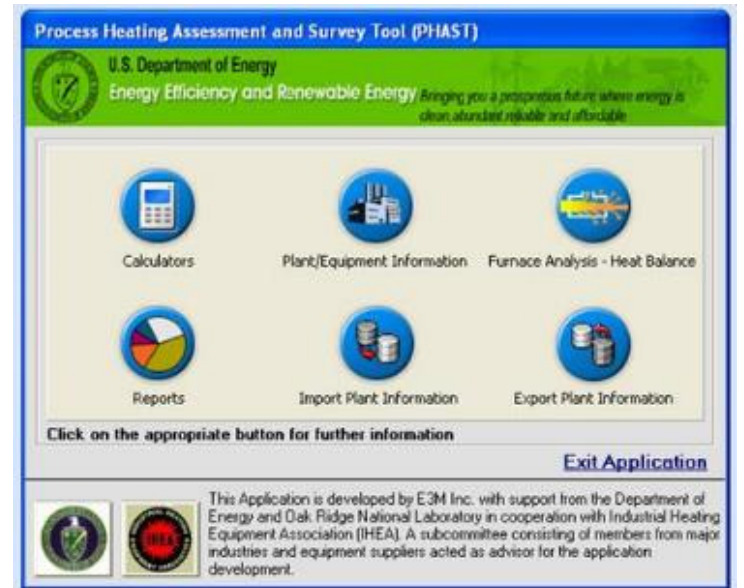
www.energy.gov/chp

CHP TAP Technical Assistance



AMO Tool Modernization Overview

- Modernize to Open Source Software!
 - DOE will own and control code
 - Upgrade tool capabilities where feasible
 - Government-wide Open Source Software
 - MIT License – “Do whatever, but please provide attribution”
 - Desktop / Web / Mobile
- Update and Schedule
 - <https://www.energy.gov/eere/amo/integrated-tool-suite>
 - Process Heat (PHAST)
 - Pumps (PSAT)
 - Fans (FSAT)- 12/31/2017
 - Compressed Air (AirMaster+) - 5/31/2018
 - **Steam (SSMT/SSAT)- 9/31/2018**
- All Beta tools can be accessed here:
 - <https://ornl-amo.github.io/>
- Ongoing Feedback link - <https://www.surveymonkey.com/r/DOE-AMO-TOOLS>



CIBO Engagement

Goal: We want to engage more end-users!

- ✓ **Several CIBO members have provided initial feedback**
- ✓ Specific Requests:
 1. Test Beta Tools
 - Need more real-world test runs!
 2. General Feedback on Tool Functionality
 3. Review coding (for the advanced)
 4. Feature feedback – are there additional features/calculators that could help you
- ✓ Revisiting corresponding training
 - Tool use tutorials will be developed for each system tool (online, video)
 - Expand deployment of In-Plant training curriculum (classroom/in-person)
 - **Explore 3rd party implementation of professional certifications in key systems**
 - Hydraulic Institute is completing a Pump System certification w/ associated curriculum
 - *Compressed Air Challenge* has Compressed Air System curriculum
 - **CIBO – interested in Steam System expert/certification curriculum development???**



Better Plants Program



What Is It: DOE's voluntary partnership initiative to drive significant energy efficiency improvement across industrial companies and organizations

- ✓ Set a corporate wide savings goal (typically 25% intensity over 10 years)

Who Is Involved:

- ✓ Over 190 partners, representing nearly 3,000 manufacturing facilities
- ✓ GE, Spirax Sarco are part of the program
- ✓ Looking in 2018 for a Power Plant Better Plants pilot

Technical Assistance

- In-Plant Trainings
- Setting energy baselines
- Water savings initiative
- Diagnostic equipment program
- Priority access to other DOE programs

National Recognition

- Annual Awards
- Conference speaking opportunities
- Feature on DOE's website
- Success stories featured in DOE newsletters and other publications

Peer to Peer Networking

- Annual conferences
- Regular webinars
- 100s of partner solutions published
- Technology Days at DOE Labs



