



Introduction to Energy Management

Module 1 in the “Benchmarking and Energy Management for K-12 Facility and Energy Managers” Course

October 17, 2023

Today's Presenter

Andrew Schulte

Mr. Schulte is a Director in ICF's Energy Efficiency and Sustainability group, with nearly 18 years of experience. In support of the U.S. Environmental Protection Agency's (EPA's) ENERGY STAR Buildings program, Mr. Schulte assists partners seeking to integrate ENERGY STAR tools and resources, including the Guidelines for Energy Management and Portfolio Manager, into organization-wide energy and sustainability strategies. He has also led the development, delivery, and evaluation of the ENERGY STAR Buildings training program, and has presented hundreds of benchmarking and energy management trainings over the course of his career. Mr. Schulte also supports engagement with service and product providers that are helping building owners and operators to develop and execute energy management projects.



Today's Agenda

- Welcome and Introductions
- Learning Objectives
- Key Terms
- Energy Basics
- Principles of Energy Management
- Frameworks for Organizational Energy Management
- Other Key Resources
- Wrap-up and Q&A

Overview of the Benchmarking & Energy Management Course

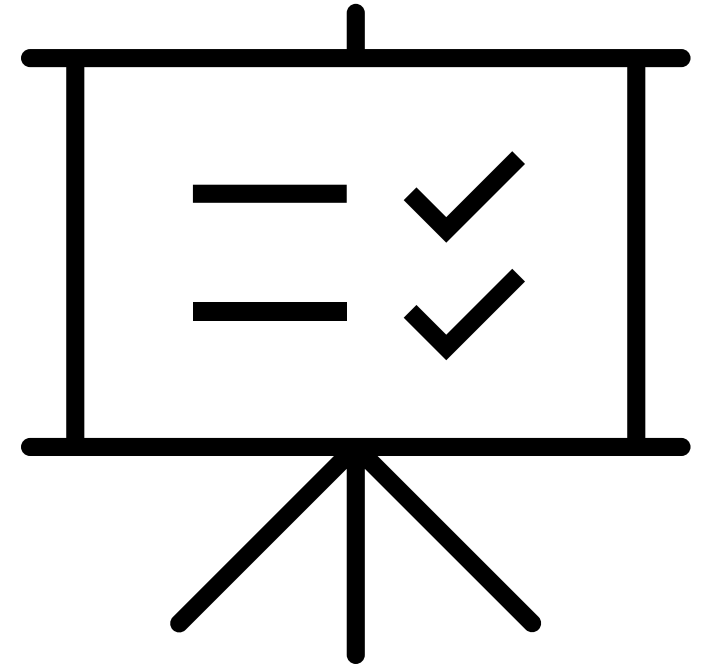
- **October 17, 2023: Introduction to Energy Management**
- **October 24, 2023: Energy Tracking and Benchmarking**
- **October 31, 2023: Developing Energy Efficiency Projects**
- **November 7, 2023: Institutionalizing Continuous Improvement**
- **November 14, 2023: Benchmarking & Energy Management Cohort**



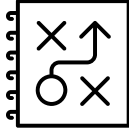
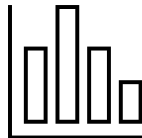
All sessions will take place from 3:00 – 5:00 PM (Eastern)



Learning Objectives

- In today's session, attendees will:
 - Understand common terms and concepts related to energy consumption and energy management in buildings
 - Identify and become familiar with guiding principles of energy management
 - Learn about key frameworks and associated resources for energy management

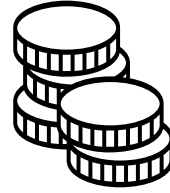


Key Terms Used in This Course

- Energy Management 
 - A **systematic** and **strategic** process through which the energy performance of a property or group of properties is tracked and analyzed, and the resulting information is used to inform decisions that will result in the **continuous improvement** of key indicators (including, but not limited to energy use and energy use intensity, energy cost, and greenhouse gas emissions).
- Energy Benchmarking 
 - The process of measuring and tracking energy data for a property or portfolio of properties over time, in order to **identify and assess changes** in performance and/or to **compare performance** against other similar properties.

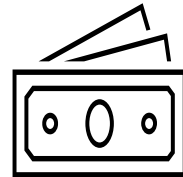
- Energy Assessment 
 - A process through which core drivers of a property's energy performance (including systems/equipment, as well as operational practices) are assessed and documented to **identify, quantify, and prioritize recommended improvements.**
- Operations and Maintenance (O&M) 
 - Ideally, a **regular and ongoing** process through which building systems are kept in good working order and smaller issues are identified and resolved **in the course of day-to-day operations**, before they become larger problems.

- Low- and No-Cost Measures



- Energy improvement activities for which **the up-front cost of implementation is low and/or the payback time is sufficiently rapid**, resulting in a more rapid and streamlined approval process.

- Capital Expenditures

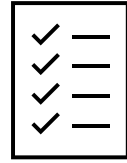


- **Larger/more comprehensive** energy improvement measures that require **advanced planning and approval** and may involve **financing** or other payment structures beyond the operating budget.

- Retrofits
 - Energy improvement activities that **build upon or improve existing systems/equipment**, in order to achieve incremental savings compared to existing system performance.
- Replacement
 - Energy improvement activities that entail the removal of existing building systems/equipment and **the installation of newer and/or more efficient equipment.**



- Project Evaluation



- A process by which reported energy savings from a given project or group of projects are **validated for accuracy and additionality** (i.e., “would these savings have occurred without the project in question?”)

