



**Superior
Energy
Performance**[®]
U.S. DEPARTMENT OF ENERGY

Updates of U.S. Policies and Programs for Energy Management 美国能源管理政策和项目进展情况

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Sino-U.S. Energy Efficiency Forum | Beijing, China
中美能效论坛 October 13, 2016

Contents

主要内容

- Policy and Programmatic Context 政策和项目
 - U.S. ISO 50001 Commitments 美国ISO50001承诺
 - Drivers of U.S. energy management offerings 美国能源管理项目的动因
- U.S. Energy Management Offerings 美国能源管理项目
 - “50001 Ready” “50001预备”
 - Superior Energy Performance 卓越能源绩效
- Next Steps 下一步

US Energy Management (ISO 50001) International

Commitments

美国能源管理（ISO50001）国际承诺

Clean Energy Ministerial (CEM) Energy Management Campaign: “Drive to 50001”

清洁能源部长会议（CEM）能源管理行动：“驶向50001”

- Worldwide goal of 50,001 facilities certified to ISO 50001 by 2020 (up from ~12,000 currently)

2020年（从目前的约12000家）实现50001家设施获得ISO50001认证的全球目标

- The US is among the 9 governments and 10 private sector companies and partners that pledged concrete actions to use ISO 50001 as a transparent mechanism to make progress toward climate and energy goals.

作为9个政府和10个私有部门企业和合作伙伴之一，美国承诺采取实际行动，把 ISO50001 作为透明机制手段，为实现气候和能源目标作出努力

North American Climate, Clean Energy, and Environmental Partnership

北美气候、清洁能源和环境伙伴关系

- US, Canada and Mexico to set a regional common target by 2017 for ISO 50001 uptake contribution to “Drive to 50001”美国、加拿大、墨西哥设立2017年区域共同目标，为应用 ISO50001、实现“驶向50001”做出贡献

US-China dialogue on ISO 50001 中美ISO50001对话

- Cooperation of ISO 50001 implementation approach and sharing of measurement and verification protocol在实施ISO50001和分享测量与验证协议方面展开合作

The US Context for Federal Industrial Energy Efficiency Programs 美国联邦政府工业能效项目

- No U.S. requirement/driver for ISO 50001 certification 美国没有对ISO50001认证的要求和动力
 - No strong levers (e.g. tax breaks, laws, regulation). 没有强有力的杠杆（比如减税、法律和规章）
 - Residential and commercial energy efficiency primarily driven by building code and appliance standards. 居住建筑和商业建筑能效提升动力主要来自建筑条例和家电标准
- Energy utilities and States drive energy management: 能源电力公司和州政府推动能源管理
 - “Strategic Energy Management” (SEM) programs promote productivity and competitiveness. “策略性能源管理”（SEM）项目促进生产力和竞争力
 - Utilities seek energy savings from operational improvements. 电力公司寻求运行提升带来的能源节省
 - SEM is often technical assistance and self-reported savings. SEM常常是技术支持和自汇报的节能量
 - **Clean Power Plan** may be driver for energy management: 清洁电力计划可能推动能源管理
 - Provides flexibility to states to cut CO₂ emissions from power plants by 32% from 2005 levels by 2030. 为各州2030年实现电厂相对2005年水平减排32%二氧化碳提供灵活性
 - Each state customizes its own plan from a variety of measures (e.g., demand-side energy efficiency programs). 各个州应用不同手段（如需求侧能效项目）制定自己的计划

DOE Approaches to ISO 50001 Support Climate Goals 美国能源部通过ISO50001支持气候目标

National Commitments and Goals on Climate and Energy

国家气候和能源承诺和目标

- The U.S. submitted its intended nationally determined contribution (INDC), formalizing its commitment to cut emissions by 26-28% below its 2005 levels by 2025. Target is economy-wide

美国在其递交的国家自主贡献文件(INDC)中提出在全经济范围内，2025年二氧化碳排在2005年基础上减少26%-28%的承诺

National Programs on ISO 50001 support INDC

国家ISO50001项目支持INDC

- U.S. Department of Energy (DOE) would like to position its energy management offerings to help private sector companies and public sector agencies contribute to the INDC美国能源部的能源管理项目是为了帮助私有企业和公共机构为INDC做出贡献
- Organizations can use DOE programs as a framework for reporting emissions reductions: 机构和组织可以利用DOE项目作为汇报减排量的框架
 - Third-party verification: Superior Energy Performance® (SEP™)第三方认证：卓越能源绩效 (SEP™)
 - Self-reporting: “50001 Ready”自我汇报：“50001预备”