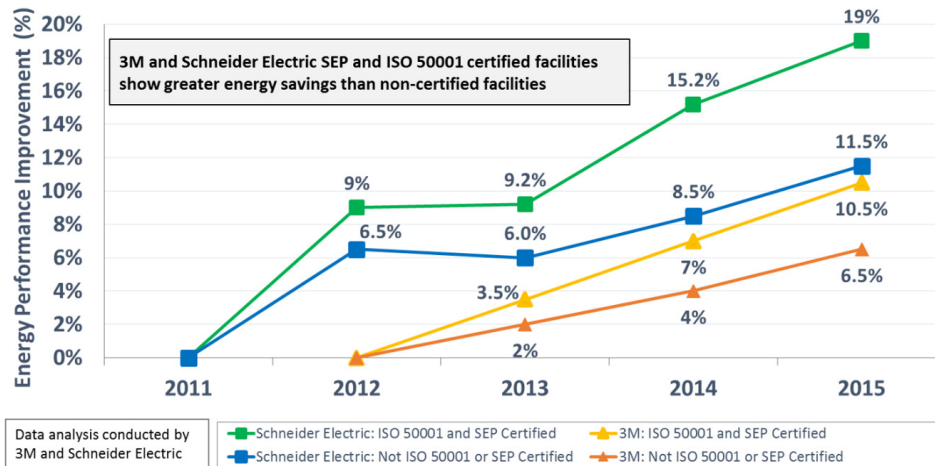
**Main Attraction:
Get Recognized for Self-Attested Compliance to ISO 50001**

energy.gov/50001Ready

ISO 50001 – Energy Management Systems Standard



- **ISO 50001 is an Energy Continuous Improvement platform (similar to Kaizen/6 Sigma)**
 - Culture. Change management process engaging facility/plant personnel with management/leadership
 - Practice. Based on the Plan-Do-Check-Act (PDCA) cycle promotes continuous improvement
- **Key Components**
 - Commitment. Leadership committed and empowering energy management
 - Data. Collection and analysis of energy performance in facility and large energy users
 - Value. Incorporating energy decisions into overall operations



Companies adopting ISO 50001

- 3M
- Aflac
- American Axle & Manufacturing
- BAE Systems
- BMW
- Bosch Rexroth
- Bridgestone
- Cargill
- Chrysler
- Coca-Cola
- Cummins
- Curtiss-Wright EMD
- Detroit Diesel
- Google
- HARBEC Inc.
- Hilton Worldwide
- IBM
- Intertape Polymer Group
- Land O'Lakes
- Johnson Controls
- Mack Trucks
- Marriott International, Inc.
- MedImmune
- NewGold
- Nissan North America
- Samsung
- Schneider Electric
- Titan America
- Volkswagen
- Volvo

50001 Ready as DOE Tool to Drive ISO 50001

The Objective

- Create a readily adoptable, self-attestation, DIY resource and recognition for creating, maintaining and quantifying savings from a culture of continuous energy improvement

50001 Ready is

1. Recognition for self-attesting to *conformance* with ISO 50001
2. Process with no certification requirement from third parties
3. Open source software tools, designed to be adopted by implementers
4. Suite of resources to support continuous improvement in institutional, commercial and industrial facilities
5. Ability to support 'enterprise' or multi-facility adoption



50001 Ready Recognition

Three Steps to Becoming 50001 Ready

STEP 1 Start Implementation of ISO 50001 principles

Use the 50001 Ready Navigator Online Tool

- ✓ The Navigator walks you through the process of implementing an energy management system and prepares you to be 50001 Ready.

STEP 2 Analysis of energy reductions

Adopt Valid Tool to Present Energy Performance

- ✓ DOE offers the EnPI Lite calculator for 50001 Ready.
- ✓ EPA's Portfolio Manager can also be used
- ✓ Other tools can be approved by DOE

STEP 3 File for 50001 Ready recognition

Submit information to DOE for Review

- ✓ Self-attestation of completion of Navigator, executed by team leader and executive
- ✓ Submit energy performance data





50001 Ready Navigator

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 12,000+ facilities worldwide benefitting from an energy management system!