Understanding the Basics of Energy Consumption

Energy Types

- Direct
 - Purchased fuels that must be combusted onsite to produce the energy required to operate equipment.
 - E.g., natural gas, fuel oil, propane, diesel.
- Indirect
 - Purchased energy that has already been converted/generated from raw fuel(s) and can be used immediately to operate building equipment.
 - E.g., grid electricity, steam/hot water/chilled water purchased from a district energy provider.



Energy Types, cont'd.

- Onsite Renewable Energy
 - Generated at the property using renewable technologies (e.g., solar PV, solar hot water, wind).
 - Reduces the amount of purchased and/or fossil energy that would otherwise be required to operate the property.
- Offsite Renewable Energy
 - Purchase of renewable energy that is not generated at the same location as it is consumed.
 - Many different "flavors" of offsite renewables.
 - Typically does not replace the need for grid electricity; important in the context of reducing reported emissions from building operation.



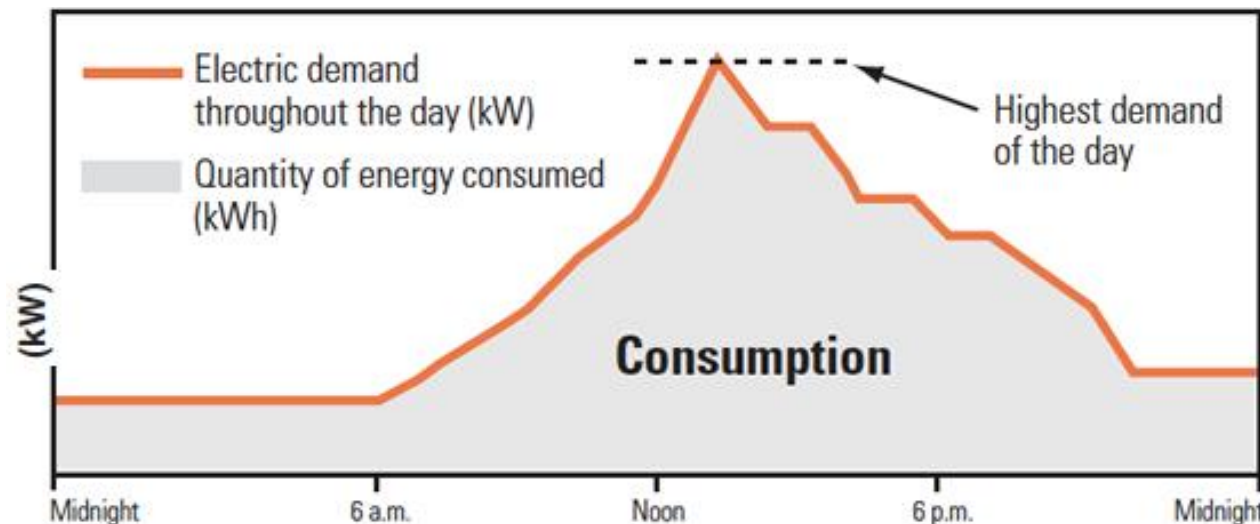
Energy Demand vs. Energy Consumption

- Demand

- Typically measured in kW (or MW at the utility scale).
- Point-in-time measurement of the rate at which your property is consuming electricity.
- Demand charge is typically set by the peak demand recorded during the billing period.

- Consumption

- Typically measured in kWh (or MWh at the utility scale).
- Measurement of the total electricity used over a given period of time (e.g., kW * hours).



Source: <https://www.we-energies.com/payment-bill/demand-charges>

- Typical utility bill elements may include, but are not limited to:
 - Consumption
 - Demand
 - Supply charges
 - Delivery/distribution charges
 - Demand charges
 - System benefits charge (or other approved surcharges to fund specific programs/initiatives)
 - Additional charges associated with opt-in programs
 - Administrative costs
 - Taxes

Billing Detail Example – National Grid

Enrollment Information

To enroll with a supplier or change to another supplier, you will need the following information about your account:

Loadzone NEMA/BOST

Acct No: [REDACTED] Cycle: P, DANA

Electric Usage History

Month	kWh	Month	kWh
Mar 21	02	Oct 21	04
Apr 21	02	Nov 21	03
May 21	02	Dec 21	140
Jun 21	04	Jan 22	246
Jul 21	03	Feb 22	300
Aug 21	02	Mar 22	249
Sep 21	03		

DETAIL OF CURRENT CHARGES

Delivery Services

Type of Service	Current Reading	-	Previous Reading	=	Difference	x	Meter Multiplier	=	Total Usage
Energy	66587	Actual	66338	Actual	249		1		249 kWh
Total Energy									249 kWh

METER NUMBER [REDACTED] NEXT SCHEDULED READ DATE ON OR ABOUT Apr 8

SERVICE PERIOD Feb 8 - Mar 8 NUMBER OF DAYS IN PERIOD 28

RATE General Service - Small C/I G-1 VOLTAGE DELIVERY LEVEL 0 - 2.2 kv

Choosing an Energy Supplier You can choose who supplies your energy. No matter which energy supplier you choose, National Grid will continue to deliver energy to you safely, efficiently and reliably. We will also continue to provide your customer service, including emergency response and storm restoration. National Grid is dedicated to creating an open energy market that lets you choose from a variety of competitive energy suppliers, who may offer different pricing options. For information on authorized energy suppliers and how to choose, please visit us online at ngrid.com/ma-energychoice

Customer Charge				10.00
Dist Chg	0.06868275	x	249 kWh	17.10
Transition Charge	-0.00098569	x	249 kWh	-0.24
Transmission Charge	0.03035571	x	249 kWh	7.56
Energy Efficiency Chg	0.00938	x	249 kWh	2.33
Renewable Energy Chg	0.0005	x	249 kWh	0.12
Distributed Solar Charge	0.0036	x	249 kWh	0.90
Electric Vehicle Charge	0.00046	x	249 kWh	0.11
Total Delivery Services				\$ 37.88

Supply Services

SUPPLIER National Grid

Basic Service Fixed	0.13113	x	249 kWh	32.65
Total Supply Services				\$ 32.65

Source: <https://www.nationalgridus.com/MA-Business/Help-Read-Your-Bill/How-to-Read-Your-Bill>

Billing Detail Example – Duquesne Light Co.

