

**How to use this document:** This document provides an example of a strategic energy management plan. It is a copy of the sample plan used in the Northwest Energy Efficiency Alliance SEM Hub tutorial “How to Create an Energy Plan.” You can use or adapt this example for your own facility or workplace to support your own organization’s energy management goals.

# XYZ Company

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## Strategic Energy Management (SEM) Plan

MMMM DD, YYYY



RESOURCES FOR TODAY'S  
ENERGY MANAGEMENT

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# | Energy Policy

## Mission Statement

The purpose of our energy management initiative is to promote and sustain the efficient use of energy in keeping with our core values of stewardship and excellence. In support of our mission of good health for our people, our communities, and our world, we will ensure all aspects of our business operations efficiently use all resources including electricity, natural gas, and water. Using energy efficiently throughout our facilities will reduce adverse impacts on the environment, improve our financial situation by reducing operating costs, direct more resources towards providing vital customer services, and inspire others within our communities to take similar actions. Our energy management initiative is a long-term effort of strategic importance to our company, in which we are dedicated to continually improving our energy-related business practices and obtaining the benefits from doing so.

## Guiding Principles

Active management of energy-related costs and associated risks provides a significant economic return to the organization and supports key aspects of our overall mission. To achieve these benefits, we are committed to the following principles:

- We will take a strategic approach to energy management, integrating energy management considerations into our everyday business decision-making and practices.
- We will set specific energy reduction goals (targets) and employ a deliberate and robust process to identify and assess opportunities for improvement and apply best practices.
- We will develop and implement a comprehensive, multi-year energy management plan to achieve our energy management goals and purposes.
- We will empower employees as partners in achieving energy management goals through comprehensive communication, education, and engagement activities.

- We will apply consistent methods of financial analysis that consider total cost of facility ownership and operation so that our energy management investments will yield solid economic returns that meet or exceed our company’s return on investment criteria.
- We will leverage national and local resources to assist us in achieving our energy management goals, including use of available business, technical, and financial resources.
- We will monitor, track, and report our progress based on specific key performance indicators, communicate the results internally and to external stakeholders, and use what we learn to continuously improve our efforts and update our plans.

## Energy Management Goals

As an initial goal, we will reduce our overall electricity usage by 30 percent and natural gas usage by 35 percent within a three-year period beginning in FY1. This will result in annual operating cost savings of \$100,000 and eliminate the release of 371.3 metric tons of carbon dioxide equivalent (MtCO<sub>2</sub>e) of greenhouse gases per year. Specific facility or department goals and performance standards, as well as distinct goals for electricity and natural gas reduction, will be established as part of our ongoing evaluation and assessment process to be included in updates to this plan. We will achieve our goals by meeting the following energy intensity reduction targets normalized for weather and the related carbon reduction metrics:

<b>FY1 target reduction</b>	electricity – 5%; natural gas – 10%; 68.9 MtCO <sub>2</sub> e
<b>FY2 incremental target reduction</b>	electricity – 15%; natural gas – 20%; 189.9 MtCO <sub>2</sub> e
<b>FY3 incremental target reduction</b>	electricity – 10%; natural gas – 5%; 112.5 MtCO <sub>2</sub> e
<hr/>	
<b>Total plan goal</b>	<b>electricity – 30%; natural gas – 35%; 371.3 MtCO<sub>2</sub>e</b>

## Energy Management Objectives

### Objective #1

Gain and maintain the organizational commitment needed to successfully apply best practices in managing our energy consumption to reach our energy reduction goals.

### Objective #2

Identify and apply best practices in facility operations to minimize energy-related operating costs and enhance the reliability and longevity of energy systems, equipment, and infrastructure.

### Objective #3

Identify and invest in financially attractive facility upgrades that reduce the company's costs of asset ownership and contribute to reaching energy reduction goals.

### Objective #4

Establish and use purchasing and procurement standards that minimize company life cycle costs and total cost of ownership.

### Objective #5

Engage and empower employees and building occupants as partners in organizational efforts to effectively manage energy use and reduce consumption.

### Objective #6

Track and report on company performance to ensure organizational accountability and continuous improvement in company efforts to effectively manage energy use and reduce consumption.