Tell Me More

Explore the Navigator

Create an account or Log-in to Get Started

EMAIL ADDRESS

ENTER PASSWORD

Log In

[Forgot password?](#)

- ✓ Online tool, with simple, step-by-step approach to ISO 50001 implementation
- ✓ 25 tasks divided into 4 sections
- ✓ Ability to assign tasks to team members
- ✓ Extensive guidance available in each module

2nd test project | Dashboard | Planning | Energy Review | Continual Improvement | System Management

Dashboard | Getting Started | Status Report

OVERALL PROGRESS
40% Completed

60%	25%	0%	71%
PLANNING	ENERGY REVIEW	CONTINUAL IMPROVEMENT	SYSTEM MANAGEMENT

Task Assignments

Planning | Energy Review | Continual Improvement | System Management

Task	Assigned To	Status	Status Date	Action
1 Scope and Boundaries	Paul Sheaffer	Completed	03/14/2017	
2 Energy Policy	Paul Sheaffer	Completed	03/14/2017	
3 Management Commitment	Paul Sheaffer	Completed	03/14/2017	
4 Energy Team	Paul Sheaffer	Not Started		
5 Legal Requirements	Paul Sheaffer +1	Not Started		

2nd test project | Dashboard | Planning | Energy Review | Continual Improvement | System Management

Continual Improvement

Tasks: Corrective Actions

← PREVIOUS 14 15 16 17 18 NEXT →

Task 17: We investigate and respond to significant deviations in energy performance and potential issues with the 50001 Ready system, taking corrective and preventative actions as needed

You are currently not assigned to this task.

Request Assistance | Download

Current Status: **Not Started**

Detailed Guidance: Corrective Actions

Getting It Done | Task Overview | Full Description | Notes | Resources | History | Assignments

Full Description

See and implement criteria for significant deviations

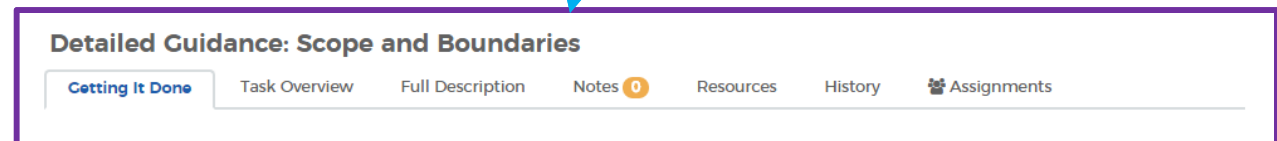
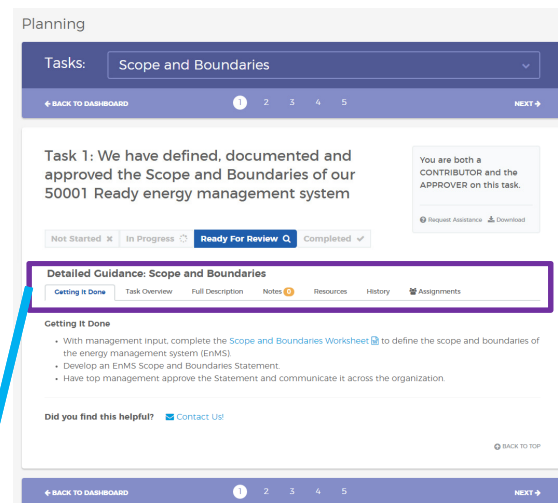
A deviation may be identified by a specific level of variation or can be evaluated by knowledgeable personnel to determine if it is significant and if action is required. Examples of methods for specifying significant deviations can include the following:

- Values outside of control limits
- Percent variation in value
- Trends identified
- Specified variation in EnPs
- Specified variation in SEU performance
- Level of variance between expected and actual performance



50001 Ready Navigator - highlights

- 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
 - *Optional* Transition Tips – from other ISO management systems or ENERGY STAR
- Track and update task progress
- Form teams and assign tasks
- Download guidance
- Create multiple projects
- Access over 100 related resources
- DOE 50001 Ready Recognition!





