



# US Department of Energy 50001 Ready Network Series



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[www.manufacturing.energy.gov](http://www.manufacturing.energy.gov)

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# Welcome + Logistics

Welcome to the DOE 50001 Ready Utility Network Series meeting!

- Today's presenters
  - Sandy Glatt, US Department of Energy
  - Aimee McKane, Manage Energy
  - Bill Meffert, Georgia Institute of Technology
  - Michael Socks, Efficiency Vermont
  - Tim Dantoin, Focus on Energy/Leidos
- Logistics
  - You are on mute by default; use the chatbox to ask questions at any time
  - We will take breaks to solicit questions submitted through the chat box
  - Session is being recorded
  - Slides, recording, and transcription will be available through [energy.gov/50001Ready](https://energy.gov/50001Ready)
  - Double click screen or press escape to exit full screen view
  - Zoom webinar control bar is at the bottom or top of your screen

# Today's Agenda

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- Building Skills to Increase Energy Management Program Impact
  - Institute of Energy Management
  - Energy management credential training
  - The value of holding energy management credentials when providing energy management services and training.
- Feedback
  - Feedback on slide deck
  - Feedback on other potential materials

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# Questions?

- Purpose of this call
- Logistics

# Building Skills to Increase Energy Management Program Impact

Aimee McKane, Board Chair

Frank Faulk, Certification Director

Institute for Energy Management Professionals (IEnMP)

Bill Meffert, Georgia Institute of Technology

Michael Socks, Efficiency Vermont

Tim Dantoin, Focus on Energy/Leidos

## What's in a Name

- **Strategic Energy Management (SEM)** - broad concept “taking a holistic approach to managing energy use in order to continuously improve energy performance, by achieving persistent energy and cost savings over the long term.”<sup>1</sup>
- **ISO 50001:2018** - an international standard with requirements for establishing, implementing, maintaining and improving an energy management system (EnMS)
- **ISO 50001 certification**- third party audit confirming that all ISO 50001 requirements have been met
- **50001 Ready** - DOE recognition program for ISO 50001 implementation and reporting using the 50001 Ready Navigator tool
- **Superior Energy Performance (SEP)** - ISO 50001 certification plus third party verification of energy performance improvements

<sup>1</sup> CEE Strategic Energy Management Minimum Elements

## What is an EnMS really about?

A framework for organizations and companies to:

1. Engage their entire enterprise in continual improvement of energy performance
2. Determine how energy is being used in their organization- and for what purpose
3. Use energy data to identify opportunities for improvements in energy use and efficiency
4. Prioritize and resource actions to improve energy performance
5. Establish control processes to ensure that any improvements are maintained
6. Integrate energy performance into business practices, such as procurement, design, risk assessment, strategic planning
7. At regular intervals, evaluate and report to management on progress and opportunities for improvement in the EnMS and energy performance
8. Act on results of these evaluations to continually improve both their EnMS and energy performance

## Implementing an EnMS

May challenge an organization's existing:

- Management approach
- Business processes
- Operational methods
- Labor practices
- Procurement practices
- Subcontracted services
- Relationships with vendors and suppliers
- Relationships with other organizations

*People and practices, not just technology and things*

## Implementing an Effective EnMS

- Depending on the organization, initial implementation of an EnMS typically requires some mix of:
  - Cohort training
  - Web-based support
  - Tools
  - Coaching
  - Onsite technical assistance
- Goal is sustained organizational change, so that the energy performance improvements continue
- Accomplishing this goal requires specialized and targeted skills

## Why EnMS Skills Matter

- An effective ISO 50001 Energy management system (EnMS) requires skills from two different communities

1. Management system auditors  
(MSS Auditors)

Expertise in Management  
System Business Processes



2. Energy efficiency experts  
(EE Experts)

Expertise in Energy  
Performance

- Without both skills, risks to an effective EnMS include:
  1. MSS Auditors: lack of measurable energy performance improvement due to inability to assess it
  2. EE Experts: lack of top management support due to focus on technical processes

# Value of Certified EnMS Professionals

- Professional recognition
  - Contributes to top management support for EnMS
  - Demonstrates competence across a broad range of skills
  - Engages & motivates staff
- Organization-wide perspective
  - Policy development
  - Communication
  - Business practices (e.g procurement)
- Technical skills
  - Collecting, understanding, and using energy data
  - Identifying potential improvement opportunities
  - Establishing metrics
  - Prioritizing actions
- Continual improvement
  - Operational control
  - Training
  - Internal audits
  - Management review

## Meeting the Skills Challenge

- DOE recognized a skills gap early in the development of ISO 50001
- Determined that professionals certifications were needed to:
  - Demonstrate competence in key areas
  - Provide market differentiation for organizations seeking skilled professionals
  - Ensure international relevance by adhering to ISO/IEC 17024 standards
  - Avoid repeating the lessons learned from initial uptake of other management systems
- Established the Institute for 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

