

50001 Ready 101

Thursday, August 22, 2019, 2:00-3:30 pm

SEEA Serves the Southeast

The **Southeast Energy Efficiency Alliance (SEEA)** promotes energy efficiency as a catalyst for economic growth, workforce development and energy security. We do this through collaborative public policy, thought leadership, outreach programs, and technical advisory activities.



Webinar-keeping

- You will be started on mute, please use the Q&A feature in your control panel to ask questions.
- Depending on participation, we may take people off mute for Q&A.
- The webinar will be recorded and all slides are available on request.



Purpose

 To empower you with the information and resources you need to pursue completion of the 50001 Ready program for your or your clients' facilities.



Strategic Energy Management: 50001 Ready Overview

Thursday, August 22, 2019 2:00 – 3:30 p.m. SEEA Southeast <u>50001 Ready</u> Overview <u>Webinar</u>





Today's Topics

- Why Strategic Energy management (SEM)?
- Why 50001 Ready?
- Overview of the 50001 Ready Navigator Tool
- What is the commitment?
- What resources are available?
- What are the outcomes?
- References
- Let's get started







Why SEM?

- 33.63 Quadrillion BTUs
- Make more with less
 Lean Principles
- Reduce energy intensity

 LESS MMBTU/ton
 - LESS MMBTU/linear yard
 - LESS MMBTU/widget







Why SEM? - Energy Efficiency

• Make MORE with LESS:







Why SEM? – EE & EI





Why SEM? - Transformation

Transformation









Why SEM? - Process Block Diagram

Using the process block diagram:

- Energy sources
- Significant energy users
- Process versus Facility Support
- Intermittent loads
- Operational parameters





Why SEM? - Non-Energy Benefits

<u>Non-Energy</u> Benefits of Energy Projects

- Increase plant productivity
- Improve product quality
- Reduce scrap
- Break a process bottleneck
- Reduce overtime
- Improve worker comfort
- Increase available floor space
- Improve work flow
- Reduce emissions
- Improve safety











Why SEM? - Continuous Improvement











Why 50001 Ready? - Background

• <u>50001 Ready</u> is a recognition program based on the ISO 50001 Standard







Why 50001 Ready? – A System

Active Partner Referral | Advanced Energy

more information cancel referral

Create an Account or



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!

Explore the Navigator

About the Navigator





Why 50001 Ready? – Proven Results

- Companies with a formal SEM system have better energy performance improvement:
 - Schneider Electric
 - 19% average improvement with SEM
 - Versus 11.5% without
 - 3M
 - 10.5% average improvement with SEM
 - Versus 6.5% without



Energy & Cost Savings Over Time

• 50001 Ready will help formalize you SEM





Why 50001 Ready? – Key Items

- Continuous Improvement similar to Lean, Kaizen, 6 Sigma
- Company Culture Impact Involve everyone in energy
- Commitment Leadership driven, resource provided
- Data Driven Collection & analysis of energy performance info
- Performance Driven Actual improvement is proven
- Adds Value Incorporates energy decisions into all operations





Copyright© 2016 Advanced Energy

Why 50001 Ready? – A Pathway



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





50001 Ready:

- 1. Recognition for self-attesting to implementation of an EnMS based on the structure of ISO 50001
- 2. No certification required 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. Able to support 'enterprise' or multi-facility use







- Must show demonstrated energy performance improvement for <u>50001 Ready</u> recognition



50001 Ready Measurement & Verification Protocol





• <u>50001 Ready</u> is an online, web-based 25 task process for energy management





Overview of 50001 Ready – The 25 Tasks



23



- Previous experience with other ISO management systems is definitely a plus:
 - ISO 9001 for Quality
 - ISO 14001 for Environmental
 - OSHAS 18001, now ISO 45001: for Occupational Health and Safety





• Leverage experience with ISO 9001 and ISO 14001

Task 1: We approved	e have de the Scop	fined, doc e and Bou	ument Indarie	ed and s of our
50001 Rea	ady energ	gy manage	ement s	system
Current Status: C	Completed			
Your roles for this	task: Contribut	or		
Detailed Guid	ance: Scope	and Boundar	ie	
Getting It Done	Task Overview	Full Description	Notes 🕕	Resources
Full Description		1		
+ ISO 9001 and/o	or ISO 14001 tra	ansition tips		
A				





• Use the cross-reference to ISO 50001





Copyright© 2016 Advanced Energy

• Use the task completion guidance







• Use the downloads

Detailed Guidance: Energy Policy							
Getting It Done	Task Overview	Full Description					
Resources							
Name 🔺		Type 💠					
Energy Policy E	Example	pptx 🖻					
Energy Policy V	Vorksheets	docx 🕅					
ENERGY STAR Energy Manage	Guidelines for ement	pdf 🖾					





• Use the EnMS Documentation Guidance Table

REF	ERENCES	DOCUMENTS		RECORDS				
ISO 50001- 2011 Reference	Associated 50001 Ready Navigator Task #	What must be documented?	Notes/Comments	What must be recorded?	Comments/Notes			
§ 4.1 b) § 4.2.1 d) § 4.5.4.1 a)	Task 1 Task 19 See also <u>Energy</u> <u>Manual</u> <u>Guidelines</u>	EnMS scope and boundaries	Setting scope and boundaries is a top management responsibility. Consider documenting EnMS scope and boundaries within an Energy Manual. Or, the scope and boundaries statement can be a standalone document.					