5

Two Options for Market with ISO 50001

应用ISO50001的两个选择

Elements 要素

Program Name
项目名称

**US Gov't
Supported
Approach**
美国政府支持方法

**Emissions
Validation Approach**
排放核证方法

**Market
Actors & Drivers**
市场参与者和推动者

US Recognition Options for ISO 50001

美国表彰ISO50001的项目

50001 Ready
50001预备

**US developed program
for ISO 50001
compliance**
美国编制项目履行
ISO50001标准

**Validation with QE²ST
Protocol**
验证QE²ST协议

**Market Allies recognized
by US DOE**
获美国能源部表彰的市场
盟友

**Superior Energy
Performance (SEP)**
卓越能源绩效

**US developed program
for ISO 50001 certification**
美国制定项目认证
ISO50001



**Validation with SEP M&V
Protocol**
验证SEP测量和验证协议

**Accredited certification
bodies recognized by US
DOE**
美国能源部表彰授信的核证机
构

“50001 Ready”: Overview

50001预备: 概述

- Recognition of an organization’s energy and emissions savings from a self-declared ISO 50001 energy system

表彰某企业通过自我声明的ISO50001能源体系实现的节能减排

- Audience:** industrial, commercial and institutional organizations that want to implement ISO 50001 without seeking third-party certification 受众是希望应用ISO50001但不寻求第三方认证的工业、商业和机构
- Desired outcome:** organizations implement ISO 50001 structure and quantify their energy and emissions savings 希望的成果: 机构实施ISO50001框架并量化节能减排量
- Resources:** DOE developing tools to self-attest EnMS implementation in accordance with ISO structure, without requiring third-party certification 资源: DOE开发工具, 帮助在ISO框架下实施EnMS, 并且不需要第三方认证

Guide to Energy Management

(GEM): checks EnMS elements
能源管理指南: 检查EnMS各要素



QE²ST Tool: checks for energy performance improvement over one year
QE²ST工具: 每年检查能源绩效提升



What “50001 Ready” Is...

“50001预备”是什么

1. An SEM program design able to be rebranded for utilities, cities, states, etc. 策略性能源管理（SEM）项目，重塑电力、城市和州
2. Guide for Energy Management (GEM) tool; a ‘self-paced’ tool to establish an energy management system 能源管理指导工具，一个自定进程的工具帮助建立能源管理系统
 - Should not require ‘certified’ professionals to do it 不应要求“认证的”专业人员使用
 - May leverage existing program support people or CP EnMS professionals 可以利用现有项目支持人员或者认证的能源管理系统专业人员
3. Regression-based QE²ST calculator 基于回归的QE²ST计算器
 - Based on utility SEM ‘best practices’ and CPP guidance 基于电力SEM最佳实践和CPP指南
 - DOE will share tool for partner analysis and adoption 美国能源部将分享工具供分析和使用
4. Consistent energy management principles and savings numbers 一致的能源管理原则和节省量
 - Based on ISO 50001 guidance used across the globe 基于全球通用的ISO50001指南
 - Output consistent across sectors, geography, service territories 结果各部门、各区域、各领域都通用
5. Not requiring certification 不要求认证
 - Option to move to ISO 50001/SEP certification (as Tier 2 program) 可以转移到ISO50001/SEP认证（第二级别的项目）

SEP™: An Energy Performance Improvement Certification Program Based on ISO 50001

卓越能源绩效 (SEP™): 基于ISO50001的能源绩效提升认证项目

- Certification to ISO 50001 with third party verification of energy savings 节能量通过第三方认证的ISO50001认证
 - Energy management system (ISO 50001) and 能源管理系统 (ISO50001)
 - Energy performance improvement (ANSI/MSE 50021) 能源绩效提升 (ANSI/MSE 50021)