SAMPLE CORPORATION Account # 0000-000-000 Page 3 of 3

Account Detail

123 SAMPLE WAY Supplier Agreement ID: 0000000000

Meter Reading Usage Information

Meter Number	F00000000
Voltage	120/240V

Meter Readings - kWh

Present 10/18/2021 Act	49,219.3560
Prior 09/16/2021 Act	48,539.5910
Difference	679.7650
Your Meter Multiplier	1
Total kWh Used	679.7650

Demand Information

Demand Reading (on-peak)	15.4920
kW (on-peak)	15.4920
PFM	1.0000
Adjusted kW	15.4920

Total Demand	15.4920
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Current Bill Details

DLC Rate	GMH-Med Commercial Heat < 25	3
Price to Compare	\$0.0576 / kWh	
DLC Charges		\$165.16
Customer Charge		\$54.49
PA EEA Surcharge	679.7650 kWh @ \$0.001300	\$0.88
Demand Distribution	14.4920 kW @ \$6.540000	\$94.78
Smart Meter Charge Sing	MTR @ \$0.180000	\$0.18
DSIC Surcharge	2.67%	\$4.01
Pennsylvania Tax Adjustment		\$0.01
Sales Tax		\$10.81

Supply Charges - ABC ENERGY

Transmission Charge @ 0.01419	\$0.31
Commodity Charge 679.765 KWH @ 0.0658	\$44.73
State Sales Tax	\$2.87
Gross Receipts Tax	\$2.82
County Tax	\$0.48
Total	\$51.21

Total kWh Used	679.7650	Service Charges	\$216.37
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Shopping and Supplier Information

When shopping for electricity with an Electric Generation Supplier, please provide the following information:

Supplier Agreement ID: 0000000000
Rate Schedule: GMH-Med Commercial Heat < 25

The current Price to Compare is listed above in Account Detail and will change every June and December. Your actual PTC may differ based on your demand & usage kWh. For more information & supplier offers visit www.PAPowerSwitch.com and www.oca.state.pa.us.

- Generation/Supply prices and charges are set by the electric generation supplier you have chosen
- The Public Utility Commission regulates distribution prices and services
- The Federal Energy Regulatory Commission regulates transmission prices and services

Source: https://www.duquesnelight.com/docs/default-source/pdf-library/7137_dlc_bill_commercial_redesignjan62021.pdf

Consider Your Energy Goals

	Energy Savings	Cost Savings	GHG Reductions
Energy Efficiency	✓	✓	✓
Demand Response / Demand Management	(✓)	✓	(✓)
Renewable Energy	(✓)	(✓)	✓

✓ = Primary outcome

(✓) = Secondary outcome

Polling Break

- Does your District have an established energy management plan?
 - Yes
 - No
 - I don't know
- Which of the following elements are covered in your District's energy management plan (select all that apply)?
 - Energy consumption (total and/or by fuel type)
 - Energy cost (total and/or by fuel type)
 - Renewable energy (onsite generation or offsite purchases)
 - Demand management/demand response
 - Energy procurement
 - We don't have an energy management plan
 - We have a plan, but I'm not sure what elements are included

Core Principles of Energy Management

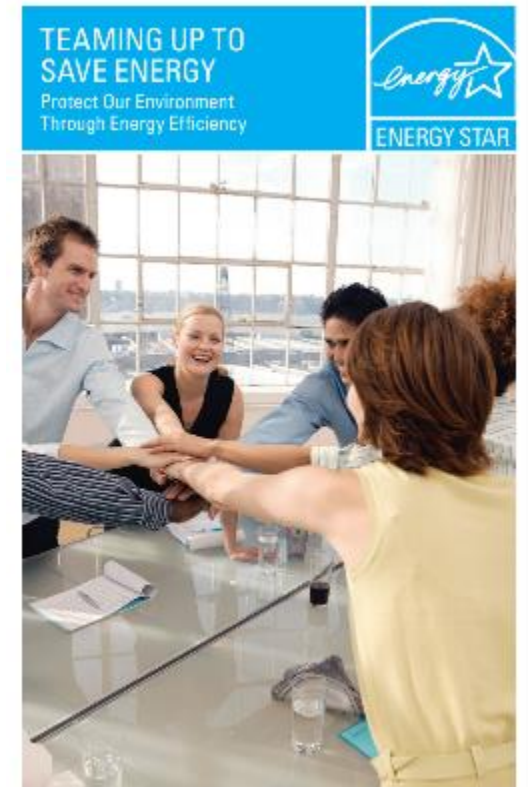
Strategic Approach

- Instead of just...
 - Paying the bills as they come due
 - Focusing on annual budget cycles
 - Viewing facility operations as a cost center
- Energy management emphasizes...
 - Proactive planning
 - Multi-year point of view
 - Leveraging building-level improvements into organizational value (both financial and reputational)