## 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

## Exam Topics

- Understanding ISO 50001 Energy Management System Concepts
- Management Systems
- Energy as Related to Management Systems
- Internal Audits
- Fundamentals of Business Decision Making
  
- Energy Fundamentals
- Understanding Energy Sources and Demand Characteristics
- Energy Problem Solving Skills
- Operating Characteristics of Basic Key Energy Using Systems
- Renewables
- Fundamentals of Energy Project Management - for Developing Action Plans
- Data Collection and Use
- Models & Statistics
- Instrumentation & Controls

## 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

## 2019 IEnMP Updates

### Drivers

- IEnMP interest in broadening appeal of certifications
- Publication of ISO 50001:2018 Energy management systems
- Launch of DOE's 50001 Ready program
- Launch of SEP 50001 2019



International  
Organization for  
Standardization



**50001 Ready**  
U.S. DEPARTMENT OF ENERGY



**Superior Energy  
Performance**  
**50001™**  
U.S. DEPARTMENT OF ENERGY

Credential	Description	Certification Prerequisites	Target Audience	Notes
50001 Certified Practitioner in EnMS (50001 CP EnMS)	ISO/IEC 17024 accredited certification demonstrating competence in the implementation of ISO 50001:2018	None	All sectors; energy efficiency experts, management system auditors, consulting engineers & end users	Broader applicability
50001 EnMS Practitioner in Training	Certificate providing recognition for energy management professionals seeking to become 50001 CP EnMS	50001 CP EnMS training certificate	Early career energy professionals or professionals in transition	new
Industry Specialist	ISO/IEC 17024 accredited certification demonstrating competence in industrial energy management	50001 CP EnMS		Planned 2019; CP EnMS-Industrial are transitioned
EPI ISO 50001 Lead Auditor	ISO/IEC 17024 accredited certification, international best practice, demonstrating competence in auditing of organizations for compliance with ISO 50001:2018	None	Management system auditors	Updated exam available April 2019
SEP Performance Verifier	ISO/IEC 17024 accredited certification demonstrating competence in energy performance verification	50001 CP EnMS SEP Specialist training cert.	Energy efficiency experts with measurement & verification experience	Planned 2019 exam update

## For More Information

<https://ienmp.org/certifications/>

Contact:

Frank Faulk, Certification Director

[frank.faulk@ienmp.org](mailto:frank.faulk@ienmp.org)

Phone: 404.663.0062

Aimee McKane, Board Chair

[atmckane@manage4energy.com](mailto:atmckane@manage4energy.com)

# Preparatory Training

# 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**

# ISO 50001 Energy Lead Auditor

- Four Day Classroom training
- Offered three times annually
  - ✓ April 8-11, 2019
  - ✓ Aug 19-22, 2019
  - ✓ Dec 2-5, 2019

Classroom  
Version  
Offered onsite

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

# SEP Performance Verifier Training

- Three Day Classroom training
- Offered one time annually
  - ✓ May 7-9, 2019

Classroom  
Version  
Offered onsite

- <https://pe.gatech.edu/subjects#manufacturing>

# Questions?

Michael Socks, Efficiency Vermont  
Tim Dantoin, Focus on Energy/Leidos

**Michael Socks, PE, CEM, CP EnMS-Industrial  
Senior Energy Consultant, VEIC**



Experience

18 years in the Energy Efficiency industry  
Industrial Assessment Center – UMass-Amherst

Certifications

Certified Energy Manager (CEM) since 2005  
Licensed Professional Engineer (PE) since 2007  
Certified Practitioner (CP EnMS-Industrial) since 2012



Experience with Energy Management Systems

Efficiency Vermont *Continuous Energy Improvement* program  
(4 cohorts to date – manufacturing, refrigeration, hospitals, WW)  
Pulp & Paper *ISO 50001/SEP Implementation* pilot (1 site in VT)  
NYSERDA *Strategic Energy Management* program  
(4 cohorts to date – manufacturing, wastewater)



**Roles: Technical coach, workshop presenter, Energy Kaizen facilitator,  
energy modeler, internal EnMS auditor, cheerleader**

# Tim Dantoin

- Senior Engineer - Leidos, Inc.
- Wisconsin's Focus on Energy DSM Program – Since 2001
  - Field Staff Manager, Large Energy Users Program.
    - Providing financial, technical and management support for C&I customers exceeding 1 MW
  - Manager, Wisconsin SEM Leaders – initiated 2015
    - Supporting participant implementation of continuous improvement efforts
    - 5 participants are ISO 50001 Certified
    - 8 participants have or are pursuing 50001 Ready
- Credentials
  - Certified Practitioner (CP EnMS - Industrial) – 2014
  - Board of Directors – Institute for Energy Management Professionals (IEnMP) - 2013
  - Trained ISO 50001 Auditor – 2011

**Thank you!**