50001 Ready & Facilities with EnMS

- Being part of *Better Plants* program (or having a robust energy mgmt. system) will prepare you for several of the requirements of the *50001 Ready* program
- We have put together a “crosswalk” document* which highlights the alignment between the *50001 Ready* tasks and the ongoing activities of a typical *Better Plants* partner facility

Degree of comparison	Strong	Partial	Minimal
Amount of requirements met	Most requirements met	Some requirements met	No expectation of completed requirements
Task count	12	8	5

- In other words, a typical Better Plants partner facility would be this far along for each section:

	Planning	Energy Review	Continual Improvement	System Management
Progress by section	Halfway There	Almost Done	Halfway There	Getting Started

* Please see Appendix slides for added detail



50001 Ready Navigator Steps (**underway** tasks)

Planning

1. Scope and Boundaries
2. Energy Policy
3. Management Commitment
4. Energy Team
5. Legal Requirements

Energy Review

6. Data Collection
7. Data Analysis
8. Performance Indicators (EnPIs)
9. Significant Energy Uses (SEUs)
10. Relevant Variables
11. Baselines, Objectives and Targets
12. Improvement Opportunities
13. Improvement Projects

Continual Improvement

14. Monitoring
15. Measurement
16. Operational Controls
17. Corrective Actions
18. Energy Consideration in Design

System Management

19. Documentation and Records
20. Communications
21. Training
22. Procurement
23. Internal Audit
24. Calculate Energy Savings
25. Management Review

Strong preparation
Partial preparation



Partnership with CIBO

How does this fit with CIBO and its Members:

- 50001 Ready is no cost, self-paced, non-certifying
- DOE has developed the platform, training and maintains a 'help desk'
 - Tools and Recognition may be cross branded with CIBO
- Engagement Options
 1. Recruit. CIBO recruits and directs their Members to DOE
 - ✓ DOE maintains the tools, help desk and recognition
 - ✓ CIBO recruits members to 50001 Ready
 2. Concierge. CIBO recruits and 'touches base' with the Members
 - ✓ DOE maintains the tools, help desk and cross-branded recognition
 - ✓ CIBO recruits, hosts Navigator on website & provides recognition
 3. Engaged. DOE trains CIBO personnel to be the 'help desk'
 - ✓ DOE maintains the tools, trains CIBO staff and cross-branded recognition
 - ✓ CIBO recruits, hosts Navigator, provides recognition, staff provide help desk



CIBO Cross-branded Navigator Open Page



50001 Ready Navigator

[Log In](#)[Contact](#)[FAQs](#)[Explore](#)

50001 Ready

U.S. DEPARTMENT OF ENERGY

Open text can be customized

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 12,000+ facilities worldwide benefiting from an energy management system!

About the Navigator

About the 50001 Ready Navigator

The 50001 Ready Navigator is an online guide for establishing an energy management system to plan, identify, prioritize and implement projects that will improve your facility's energy performance. Completion of the 50001 Ready Navigator provides facilities with a unique certification to the international best practice for energy management systems, ISO 50001.

What is Energy Management?

Energy management is a culture for continual improvement of energy efficiency and efficiency that integrates with an organization's existing business practices. Organizations with an energy management system achieve energy and cost savings through informed decision making and the implementation of energy saving practices for facilities processes, equipment and operations. ISO 50001 is the international standard for addressing and maintaining energy management systems.

Why is Energy Management important?

Energy is a critical component to your organization's operations. It's important to realize that energy can be managed and controlled to not a fixed overhead cost. Energy management helps to reduce your organization's energy costs, improve energy performance and optimize use of energy services and energy related assets. No matter how large or small your organization, implementing some form of energy management can be a key step to save energy, cut costs, and stay competitive - just ask the 12,000+ ISO 50001 certified facilities!

Why should I use the 50001 Ready Navigator?

The 50001 Ready Navigator has been developed by the U.S. Department of Energy to align with the energy management system best practices outlined in ISO 50001. 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. The Navigator is designed to help your organization track progress at any of ISO 50001, so that you can self-assess to being 50001 Ready or pursue ISO 50001 or Superior Energy Performance (SEP) certification.

What is 50001 Ready?