Organizational Engagement

- Top-level commitment (e.g., superintendent, principals) sets the tone and helps secure buy-in from others.
- A broad and inclusive energy team should go beyond the facilities/engineering department to include representatives from the groups such as:
 - Teachers
 - Students
 - Janitorial staff
 - Food service staff
 - Finance department
 - Communications department



[ENERGY STAR - Teaming Up to Save Energy](#)

Whole-Building vs. System-Level Orientation

- Building systems do not operate in isolation; changes to one system may impact others.
- Whole-building focus allows the impact of O&M and behavioral measures to be captured, in addition to equipment-level improvements.
- Bundling measures at the whole-building level may help to improve project financials (measures with shorter paybacks can offset measures with longer paybacks)



- There will almost certainly be more projects identified than can be implemented in any given time period!
- Looking across a portfolio of properties enables prioritization and sequencing of projects, as well as further bundling opportunities to improve project financials.
- Not just a matter of identifying under-performing properties, but also an opportunity to identify superior performers and glean best practices that can be shared across the district.
- Opportunity for friendly competition among schools to drive improvements.



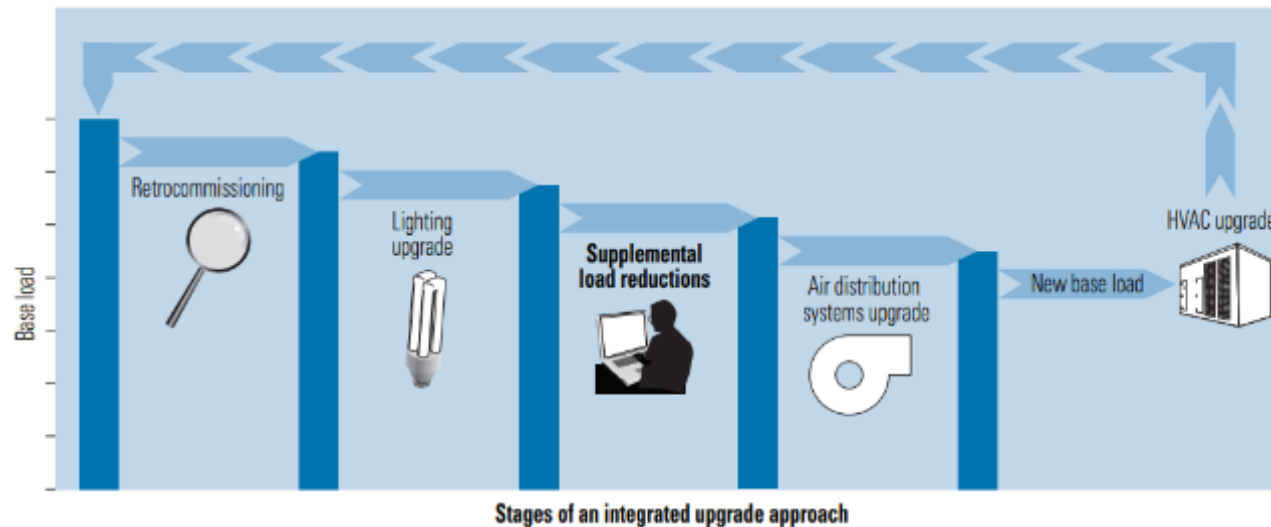
Importance of O&M

- Building design intent does not automatically result in building performance; sound operational practices required to achieve a building's potential.
- Last year's superior performance can become next year's average performance if insufficient attention is paid to O&M.
- “Quick wins” from no- and low-cost operational improvements can instill confidence in energy efficiency among decision makers.



Sequencing Upgrades

- Start small and build up.
- Emphasize the identification and elimination of unnecessary energy use before upgrading systems.
 - Especially important for key building systems that needs to be sized to the building load (e.g., boilers/furnaces, chillers, air distribution).
 - Critical if onsite renewable energy is part of your vision.

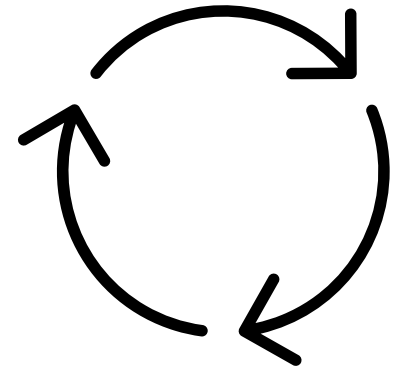


Source:

https://www.energystar.gov/sites/default/files/buildings/tools/EPA_BUM_Full.pdf

Emphasis on Continuous Improvement

- Individual projects may have a finish line, but energy management should be ongoing.
- Emphasizing improvement over absolute performance ensures that everyone can play a role in your success – from the oldest school in the district to the newest.
 - Not every building will be in a position to pursue or receive green building certification (e.g., ENERGY STAR, LEED), but all buildings can improve upon their prior year's performance.
 - Energy improvement – regardless of the baseline – means cost savings and emissions reductions.