- To paraphrase, <u>50001 Ready</u> puts the Plan, Do, Check, Act process into simple, clear steps:
 - Say what you will do (PLAN)
 - Do what you said (DO)
 - Verify that you did it (CHECK)
 - Review and improve it (ACT)







What is the Commitment?

- STRONG management commitment is essential
 - Allow time for energy team participation
 - Allow time for EnMS development
 - Provide resources needed to succeed
 - Provide resources for travel to trainings, as needed
 - Provide capital funding for energy improvement
 - Communicate energy policy and its importance
 - Provide resources for internal auditing
 - Conduct meaningful management reviews





Active Partner Referral | Advanced Energy

more information cancel referral



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	Explore the Navigator			Create an Account or			
Tell Me More		Dashboard		Managa Proje	times from		Log-in to Get Started
The \$0000 Ready Nevgetor 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. Completions of the \$0001 Ready Neurgetor prepare Skollines to purse certification to the internet-outlines being panagement systems. (SS 50001		DOE Reception Repeated on 50,06,20171 1 online: moneth 100% Completed	te DOE should respond shorty to your reques				EMAIL ADDRESS
What is Energy Management? Dreg meagement is a calmed for contrast improvement of mergy performance and afficency that's insignified within an oppractication servicity toman procision. Oppreciations with an energy meagement system activee		\odot $($	\odot	($\overline{\mathbf{O}}$		
Integra and but were provide information doubter making and the information of integra were placeties and bottome, processes appropriate and operations (b) 50001 is the informational standard for establishing and maintaining energy management apports. Why is Energy Management important?	- or -	A.0000 0000	EVEN CECTAR			- or -	ENTER PASSWORD
Change is a critical component to your organization (operations: it's important to include the energy can be managed and cransified. If one field and only one of the file general process must be to include your capacitation's researy costs thosugh imposed energy performance and occartaid use of energy sources and energy instead asets. No matter those large or instell your organization, implementing source them of energy insteads more crash a way sing to save manage curves as a two compositions—as all for 12000 to 1000 contribution between an energy curves as an electronic save and the 12000 to 1000 contribution between		Task Assignments Perceptore Central Input	samant System Managament				
Why should I use the 50001 Ready Navigator?		Assign Section					
The 50001 Ready Nanigator 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 Nanigator emains that your organization shares		Planning	Assigned To Status	Status Data	Action		
a consistent definition of energy management systems, and facilitates a team-based approach to its implementation. The Nangator is designed to help your organization build towards all parts of ISO 50001, so that you can self-attest to		1 Scope and Boundaries	First Name Last Name Completed		1		
being '50011 Ready' or pursue (50 50001 or Superior Energy Parlomance (SEP) certification		2 Energy Policy	First Name Last Name Completed		1		Log In
What is \$0001 Ready?		3 Management Commitment	First Name Last Name Compresed		1		209
50001 Ready is a U.S. Department of Energy designation for facilities and organizations that have implemented an 150 50001-based energy management system using the guidance in the 50001 Ready Navigatox, and that have		6 Energy Team	First Name Last Name Compresed		-		
demonstrated energy performance improvement. To be 50011 fleady recognized, organizations are responsible for		5 Legil Requirements	First Name Last Name Completed		· ·		Forgot password?



Energy Footprint Tool



Easily track and analyze:

- Energy consumption Electricity, natural gas, etc.
- Relevant variables Production levels, degree days, operating hours, occupancy rates, etc.
- Energy Uses
- Calculates energy-related greenhouse gas emissions
- Easily exports to DOE EnPI Tool

Copyright© 2016 Advanced Energy



33

EnPI Lite

Navigator's companion online tool for facility-level energy performance

- Enter or upload energy use data and relevant variables
- Top-down regression analysis calculates energy change from baseline year
- Accepts input from DOE Energy Footprint tool and ENERGY STAR Portfolio Manager
- The EnPI Lite Output file is one option for reporting energy performance for DOE recognition