# | FY1 Implementation Plan

**Objective #1. Gain and maintain the organizational commitment needed to successfully apply best practices in managing our energy consumption to reach our energy reduction goals.**

ACTIONS	STEPS	TIMEFRAME
<b>Establish executive sponsor, energy champion, and energy team</b>	<ul style="list-style-type: none"> <li>• Identify, approach, and gain executive sponsor agreement</li> <li>• Designate energy champion</li> <li>• Create cross-functional energy team</li> </ul>	Q1 FY1
<b>Adopt energy management policy</b>	<ul style="list-style-type: none"> <li>• Draft energy management policy containing essential elements</li> <li>• Vet draft policy with executive sponsor and other stakeholders (organizational process)</li> <li>• Adopt and communicate policy</li> </ul>	Q2 FY1
<b>Secure organizational approval of strategic energy management (SEM) plan and facility plans</b>	<ul style="list-style-type: none"> <li>• Conduct organizational and technical assessments</li> <li>• Develop facility-specific implementation plans with energy team</li> <li>• Secure executive sponsor support/organizational approval</li> <li>• Communicate plan elements to key organizational stakeholders and decision-makers</li> </ul>	Q2 FY1
<b>Establish SEM roles and responsibilities</b>	<ul style="list-style-type: none"> <li>• Communicate roles and responsibilities</li> <li>• Allocate organizational resources (staff time, funding, etc.) for follow-through</li> <li>• Establish mechanisms to track progress and hold staff accountable</li> </ul>	Q2 FY1

ACTIONS	STEPS	TIMEFRAME
<b>Review and recognize SEM progress and results</b>	<ul style="list-style-type: none"> <li>• Monitor, track, and report SEM progress</li> <li>• Communicate progress and achievements organization-wide and publicly</li> <li>• Recognize energy team and other key contributors</li> <li>• Review, revise, and update SEM plan</li> </ul>	Q4 FY1

**Objective #2. Identify and apply best practices in facility operations to minimize energy-related operating costs and enhance the reliability and longevity of building systems, equipment, and infrastructure.**

ACTIONS	STEPS	TIMEFRAME
<b>Benchmark facilities in energy management scope and track changes over time</b>	<ul style="list-style-type: none"> <li>• Gather and store energy cost/consumption and related production data</li> <li>• Populate and complete benchmarking</li> <li>• Review results and make adjustments</li> </ul>	Q1 FY1
<b>Identify opportunities to “tune” buildings, systems, and equipment</b>	<ul style="list-style-type: none"> <li>• Conduct energy systems opportunity assessment training for maintenance manager and supervisors</li> <li>• Review current operations and identify low- or no-cost actions to improve energy performance, increase throughput, or reduce waste</li> <li>• Create list of high-priority energy saving actions for follow through</li> </ul>	Q2 FY1
<b>Improve routine operations and maintenance (O&amp;M) practices</b>	<ul style="list-style-type: none"> <li>• Examine current O&amp;M practices for high-priority energy savings actions to identify opportunities to incorporate best practices</li> <li>• Identify/develop support tools (procedures, protocols, checklists, recordkeeping, etc.)</li> <li>• Integrate into preventive maintenance and daily routines</li> </ul>	Q4 FY1

**Objective #3. Identify and invest in financially attractive facility upgrades that reduce costs of asset ownership and contribute to reaching energy reduction goals.**

ACTIONS	STEPS	TIMEFRAME
<p><b>Systematically examine potential energy systems or equipment upgrade opportunities</b></p>	<ul style="list-style-type: none"> <li>• Conduct energy audits/analyses beginning with facilities that have low benchmark scores</li> <li>• Create list of potential capital projects for follow-through</li> <li>• Maintain/regularly update opportunity list</li> </ul>	<p>Q3 FY1</p>

**Objective #4. Establish and use purchasing and procurement standards that minimize company life cycle costs and total cost of ownership.**

*To be developed as part of our ongoing energy management efforts. For small-cost and regular purchases (e.g., copiers, computers, monitors, appliances), the procurement team will develop standards for purchases that factor in energy considerations. This may or may not include life cycle cost analyses but will include energy use, carbon emissions, and any appropriate maintenance costs.*



**Objective #5. Engage and empower employees and building occupants as partners in organizational efforts to effectively manage energy use and reduce consumption.**

ACTIONS	STEPS	TIMEFRAME
<p><b>Develop and initiate communications plan (i.e., energy awareness campaign)</b></p>	<ul style="list-style-type: none"> <li>• Profile primary and secondary audiences and develop high-level messages</li> <li>• Identify communication channels for each audience and develop or obtain materials</li> <li>• Initiate communications using appropriate channels and materials (access partnerships)</li> <li>• Evaluate effectiveness and adjust</li> </ul>	<p>Q3 FY1</p>
<p><b>Develop and initiate employee/occupant education</b></p>	<ul style="list-style-type: none"> <li>• Identify educational opportunities for target audiences (e.g., orientations, training)</li> <li>• Select energy management topics based on audience and format</li> <li>• Develop appropriate content</li> <li>• Initiate and deliver employee/occupant education</li> </ul>	<p>Q3 FY1</p>
<p><b>Identify, develop, and initiate engagement activities</b></p>	<ul style="list-style-type: none"> <li>• Identify potential engagement activities</li> <li>• Scope high-priority engagement activities and gain organizational approval</li> <li>• Develop and initiate engagement activities (access partnerships)</li> <li>• Evaluate effectiveness and adjust</li> </ul>	<p>Q4 FY1</p>
<p><b>Reinforce good energy management habits and routines</b></p>	<ul style="list-style-type: none"> <li>• Identify reinforcement activities (e.g., status, reminders, interaction, rewards)</li> <li>• Initiate reinforcement activities</li> <li>• Evaluate effectiveness and adjust</li> </ul>	<p>Q4 FY1</p>