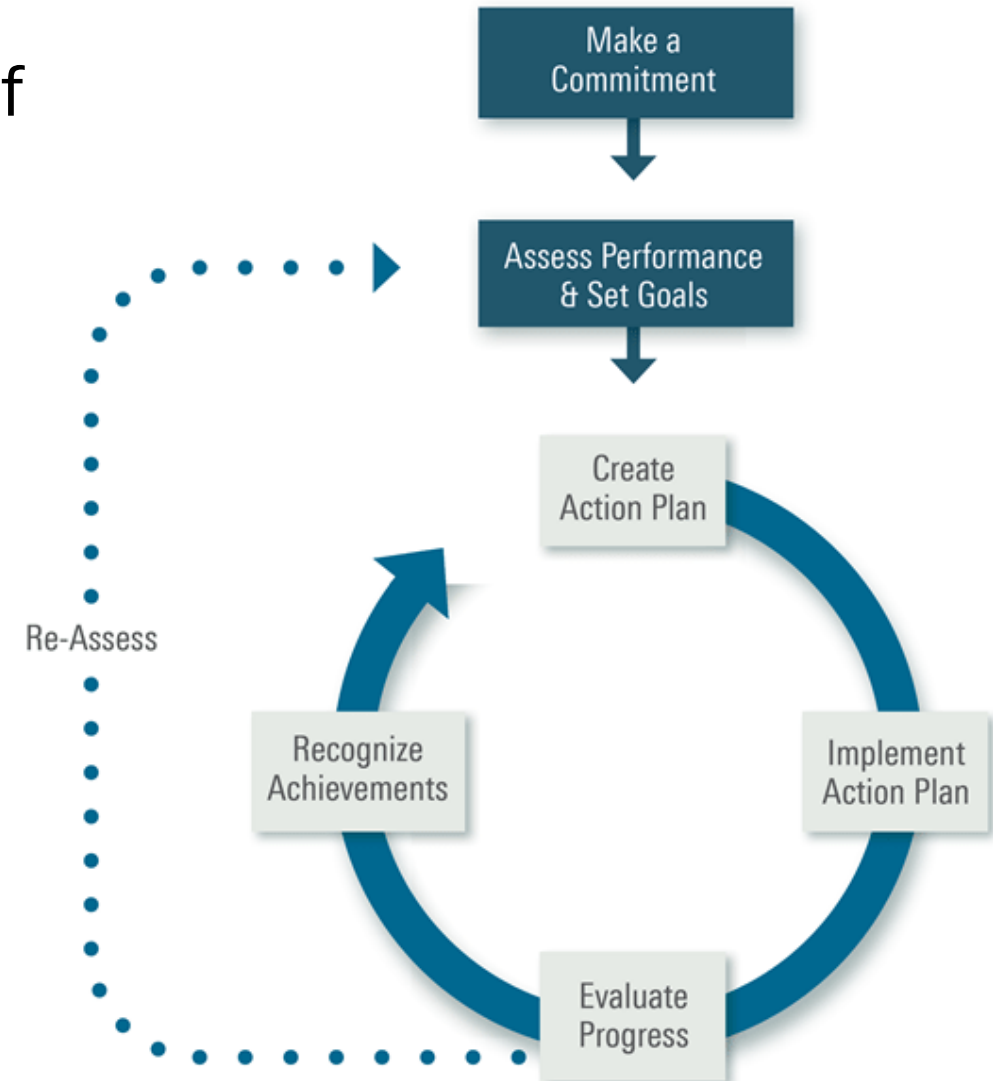
- Which of these principles of energy management were not already familiar to you (select all that apply):
 - Strategic approach
 - Organizational engagement
 - Whole-building focus
 - Portfolio-wide approach
 - Importance of O&M
 - Sequencing upgrades
 - Importance of continuous improvement

Frameworks for Energy Management

ENERGY STAR® Guidelines for Energy Management

Proven strategy based on actual practices of champion ENERGY STAR partners.

- Step 1: Make Commitment
- Step 2: Assess Performance
- Step 3: Set Goals
- Step 4: Create Action Plan
- Step 5: Implement Action Plan
- Step 6: Evaluate Progress
- Step 7: Recognize Achievements



Source: https://www.energystar.gov/buildings/save_energy_commercial_buildings/comprehensive_energy_management

ENERGY STAR® Guidelines for Energy Management, cont'd.

1. Make Commitment

- Appoint an energy director
- Establish an energy team
- Institute an energy policy

2. Assess Performance

- Gather and track data
- Establish baselines
- Benchmark
- Analyze data
- Conduct technical assessments and audits

3. Set Goals

- Determine scope
- Estimate potential for improvement
- Establish goals

4. Create Action Plan

- Define technical steps and targets
- Determine roles and resources

ENERGY STAR® Guidelines for Energy Management, cont'd.

6. Implement Action Plan

- Create a communication plan
- Raise awareness
- Build capacity
- Motivate
- Track and monitor

7. Evaluate Progress

- Measure results
- Review action plan

8. Recognize Achievements

- Provide internal recognition
- Receive external recognition

Assess Your Energy Program Against the Guidelines

ENERGY STAR® Energy Management Assessment Matrix				
	Little or no evidence	Some elements	Fully implemented	Next Steps
Make Commitment to Continuous Improvement				
Energy Director	No central or organizational resource Decentralized management	Central or organizational resource not empowered	Empowered central or organizational leader with senior management support	-
Energy Team	No company energy network	Informal organization	Active cross-functional team guiding energy program	-
Energy Policy	No formal policy	Referenced in environmental or other policies	Formal stand-alone EE policy endorsed by senior mgmt.	-
Assess Performance and Opportunities				
Gather and Track Data	Little metering/no tracking	Local or partial metering/tracking/ reporting	All facilities report for central consolidation/analysis	-
Normalize	Not addressed	Some unit measures or weather adjustments	All meaningful adjustments for organizational analysis	-
Establish baselines	No baselines	Various facility-established	Standardized organizational base year and metric established	-
Benchmark	Not addressed or only same site historical comparisons	Some internal comparisons among company sites	Regular internal & external comparisons & analyses	-
Analyze	Not addressed	Some attempt to identify and correct spikes	Profiles identifying trends, peaks, valleys & causes	-
Technical assessments and audits	Not conducted	Internal facility reviews	Reviews by multi-functional team of professionals	-
Set Performance Goals				
Determine scope	No quantifiable goals	Short term facility goals or nominal corporate goals	Short & long term facility and corporate goals	-
Estimate potential for improvement	No process in place	Specific projects based on limited vendor projections	Facility & organization defined based on experience	-