Copyright© 2016 Advanced Energy

log View Emission Estimates || × Clear Model

& Customize Data



Multiple Site Capability

50001 Rea	dy Naviga	tor	Contact	FAQs	My Tasks	My Navigato
My Projects Overview	w ~					
My Project	ts Overview Hide Te	st Projects	Create New Projec	ct Create F	Project for Othe	ers
SHOW 50	ENTRIES			SEARCH:		
	Project Name 💠	Task Progress ≑	Status/Next Action 🗅	Last Activit	Action cy \$	
[test]	San Francisco fa	icility	A Recognition Request Ret	urned 07/25/	/2017	
[test]	Better Buildings Buildings	 Image: A start of the start of	A Request DOE Recognitio	n 07/05/	/2017	
[test]	Oakland office	 Image: A start of the start of	A Request DOE Recognitio	n 04/03/	/2017	
[test]	Building 90	0%	Team Completing Tasks	04/03/	/2017	
SEEA		25	Col	pyright© 2016 ∆	dvanced Energy	2 ad



- Training
 - Full two-day detailed training on 50001 Ready
 - Covers the 25 tasks
 - Covers the tools
 - Lots of practical exercises to get you started
 - Hands on: bring your site data and use the tools
- Help Desk
 - <u>https://navigator.lbl.gov/contact?topic=50001</u> <u>%20Ready</u>



Copyright© 2016 Advanced Energy

What are the Outcomes?

- Gain an understanding of ISO 50001
- Use the <u>50001 Ready</u> navigator tool to complete the 25 tasks
- Gain DOE recognition for self-attesting to completion
- Increase energy performance improvement!
- Improve overall plant operations







What are the Outcomes?

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 <u>and</u> executive
- Submit energy performance data





50001 Ready References

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



Copyright© 2016 Advanced Energy

50001 Ready References

• Key Contacts at DOE

Pete Langlois

50001 Ready Program U.S. Department of Energy <u>Pete.Langlois@ee.doe.gov</u> (202) 586-0984

Bruce Lung Better Buildings/Better Plants U.S. Department of Energy <u>Robert.Lung@ee.doe.gov</u> (202) 586-4411











Summary: 50001 Ready

- - Worth the effort
 - An alternative
 - Help for the weary
 - A heavy lift needs leverage
 - The right tools
 - Step-by-Step
 - Proven improvement
 - Dashboard tracking
 - Great resources
 - Self Attesting
 - Lots of FREE support







50001 Ready – Let's Get Started









Michael Stowe (919) 857-9043 {desk} (919) 904-0279 {cell} mstowe@advancedenergy.org www.advancedenergy.org





Thank You

909 Capability Drive, Suite 2100 Raleigh, NC 27606







IENTROP ENERGY MANAGEMENT PROFESSIONALS

IEnMP Professional Credentials

• Focus on three skills:

- EnMS implementation
- ISO 50001 certification auditing (initially including SEP)
- SEP Energy performance improvement verification
- Competence is determined by a combination of education, experience, and computer-based exam
- Exams
 - based on a job task analysis developed by a committee of peers
 - given at local test centers at candidate's convenience
- Recertification every 3 years
- Per ISO/IEC 17024 requirements, DOE training is offered separately through Georgia Tech

IENTROP ENERGY MANAGEMENT PROFESSIONALS

50001 CP EnMS

50001 Certified Practitioner in Energy Management Systems (50001 CP EnMS)

Purpose:

Defines market standard for identifying professionals with specialized EnMS implementation skills

What is it?

- demonstrates competence in the implementation of ISO 50001:2018
- ISO/IEC 17024 accredited, internationally accepted certification
- Based on a combination of education, experience, and computer-based exam

Target Audience- all sectors

- energy efficiency professionals
- consulting engineers
- large end users
- management system auditors

114 certified professionals to date

IENTROP ENERGY MANAGEMENT PROFESSIONALS

50001 EnMS Practitioner in Training

- Purpose
 - Provides early-career recognition for expertise in ISO 50001 energy management systems
- Benefits
 - Provides market distinction and reduces by one year the qualifying work experience required for 50001 CP EnMS

Eligibility

- Open to any candidate with a four-year degree or higher in energy management, engineering, architecture, science or math.
- Based on evidence of successful completion of the 50001 CP EnMS course with knowledge checks (online or classroom).
- 4 years to complete experience requirements and pass 50001 CP EnMS exam

50001 CP EnMS Training

Two Options - Online and classroom

- Online 10 weeks, weekly webinars & HW
 - Spring class starts March 25, registration open till March 11
 - Fall starts in September
- Classroom 4 days with online pre-course
 - August 26-29

Classroom Version Offered onsite

https://pe.gatech.edu/subjects#manufacturing

DOE Tools – 50001 Navigator, Energy Footprint, EnPI Lite



Georgia's Manufacturing Extension Partnership

A unit of the Enterprise Innovation Institute

www.gamep.org









Southeast Energy Efficiency Alliance | www.seealliance.org

www.SEEALLIANCE.org