**Objective #6. Track and report on company performance to ensure organizational accountability and continuous improvement in company efforts to effectively manage energy use and reduce consumption.**

ACTIONS	STEPS	TIMEFRAME
<p><b>Develop appropriate metrics for tracking and reporting operating performance and overall initiative progress</b></p>	<ul style="list-style-type: none"> <li>• Identify energy performance indicators for tracking and reporting operating performance (e.g., weather normalized kWh or therms per square feet)</li> <li>• Identify metrics for tracking and reporting progress to executive sponsor (e.g., total weather normalized kWh and therms per square feet, cost savings)</li> </ul>	<p>Q2 FY1</p>
<p><b>Put in place the necessary tools and protocols for tracking and analyzing energy use and cost savings</b></p>	<ul style="list-style-type: none"> <li>• Establish baseline energy consumption</li> <li>• Select tool(s) for monitoring and tracking facility energy use (at least monthly)</li> <li>• Consider interval data and any sub-metering needs</li> <li>• Set up and test tool</li> </ul>	<p>Q3 FY1</p>
<p><b>Identify responsibilities for tracking facility-specific metrics, responding to underperformance, and frequency of reporting</b></p>	<ul style="list-style-type: none"> <li>• Assign responsibility for the overall facility performance monitoring and tracking effort</li> <li>• Construct an operations-level dashboard used to inform facilities management</li> <li>• Report to operations management using the dashboard on a regular basis (e.g., monthly)</li> </ul>	<p>Q3 FY1</p>
<p><b>Report on a regular basis using appropriate metrics</b></p>	<ul style="list-style-type: none"> <li>• Construct executive-level dashboard to inform top management on initiative progress</li> <li>• Review dashboard with top management and adjust per their feedback</li> <li>• Report to executive sponsor using the dashboard on a regular basis (e.g., quarterly)</li> </ul>	<p>Q4 FY1</p>

# Tools

## Facility Energy Savings Opportunity Plan

To track and manage energy savings actions, we will use the activities and figures in the following table. They will include employee and building occupant behavior, operational changes, and capital projects for investment. The table includes estimated savings, estimated costs, and a timeline for implementation and tracking estimated performance to annual targets and overall goals.

Facility Plan														
257,259 SqFt				Savings Targets										
2,714,800 Baseline kWh				kWh		therms								
1,076,339 Baseline Therms				Year 1	5%	10%								
454.4 Baseline kBtu/SqFt				Year 2	15%	20%								
297.2 Goal kBtu/SqFt				Year 3	10%	5%								
377.6 Current Plan ending kBtu/SqFt				Total Reduction	30%	35%								
				Status		Estimated Annual Savings					Financial			
				Key Internal Resources	Expected Completion Date	Electrical (kWh)	Nat Gas (therms)	Energy (\$)	Other (\$)	Total (Energy + Other)	Total Project Cost	Incentive	S-PB (yrs)	
FY1 ----- Plan kBtu/SqFt = 430.8						515,812	43,054	\$64,092	\$3,250	\$67,342	\$17,500	\$18,927	0.0	
<b>Behavioral (Estimated 4% Electricity / 0% Natural Gas for the Actions)</b>						108,592	0	7,601	1,750	9,351	3,000	2,172	0.1	
	Shut it Off Awareness Initiative	Approved	• Project Manager • Staff Resources	Q3 FY1					\$1,500		\$1,500			
	Remove Cozy Legs (savings only if implemented)	Approved	• Project Manager • Staff Resources	Q3 FY1					\$0		\$0			
	Custodial behavior modifications	Approved	• Project Manager • Staff Resources	Q4 FY1					\$250		\$1,500			
	Plug Load Competition	Approved	• Project Manager • Staff Resources	Q4 FY1					\$0		\$0			
<b>Operations (Estimate 15% Electricity / 4% Natural Gas)</b>						407,220	43,054	56,490	1,500	57,990	14,500	16,755	0.0	
	Sensor Calibration	Approved	• Project Manager • Staff Resources	Q2 FY1							\$0			
	Saturday Scheduling Experiment	Approved	• Project Manager • Staff Resources	Q3 FY1							\$0			
	Weekday Scheduling Experiment	Approved	• Project Manager • Staff Resources	Q3 FY1							\$0			
	Modify Boiler Availability to better match need (boiler operates weekends/night)	Approved	• Project Manager • Staff Resources	Q3 FY1							\$2,000			
	OSA Lockouts (morning warmup and afterhours)	Approved	• Project Manager • Staff Resources	Q3 FY1							\$2,500			
	Evaluate boiler part load control to maintain consistent operations (fits well with reset heating water temperature)	Approved	• Project Manager • Staff Resources	Q4 FY1					\$1,500		\$2,500			
	Heating Water Resets based on demand	Approved	• Project Manager • Staff Resources	Q3 FY1							\$3,000			
	Complete a building night audit	Approved	• Project Manager • Staff Resources	Q3 FY1							\$4,500			
	Establish Standard of Comfort with consistent space temperature set points	Pending	• Project Manager • Staff Resources	Q4 FY1										
FY2 ----- Plan kBtu/SqFt = 382.1						404,272	111,634	\$100,861	\$0	\$100,861	\$44,500	\$35,528	0.1	
FY3 ----- Plan kBtu/SqFt = 377.6						192,870	4,900	\$16,686	\$2,500	\$19,186	\$99,000	\$20,020	4.1	
<b>3 Year Plan Totals</b>						1,112,954	159,587	\$181,639	\$5,750	\$187,389	\$161,000	\$74,475	0.5	