Establish goals	Not addressed	Loosely defined or sporadically applied	Specific & quantifiable at various organizational levels	-
Create Action Plan				
Define technical steps and targets	Not addressed	Facility-level consideration as opportunities occur	Detailed multi-level targets with timelines to close gaps	-
Determine roles and resources	Not addressed or done on ad hoc basis	Informal interested person competes for funding	Internal/external roles defined & funding identified	-
Implement Action Plan				
Create a communication plan	Not addressed	Tools targeted for some groups used occasionally	All stakeholders are addressed on regular basis	-
Raise awareness	No promotion of energy efficiency	Periodic references to energy initiatives	All levels of organization support energy goals	-
Build capacity	Indirect training only	Some training for key individuals	Broad training/certification in technology & best practices	-
Motivate	No or occasional contact with energy users and staff	Threats for non-performance or periodic reminders	Recognition, financial & performance incentives	-
Track and monitor	No system for monitoring progress	Annual reviews by facilities	Regular reviews & updates of centralized system	-
Evaluate Progress				
Measure results	No reviews	Historical comparisons	Compare usage & costs vs. goals, plans, competitors	-
Review action plan	No reviews	Informal check on progress	Revise plan based on results, feedback & business factors	-
Recognize Achievements				
Provide internal recognition	Not addressed	Identify successful projects	Acknowledge contributions of individuals, teams, facilities	-
Get external recognition	Not sought	Incidental or vendor acknowledgement	Government/third party highlighting achievements	-

<https://www.energystar.gov/buildings/tools-and-resources/energy-program-assessment-matrix-excel>

Assess Your Facility Using the Guidelines Framework

ENERGY STAR® Facility Energy Management Assessment Matrix				
Company Name:		Assessment Date:		
	Little or no evidence	Some elements/degree	Fully implemented	Next Steps
Commit to Continuous Improvement				
Site Energy Leader	None assigned.	Assigned responsibilities but not empowered. 20-40% of time is devoted to energy.	Recognized and empowered leader having site manager and senior energy manager support.	
Site Energy Champion	None identified.	Senior manager implicitly supports the energy program.	Senior manager actively supports the energy program and promotes energy efficiency in all aspects of site operations.	
Site Energy Team	No site energy team.	Informal organization with sporadic activity.	Active cross-functional team guiding site energy program.	
Energy Policy	No energy policy or awareness of organizational policy.	Organizational policy in place. Little awareness by site energy team and limited application of policy.	Organizational policy supported at site level. All employees aware of goals and responsibilities.	
Site Energy Plan	No written plan.	Informal plan not widely known.	Written formal plan endorsed, distributed, and verified.	
Accountability	No energy budgeting and accountability.	Estimates used for allocating energy budgets.	Key users are metered separately. Each entity has total accountability for their energy use.	
Participation Levels	No reporting of energy performance data internally or involvement in external organizations.	Some participation, sharing, mentoring, and professional memberships. Annual reporting of performance.	Participates in energy network/organizations. Shares best practices/mentors other sites. Reports usage quarterly.	
Assess Performance and Opportunities				
Track & Analyze Data	Limited metering or tracking. No demand analysis or billing evaluation.	Some metering, tracking, analyzing, and reporting. Energy bills verified for accuracy.	Key loads metered, tracked, analyzed, and reported. Facility peak demand analyzed. Adjusts for real-time demand.	

Documentation	No manuals, plans, designs, drawings, specs, etc. for building and equipment available.	Some documentation and records available. Some review of equipment commissioning specs conducted.	Critical building and equipment documentation available and used for load surveys/recommissioning/efficiency goals.
Benchmarking	Energy performance of systems and facilities not benchmarked.	Limited comparisons of specific functions, or only same-site historical comparators.	Key systems/sites benchmarked using comparison tools like Portfolio Manager/Energy Performance Indicators.
Technical Assessments	No formal or external reviews.	Limited review by vendors, location, or organizational and corporate energy managers.	Extensive regular reviews by multi-functional team of internal and external professionals. Full assessment every 5 years.
Best Practices	None identified.	Ad hoc or infrequent monitoring of trade journals, internal databases, and other facilities' best practices.	Regular monitoring of trade journals, internal databases, and other facilities. Best practices shared and implemented.
Set Performance Goals			
Goals/Potential	Energy reduction goals not established.	Loosely defined. Little awareness of energy goals by others outside of site energy team.	Potential defined by experience or assessments. Goals roll up to utility/organization and status posted prominently.
Career Development	No career development. No opportunities available.	Exposure to other energy programs. Some temporary or project assignments available elsewhere.	Energy professionals have established career paths that are reviewed annually. Opportunities for growth encouraged.
Energy Team Incentives	No ties between energy efficiency improvement and compensation.	Spot awards or lunches for employees on a project.	Accountability tied to performance reviews, compensation, and personal and plant bonuses.
Create Action Plan			
Improvement Planning	No upgrade plan.	Upgrades implemented sporadically. Some compliance with organizational goals and standards.	Upgrade plans established; reflect assessments. Full compliance with organizational EE design guidelines and goals.
Roles and Resources	Not addressed, or addressed on ad hoc basis only.	Informal interested person competes for funding. Little support from organizational program.	Internal/external roles defined and funding identified. Organizational or corporate program support secured.
Site Planning Integration	Impact on energy from changes not considered.	Decisions impacting energy considered on first-cost basis only.	Projects/contracts include energy analysis. Energy projects evaluated with other investments. Lifecycle costing applied.

