



Energy Efficiency
PROGRAM

Strategic Energy Management



WHAT IS STRATEGIC ENERGY MANAGEMENT?

As the cost of energy increases, it becomes more challenging for businesses to remain competitive in the marketplace. By incorporating a Strategic Energy Management (SEM) program into your daily Standard Operating Procedure (SOP), your business can remain competitive while making energy efficiency top of mind and part of daily operations. SEM is a continuous process of planning, implementing and monitoring energy consumption and operational practices to provide a path for achieving energy savings goals. If your organization is willing to make the commitment, through continuous monitoring, energy savings goals can be realized and sustainable.

Planning and executing a successful SEM program can be a daunting task. The steps outlined in this booklet intend to provide a guideline for your organization to use as you embark on this endeavor. Additionally, you'll learn about various incentive programs available through the Ameren Illinois Energy Efficiency Program to help your organization achieve its energy efficiency goals. Throughout this booklet, you'll find tips referencing the appropriate incentive program to consider during each stage of the process along with links to program information and training resources.



STEP 1: MAKE COMMITMENTS TO ACHIEVE YOUR GOALS

The first, and possibly most important, step is establishing buy-in from key leaders within the organization and securing their commitment to support an energy management program. No matter the size of your organization, commitment to energy efficiency is key. Your SEM program success will depend on the continuous assessment of current energy efficiency performance and the implementation of checks and measures to increase overall efficiency.

To help establish buy-in from key leaders, it's helpful to identify and assemble a dedicated SEM program team to focus on developing an energy policy.

Assign a Dedicated Energy Champion:

Appoint an energy champion. This role is an essential component of any successful energy efficiency program. The individual fulfilling the duties of this position will help establish energy efficiency benefits for the organization while encouraging energy efficiency practices be part of daily operations for the organization. The energy champion may not be an expert in energy or the technical and operational aspects of your processes, but should have a good understanding of how energy management will help your organization increase its financial goals. The energy champion role may be a full-time employee dedicated to the program or an additional responsibility added to a current job description.

The energy champion will typically be required to fulfill the following tasks:

- Manage the energy program.
- Assemble and lead an energy team.
- Create an energy policy to provide guidelines for the SEM program.
- Act as the point of contact for upper management.
- Assure accountability and commitment from key parts of the organization.
- Assess the added value of improved energy management.
- Promote and increase interest and visibility of energy management within the organization.
- Secure resources to implement the SEM program.
- Identify opportunities for improvement, including training.
- Conduct metering, monitoring and reporting of program results.
- Recognize achievement of program goals.

Assemble an Energy Team:

Creation of an energy team will help integrate energy management into the organization's daily operations. The energy champion working closely with this team will be responsible for the planning, implementation and tracking of SEM program performance and communication of the results to management and employees. The number of members comprising this team will depend upon the size of your organization and the scope of your energy management program. Consideration should be given to the inclusion of representatives from areas within the organization that impact energy use, such as Operations and Maintenance, Engineering, Facility Management, etc.



Draft a Formal Energy Policy:

They say a building is only as good as its foundation. The same may be said for a successful SEM program. To be successful, a formal energy policy will provide a strong base for your SEM program. It establishes management support and reinforces your company's commitment to creating a sustainable energy management program within your organization from top to bottom.

An energy policy should have a clear, well-defined and measurable objective that reflects the organization's commitment to a successful SEM program. It should clearly define roles, provide a chain of command and empower personnel to implement the SEM program. Provisions for policy evaluation and revisions should be included to accommodate changing needs and priorities as well as ensure continuous improvement. It should also provide a means for establishing performance goals by linking energy savings goals with overall financial and production goals.

Best Practices to Implement:

- Have the CEO or head of the organization officially issue the policy.
- Involve key leaders and staff in policy development to ensure buy-in.
- Communicate the policy to all personnel and encourage them to participate.
- Make the policy clear and easily understandable.
- Provide a level of detail covering day-to-day operations.
- Consider the skills and abilities of management and employees.

STEP 2: ASSESS YOUR CURRENT ENERGY USAGE

Understanding your present and past energy consumption and how it relates to production is an important aspect of assessing and improving energy performance within your organization. The assessment process involves periodic evaluation of energy usage and the creation of a baseline from which to measure future results of any energy efficiency measures that are implemented. Production data should be considered as well as any variables that may affect the data collection and evaluation process or influence energy-usage levels such as season, weather, product changes, etc.