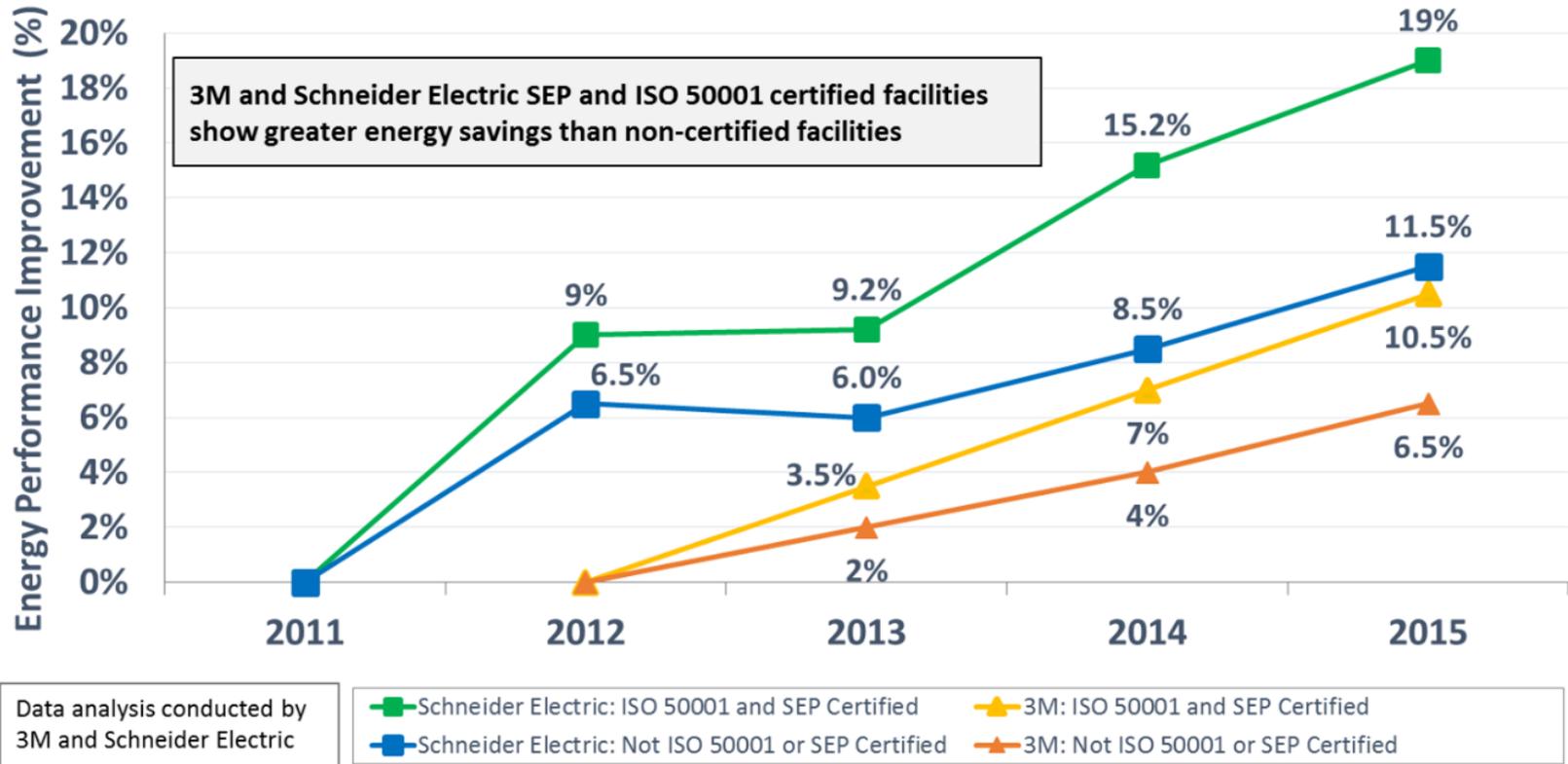


Through DOE's Superior Energy Performance... 通过DOE的卓越能源绩效项目

- Achieving up to \$1 million in annual savings 每年实现约100亿美元的节省
- Significant savings from operational improvements with no capital investment 无资本投资情况下通过运行提高带来巨大节省
- Reducing carbon emissions, with third-party verified energy performance improvement 减少碳排放, 第三方认证的能源绩效提升
- Savings found to be almost double corporate business as usual 与趋势照常相比, 节省将近一倍

ISO 50001 as Business Driver

ISO50001推动商业



Savings at certified facilities greater on average compared to non-certified facilities 平均来看，认证的设施节省量比未认证的要多：

- **3M: 62% greater over 3 years:** 18 ISO 50001 sites across 7 countries; 2 US SEP, 1 Korea SEP certified; 257 non-ISO 50001

3M公司三年内提升62%：18个ISO50001设施，遍布7个国家，2个美国SEP，一个韩国SEP，257个非ISO50001

- **Schneider Electric: 65% greater over 4 years:** 20 ISO 50001 in North America; 16 US SEP certified; 30 non-ISO 50001
- 施耐德电气四年内提高65%：北美20个ISO50001，16个美国SEP认证，30个非ISO50001