Implement Action Plan				
Communication Plan	Site plan not developed.	Periodic communications for projects. Some reporting of energy use information.	All stakeholders are addressed on regular basis.	
Energy Awareness	None conducted.	Occasional energy efficiency awareness campaigns. Some communication of energy costs.	Planned outreach and communications. Support organizational initiatives. Employees aware of site energy costs.	
Building Staff Capacity	No training offered.	Some vendor training for key individuals and operators.	Broad training/certification in technology and best practices. Networking opportunities actively pursued.	
Contract Management	Contracts are renewed automatically without review.	Occasional review of supplier contracts.	Energy-efficient procurement policy in place. Vendors for replacements on standby. Regular review of suppliers.	
Incentives and Rebates	Not researched or pursued.	Occasional communication with utility representatives. Limited knowledge of incentive programs.	Researches rebates and incentives offered regionally and nationally. Communicates often with utility representatives.	
Evaluate Progress				
Measuring Results	No reviews.	Historical comparisons. Some reporting of results.	Compare usage & costs vs. goals, plans, other sites. Results reported to site and organizational or corporate management.	
Reviewing Action Plan	No reviews.	Informal check on progress.	Revise plan based on results, feedback and business factors. Best practices shared with other sites / organization or corporate program.	
Recognize Achievements				
Site Recognition	Not addressed.	Occasional recognition of projects and people.	Recognition system in place. Awards for projects pursued by operators.	
Organizational Recognition	Not sought.	Occasionally when prompted by senior management.	Senior management acknowledges site successes.	
External Recognition	Not sought.	Occasional trade magazine and vendor recognition.	Government and third-party recognition highlighting achievements sought. ENERGY STAR awarded annually.	

<https://www.energystar.gov/buildings/tools-and-resources/facility-energy-assessment-matrix-excel>

DOE's 50001 Ready Program

“A self-guided approach for facilities to establish an energy management system and self-attest to the structure of ISO 50001, a voluntary global standard for energy management systems in industrial, commercial, and institutional facilities.”

DOE offers recognition for organizations that:

- Complete all tasks in the [50001 Ready Navigator](#)
- Self-attest to the completion of these tasks
- Measure and improve energy performance over time

50001 Ready Navigator

- Based on the structure of ISO 50001
- 25 required tasks, each with supporting guidance:
 - 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)
- Full list of tasks available at <https://navigator.lbl.gov/task-index>.
- Access guidance documents and tracking worksheets for offline use via the [50001 Ready Playbook](#)

Example View of the 50001 Ready Navigator Interface



Navigator

LANGUAGE

English

Log In

Contact

FAQs

Explore

Navigate Project: [Project Dashboard](#) [Leadership](#) [Get Ready Recognized](#)

Leadership

[Back to Project Dashboard](#)

Task Status (click to jump): [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](#)

Task:

Energy Policy

[← Previous](#)

[4](#) [5](#) [6](#)

[NEXT →](#)

Task 5: We have an energy policy statement, which has been approved by top management and communicated across the organization.

[Log in to track progress](#)

Get Help

[50001 Ready Help Desk](#)

Detailed Guidance: Energy Policy

[Getting it Done](#)

Task Overview

[Full Description](#)

[Decarbonization](#)

[Optional Guidance](#)

[Notes](#)

[Playbook](#)

[Assignments](#)

The energy policy is top management's statement of its intentions with respect to your organization's energy performance. The commitments stated in the policy set the direction for energy management activities and provide the framework for using objectives and energy targets to achieve energy performance improvements. The energy policy should be documented and communicated to personnel across all levels of the organization and be available to interested parties.

This guidance is relevant to sections 5.1 b) and 5.2 in the ISO 50001:2018 standard.

Example View of the 50001 Ready Navigator Interface

The screenshot displays the 50001 Ready Navigator interface. At the top left is the 50001 Ready logo with the U.S. Department of Energy text. The main header is blue with the word "Navigator" and a language dropdown set to "English". Navigation links for "Log In", "Contact", "FAQs", and "Explore" are on the right. Below the header, a "Navigate Project:" section contains buttons for "Project Dashboard", "Planning" (which is active), and "Get Ready Recognized".

The "Planning" section features a breadcrumb trail of task numbers from 1 to 25, with task 13 highlighted. A "Back to Project Dashboard" link is also present. Below the breadcrumb is a large blue bar with a "Task:" label and a dropdown menu currently showing "Action Plans for Continual Improvement". Below this bar is a navigation bar with "← Previous" and "Next Section →" arrows, and a series of task numbers from 7 to 13, with 13 being the active task.

The main content area for Task 13 includes the heading "Task 13: We develop action plans and implement improvement projects to achieve our objectives and energy targets." and a "Log in to track progress" button. To the right is a "Get Help" button with a sub-button for "50001 Ready Help Desk".

Below the task description is a section titled "Detailed Guidance: Action Plans for Continual Improvement" with a series of tabs: "Getting It Done" (active), "Task Overview", "Full Description", "Decarbonization", "Optional Guidance", "Notes" (with a notification icon), "Playbook", and "Assignments".

The detailed guidance contains a list of four steps:

1. Use your prioritized opportunities from Task 10 [Improvement Opportunities](#) to select projects for implementation.
2. Apply any applicable criteria set by your organization to justify and gain approval of the project.
3. Develop action plans for meeting your organization's objectives and energy targets identified in Task 12 [Objectives and Targets](#).
4. Communicate expectations to relevant positions and review action plan progress.