50001 Ready is a U.S. Department of Energy recognition for facilities and organizations that have implemented an ISO 50001 based energy management system using the guidance in the 50001 Ready Navigator and the best demonstrated energy performance improvements. To be 50001 Ready recognized, organizations are responsible for

- or -

Explore the Navigator

Dashboard

0% Completed

0% 0% 0% 0%

Task Assignments

Planning Energy Review Audit and Implementation System Management

Task	Assigned To	Approved	Status	Status Date
1. Scope and Requirements	none	LOG IN TO EACH program		
2. Energy Policy	none	LOG IN TO EACH program		
3. Management Commitment	none	LOG IN TO EACH program		
4. Energy Team	none	LOG IN TO EACH program		
5. Legal Requirements	none	LOG IN TO EACH program		

- OR -

Create an account or Log-in to Get Started

EMAIL ADDRESS

ENTER PASSWORD

Log In

[Forgot password?](#)



CIBO Cross-branded Navigator

 **50001 Ready Navigator** [Contact](#) [FAQs](#) [My Tasks](#) [My Navigator](#)

New Enrique ▼ [Dashboard](#) [Planning](#) [Energy Review](#) [Continual Improvement](#) [System Management](#)

Planning

Tasks:

← PREVIOUS

1 2 3 4 5

NEXT →

Task 2: We have developed an energy policy statement, which has been approved by top management

Not Started × **In Progress** ⚙️ **Ready For Review** 🔍 **Completed** ✓

Your roles for this task: **Contributor** & **Approver**

Detailed Guidance: Energy Policy

Getting It Done [Task Overview](#) [Full Description](#) [Notes](#) 0 [Resources](#) [History](#) [Assignments](#)

Getting It Done

- Use the [Energy Policy Worksheets](#) to draft your energy policy statement.
- Have top management approve, issue, and communicate the energy policy statement across the organization and incorporate it into your EnMS awareness program (see [Communications](#)).

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

[BACK TO TOP](#)

Can add special guidance



CIBO Cross-branded Navigator

 50001 Ready **Navigator** [Contact](#) [FAQs](#) [My Tasks](#) [My Navigator](#)

Select One ▼

Only Real Projects [140 real, 138 test]

[← Main Admin Page](#) | [Include test projects](#) | [Users →](#)

Status Key: [Not Started](#) [In Progress](#) [Ready For Review](#) [Completed](#) [★ DOE Recognition](#)

SHOW 50 ENTRIES

SEARCH:

In Admin can track facility progress

Type	Name	Org	City, State	Association	Task Status	Creator	Last Action
					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		
					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		
					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		
					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		
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					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		



CIBO Cross-branded Navigator



50001 Ready Navigator

[Contact](#)[FAQs](#)[My Tasks](#)[My Navigator](#)[+ Create New Project](#)

50001 Ready Navigator Admin Section

[view detailed Event Metrics](#)

▲ Test projects are not counted for general metrics Users Projects Completed Tasks	Recognition: 0 ready for review <small>*counted once per project</small>					All Tracked Events	Task Notes	Test Projects
	Requests	Returned	Cancelled	Resubmitted	Approved			
Total								
New, Past 30 days								
Current								

Can track recognition status

Users	Active	New
Last 24 hours		
Last 7 days		
Last 30 days		
Last 90 days		

All Guidance	Last Updated
English Version	needs to be built
Español Version	needs to be built
Français Version	needs to be built
FAQs (35)	

Sector	#
Industrial	
Commercial	
Institutional	
Not Specified	

Association	#
Better Plants	
Better Buildings	
FEMP	
Not Specified	

- Support Links**
- [Download Data](#)
 - [List of Event Types](#)
 - [List of Email Trigger](#)
 - [Preview Forms](#)

CIBO Cross-branded Recognition



[Member Company]

Is recognized for instituting global best practices in continuous energy improvement across its [facility name] in [location]

UNDER THE LEADERSHIP OF

Executive Leadership
Vice President of Sustainability

Energy Management Lead
Director of Facilities

Add CIBO call out and signature to Recognition

Recognized by the U.S. Department of Energy and the Council of Industrial Boiler Owners
November 15, 2017

Dr. Kathleen Hogan
Deputy Assistant Secretary for Energy Efficiency
U.S. Department of Energy

Executive
Council of Industrial Boiler Owners





How Do I Get Started?