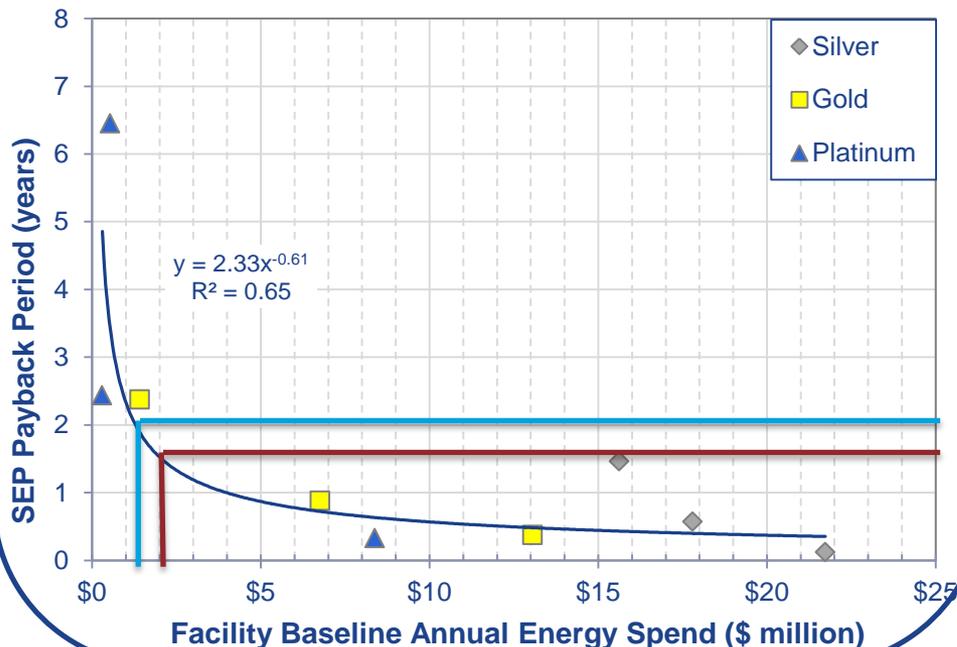
Savings: Cost-effective, deeper, credible

节省：成本有效，深入，可信

Short Payback Periods: 回报期短

Less than 2 year payback for facility with a baseline annual energy spend greater than \$1M 基准年能源成本一百万美元以上企业 回报期小于2年

Less than 1.5 year payback for facility with a baseline annual energy spend greater than \$2M 基准年能源成本两百万美元以上企业 回报期少于1.5年



2015 study of 10 SEP-certified facilities:
2015年对10个SEP认证设施的研究表明:

- 12% average reduction in energy costs within 15 months of starting SEP implementation 自实施SEP起15个月内能源成本平均减少12%
- Average facility saved over **\$430,000/year** from **low/no cost operational improvements**
很低或零成本的运行提升帮助设施每年平均节省**430000**美元
- SEP also results in valuable data to analyze potential capital investments in energy efficiency SEP还为分析潜在的能效资本投资提供了宝贵数据

www.energy.gov/eere/amo/downloads/sep-2015-cost-benefit-analysis-paper

Comprehensive Support for ISO 50001 Implementation Needed 实施ISO50001需要广泛支持

Varied types of technical resources are needed to accommodate the diverse needs of organizations and stakeholders 需要多样的技术资源支持不同机构和相关方的各种需求,



Program Technical Approaches & Requirements: Standards and protocols that provide prescriptive, technical approaches and requirements to ISO 50001 implementation and impact evaluation. 项目技术手段和要求: 提供实施ISO50001以及评估其效果的标准和协议



Software Tools: Tools, resources and guides that help organizations translate program technical approaches, analyze data, and track results. 软件工具: 工具和指南帮助机构应用项目技术手段、分析数据、跟踪结果



Qualified Professionals: Experts certified to advise on and evaluate the quality of ISO 50001 implementation according to program technical approaches and requirements. 合格的专业人士: 建议和评估ISO50001执行的质量

Need all three elements to ensure government program & industry success! 需要全部三项要素保证政府和行业的成功!



**Robust ISO 50001 Impacts
强有力的影响**

DOE Technical Resources to Support ISO 50001

DOE支持ISO50001的技术资源

“50001 Ready” 50001 预备

Superior Energy Performance® 卓越能源绩效



- ISO 50001
- QE²ST Top-Down Regression Protocol
QE²ST自上而下回归协议

- ISO 50001
- ANSI/MSE 50021
- SEP Certification Protocol SEP认证协议
- SEP M&V Protocol 测量与验证协议
- SEP Best Practice Scorecard最佳实践评分卡
- ANSI/MSE 50028, for SEP VBs



- QE²ST Tool 工具
- GEM Tool 工具
- System Assessment Standards 系统评估标准
- System Assessment Tools 系统评估工具

- EnPI Tool EnPI工具
- GEM Tool GEM工具
- System Assessment Standards 系统评估标准
- System Assessment Tools系统评估工具



- Certified Practitioner in EnMS
能源管理体系认证专员
- SEP Trainer SEP培训师

- Certified Practitioner in EnMS
能源管理体系认证专员
- SEP Trainer SEP培训师
- EPI ISO 50001 Lead Auditor 首席审计员
- SEP Lead Auditor SEP首席审计员
- SEP Performance Verifier 绩效核证员

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Learn more:更多信息

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