Examples of School Districts Using the 50001 Ready Framework

- [Boise, ID](#)
- [Jerome, ID](#)
- [Nampa, ID](#)
- [Wendell, ID](#)

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

PROJECT SHOWCASE
JANUARY 2023

Boise School District, ID – 50001 READY

BACKGROUND

The Boise School District covers 1,072 square miles and serves more than 25,000 students. This high-achieving District employs about 2,500 people, including 1,900 certified staff members. As evidence of the District's long-standing interest in energy efficiency, it set up a Resource Conservation Office back in 1997 to reduce energy consumption 10% by 2015—later raising that goal to 15%. The District's webpage features energy best practices to get teachers, students, and members of the community involved in the effort. Over the years, the system invested in several energy projects to take advantage of discounts offered by Idaho Power. Like most school districts, Boise had little in-house expertise in energy management and no formal structure for analyzing or improving energy use.

SOLUTIONS

In 2017, the Boise School District set up a Sustainability Committee and encouraged the formation of a student-led Green Team at each school. In the same year, the District joined a cohort of Idaho school districts pursuing Continuous Energy Improvement. The Strategic Energy Group (SEG), under the auspices of Idaho Power, coached the cohort on how to monitor energy use and better manage energy use within the schools.

"We're proud of our 50001 Ready status and the energy cost savings we've achieved. But most of all, we're proud of our students, who now take the initiative in finding and researching even more opportunities to save energy."

— Christopher Taylor
Boise School District

In 2019, SEG introduced members of the cohort to the 50001 Ready framework for continuous improvement and the potential for recognition by the U.S. Department of Energy (DOE). Boise High School was the first school in the District to achieve 50001 Ready in April 2019 and was able to re-attest in October 2020. By January 2021, eleven more buildings had achieved 50001 Ready,



Students in class outdoors on Power Down Day.
Photo credit: Boise School District.

including six junior high schools, two high schools, the District Office, and a Tech Center. Along the way, the District Sustainability Committee stimulated broad student and community involvement through the Green Teams at each high school and junior high. The students have taken the initiative to research and propose promising energy projects—impressing everyone.

Implementing a 50001 Ready Energy Management System

► **Real energy savings:** Between January 2017 and May 2021, the twelve buildings participating in Boise School District's Continuous Energy Improvement Program reduced their energy usage by almost 11.73% and saved approximately \$432,039 off of their power bill since January 2017 based on modeled saving with an adjusted Net of Capital savings of \$285,880. Participating in 50001 Ready allowed them to plan each step in their efficiency improvement process and see the energy savings firsthand.

Learn about the 50001 Ready Program here:
<https://www.energy.gov/50001ready> and explore the 50001 Ready Navigator tool: <https://navigator.ibe.gov/>

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- Is your District using any of the following frameworks as a foundation for energy management efforts?
 - ENERGY STAR Guidelines
 - 50001 Ready Navigator
 - Other (please note)

Other Key Resources

Better Buildings Solution Center: K-12 Schools



SEARCH SOLUTIONS



SOLUTIONS

PROGRAMS & PARTNERS

EVENTS & WEBINARS

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EXPLORE BY TOPIC

BROWSE SOLUTION TYPES

FUNDING

DECARBONIZATION

RESILIENCE

RENEWABLES

CHP

ROAD SHOW

K-12 SCHOOL DISTRICTS



K-12 school districts spend nearly \$8 billion annually on energy costs, the second largest expense after teacher salaries. Aging facilities combined with limited school budgets result in deferred maintenance of facilities with an estimated \$270 billion needed for infrastructure repairs.

<https://betterbuildingsolutioncenter.energy.gov/sectors/k-12-school-districts>

FEATURED SOLUTIONS



[Resources for Rural K-12 School Energy Managers and Educators](#) Guidance

This resource helps states, local school administrators, school boards, and facilities personnel supporting rural school districts make prudent decisions around the use of funds for energy efficiency improvements as a part of their master facilities management plan.

[View Related Solutions](#)



[K-12 Solutions for Building Energy Excellence](#) Solution Roundup

This collection of Solutions-at-a-Glance from the Better Buildings K-12 partners provides various unique approaches to addressing energy efficiency issues in K-12 public schools.

[View Related Solutions](#)



[K-12 Lighting Toolkit](#) Toolkit

This toolkit covers a wide range of guidance, case studies, specifications, and more related to lighting technologies in K-12 schools.

[View Related Solutions](#)



[A Guide to Zero Energy and Zero Energy Ready K-12 Schools](#) Guidance

Developed as part of DOE's Zero Energy Schools Accelerator (ZESA), this guide outlines 8 steps to creating a Zero Energy school.

[View Related Solutions](#)



[Los Angeles Unified School District HEROES for Zero Energy Efficiency Framework](#) Implementation Model

Los Angeles Unified School District (LAUSD) lacked a comprehensive framework for tracking and measuring energy consumption and engaging staff, students, and the community. The District developed a suite of programs focused on health and wellness, education, recognizing partnerships, optimizing performance, improving efficiency, and sharing best practices to help achieve these goals.

[View Related Solutions](#)



[Aurora Public Schools: Innovations for Incentivizing Energy Conservation](#) Implementation Model

Aurora Public Schools created an incentive-based energy conservation program to improve energy efficiency and student engagement district-wide, and has achieved a 12% energy reduction as of 2017 from a 2013 baseline.

[View Related Solutions](#)

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<https://efficienthealthyschools.lbl.gov/>

Questions?

We look forward to working with you!