## Employee and Occupant Engagement Plan

We will engage and empower employees and building occupants as partners in organizational efforts to effectively manage energy use and reduce consumption. Our efforts will communicate the benefits to participating, educate stakeholders on what they can do to reduce energy usage, and engage employees and occupants in activities to practice good energy management. Key metrics for success include:

- Vast majority (90 percent or more) of employees and occupants are aware of the need for energy use reduction and actively manage their energy use
- Employee and occupant efforts contribute to a 3 to 5 percent reduction in energy use

## Facility Operating Standards

To be developed as part of our ongoing energy management efforts. This document will set environmental conditions inside and outside our buildings. At a minimum it will include:

- Hours of occupancy
- Building heating and cooling hours
- Temperature setpoints for heating and cooling and setbacks when the building is unoccupied
- Interior lighting levels and when the lighting controls will automatically turn off
- When and how auxiliary (e.g., personal heaters) can be used for personal comfort
- Appropriate usage of personal appliances such as fans, fountains, and refrigerators

## Facility Operations and Maintenance Protocols/Checklists

To be developed as part of our ongoing energy management efforts. They will be incorporated into our computerized maintenance management system (CMMS) and added to preventive maintenance work orders and/or provided to vendors to be adopted as part of maintaining energy performance, capturing additional savings over time, and improving equipment and system reliability.

## Capital Projects Plan

To be developed as part of our ongoing energy management efforts. With support from our finance team, energy management will be incorporated into our capital project investment plans with energy costs calculated for all facilities investments. It will include the total cost of ownership for large investments, incorporating first cost, energy usage costs, carbon credits, maintenance costs, and replacement costs to determine the most attractive investment.

## Key Performance Indicator Metrics and Tools

Our energy use key performance indicators (KPIs) will be tracked using the metrics outlined below. KPIs will be tracked versus a two-year normalized baseline period using both KPI and actual savings with tools such as Energy Star's Portfolio Manager, tools provided by our utilities providers, and self-developed tools.

- **Electricity:** Weather-normalized kWh per square foot (kWh/SqFt)
- **Natural gas:** Weather-normalized metric million BTU per square foot (MMBtu/SqFt), assuming 100,000 BTU per therm

## Dashboard

The following dashboard will be used to track metric performance to date. The dashboard will indicate progress to annual targets and goals. This tool will be updated and reviewed monthly by the facility director. Quarterly performance updates will be provided to senior management.

Baseline Data						
	<b>kBtu/Sq.Ft.</b>			<b>Electricity</b>	<b>Usage (kWh)</b>	<b>Ave \$/kWh</b>
Building Square Footage	257,259			Performance Baseline	2,714,800	\$0.078
Electric EUI	36.1					
Nat Gas EUI	434.3			<b>Natural Gas</b>	<b>Usage (therms)</b>	<b>Ave \$/therm</b>
<b>Total</b>	<b>470.4</b>			Performance Baseline	1,076,339	\$0.950
Performance Outcomes						
			<b>FY1</b>	<b>FY2</b>	<b>FY3</b>	<b>Totals</b>
Electricity	Site Target	Baseline				0.0%
	Y-T-D % Reduction					0.0%
	Total % Reduction					0.0%
	Total \$ Saved					
Natural Gas	Site Target	Baseline				0.0%
	Y-T-D % Reduction					0.0%
	Total % Reduction					0.0%
	Total \$ Saved					