1. Go to ***energy.gov/50001Ready*** for more information (FAQs, etc)
2. If *Better Plants* Partner, speak to your TAM for additional support from DOE
3. Review the **50001 Ready Navigator** (with or without registering)
4. **Sign-up** in the 50001 Ready Navigator (DOE happy to assist)
5. Empower your Energy Team and **Watch Success Unfold**

Contact Pete.Langlois@ee.doe.gov or
Jay.Wrobel@ee.doe.gov
for more info or to get started

Appendix Back-Up Slides

Alignment with Better Plants: Planning Tasks

Task	Progress	Next Steps to Achieve 50001 Ready
1. Scope and Boundaries	Strong	The Better Plants pledge includes all of the partner’s manufacturing operations within the U.S. Consider if there are any non-manufacturing operations (e.g., office space, warehouses) that should be included in your 50001 Ready EnMS.
2. Energy Policy	Strong	Adopting the Better Plants pledge as part of your energy policy should satisfy most of this task. Review additional requirements around legal guidelines and energy efficiency in procurement and design.
3. Management Commitment	Strong	Participating in Better Plants and 50001 Ready represents management commitment, and should satisfy most of this task. Additional discussions with top management specific to the EnMS may be necessary.
4. Energy Team	Partial	The Management Representative can be the person at the facility reporting progress towards Better Plants to corporate leadership. To satisfy this task, remaining members of the Energy Team will still need to be identified.
5. Legal Requirements	Minimal	Though not a Better Plants requirement, most facilities are aware of legal requirements around their energy performance. Ensure that these are codified, reviewed and updated on an ongoing basis to satisfy this task.

Alignment with Better Plants: Energy Review

Task	Progress	Next Steps to Achieve 50001 Ready
6. Data Collection	Strong	Better Plants partners should have basic information collected to satisfy this task.
7. Data Analysis	Strong	Preparing a Better Plants annual report will likely satisfy most elements of this task. The facility may also need to list of energy-using equipment /systems.
8. Significant Energy Uses (SEUs)	Partial	Better Plants facilities will likely have strong understanding of their significant energy uses. To satisfy this task, codify this knowledge and create processes to quantify, review, track, and update this understanding.
9. Relevant Variables	Strong	Better Plants partners should have reviewed relevant variables with their TAM, and satisfied this task.
10. Performance Indicators (EnPIs)	Strong	Better Plants partners will have at least one facility-level relevant variable established. As needed, develop additional EnPIs at the sub-facility level.
11. Baselines, Objectives and Targets	Strong	The Better Plants pledge adopted at the facility-level will satisfy this task. Sub-facility level baselines, objectives or targets should also be reviewed.
12. Improvement Opportunities	Strong	Better Plants facilities have likely progressed in this task, possibly through In-Plant trainings and/or assessments from DOE's Industrial Assessment Centers. This tasks helps organize and prioritize these opportunities.
13. Improvement Projects	Partial	Its likely that improvement projects have been implemented, but these need to be completed under an Action Plan framework to satisfy this task.

Alignment with Better Plants: Continual Improvement

Task	Progress	Next Steps to Achieve 50001 Ready
14. Monitoring	Strong	Better Plants partners will have satisfied most of this task. Review tracking and updating of SEUs and action plans.
15. Measurement	Strong	Better Plants partners will have satisfied this task
16. Operational Controls	Partial	While many partners are likely to be monitoring and tracking the energy use of certain systems, 50001 Ready introduces a more robust strategy to ensure SEUs are operating efficiently and improvement projects are delivering results.
17. Corrective Actions	Partial	Through annual reporting requirements, Better Plants facilities are aware if/when energy performance worsens. For this task, formalize a process to call attention to deviations in energy performance at the sub-facility level and establish protocols to correct and prevent these deviations.
18. Energy Consideration in Design	Partial	Many Better Plants partners already consider energy efficiency when designing new systems and facilities. Formalize this process within the continual improvement context to satisfy this task.

Alignment with Better Plants: System Management

Task	Progress	Next Steps to Achieve 50001 Ready
19. Documentation and Records	Minimal	New for facilities without a formal continual improvement-based EnMS.
20. Communications	Partial	Better Plants partners will have met requirements for external communications, but will need to review requirements and practices related to internal communication.
21. Training	Minimal	Better Plants facilities may require additional EnMS-specific training for their staff.
22. Procurement	Partial	Better Plants partners may have already satisfied this task as part of their approach to meeting their pledge goal.
23. Internal Audit	Minimal	New for facilities without a formal continual improvement-based EnMS.
24. Calculate Energy Savings	Strong	Better Plants partners will have satisfied this task through annual reporting.
25. Management Review	Minimal	New for facilities without a formal continual improvement-based EnMS.