Data Collection:

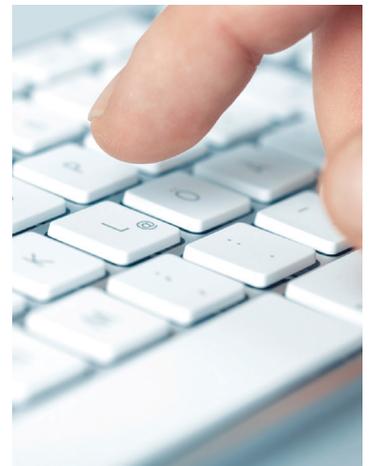
Data collection is one of the most important steps in your SEM program. The evaluation process requires accurate details of how your energy is used, where it is used and when it is used. The data will be used for evaluating your current energy usage patterns, establishing an energy-usage baseline and effectively managing your energy usage through goal setting and goal achievement. For that reason, the data needs to be accurate and complete. The amount and type of data collected will vary depending on the level of energy management set forth in your program goals. In some instances, using your utility bill as a starting point may be sufficient. In other cases, you may need to utilize sub-metering to help pinpoint the energy hogs in your facility and provide specific usage data on individual areas or departments within the facility.

Inventory and determine a cost basis for all energy sources such as electricity, steam, gas or any source that may be generated on-site.

Assemble at least two years of monthly (or more frequent) usage data. In addition, collect and document any additional data that may affect energy usage such as operating hours of business and equipment. This information is vital to creating an accurate benchmark for future SEM program efficiency calculations. Collection of production data as it relates to energy consumption should also be performed.

Tracking:

Develop a system for tracking and recording performance. This may be a simple spreadsheet or a more detailed computer-based tracking/trending system. The information collected is vital to evaluating progress toward goals and communicating performance within the organization to encourage continued SEM program participation. Make your reporting as simple to understand as possible.



The Assessment Process:

Best Practices to Implement:

- Use current and timely data in your evaluation process.
- Utilize your tracking system to develop quarterly and annual reports profiling energy consumption.
- Use actual recorded data, if possible, rather than estimated.
- Compare your usage to other similar facilities based on collected data, if possible.
- Use sub-metering, if possible, for more detailed reporting.
- Collect data for each energy source individually (electric, gas, steam, etc.).

METERING / MONITORING

Metering and monitoring through Ameren Illinois can provide an incentive of up to \$5,000 (or 25% of the costs) to install new meters and/or software to help you better visualize, manage and reduce your energy usage. Projects that submit regular baseline data for one year after equipment installation may be eligible to receive a data bonus of up to \$2,000 (or 10% of project cost). A performance bonus of up to \$15,000 (or 75% of the project costs) may also be paid based on the annual energy savings from projects identified via metering and monitoring. Incentives may potentially cover 100% of the cost of enhanced metering and monitoring.

For more information on this incentive offering and to download the application, please visit AmerenIllinoisSavings.com/Metering.

Establishing a Baseline and Benchmarks provides a starting point for energy performance goals and allows for evaluation and measurement of performance and progress towards these goals. A baseline should be established for each of your energy sources. These benchmarks can be set using data collected over a prior year or calculated based on average use over a period of years. They should also take into consideration any variables that may have an effect on energy usage, such as weather, season, product changes, etc. Production levels should also be benchmarked in relation to energy usage to help understand how production affects energy usage. Compare your benchmarks to your own past performance, industry standards and best of class examples in your industry.

Analyzing your data to determine energy-usage patterns will help you gain a better understanding of how, when and where your energy is being used. It will help your organization determine what factors may be affecting your overall energy usage and help determine any corrective actions that may be required. As you analyze the data collected, you should identify any spikes or dips in energy usage, determine their cause and how they affect your utility bill and production. This data will help you pinpoint areas of high usage and determine the effect on overall production costs. During your analysis, you should include a review of your current operational and energy program policies to evaluate how they affect energy usage.

Some of your best input will come from the employees who actually perform the operations and maintenance within your facility. Be sure to include their thoughts and ideas within your analysis. This will not only be valuable information but will strengthen their support of your SEM program and goals.

MODELING

Ameren Illinois Energy Advisors can assist with modeling your energy-usage patterns to establish an energy-intensity baseline and predict future usage based on data collected. These models will help determine the effectiveness of your SEM program.

For more information, please visit AmerenIllinoisSavings.com/SEM.



Consider the following when creating your data collection and reporting system:

Data Analysis:

During your analysis of production and energy-usage data, the development of a profile that trends usage patterns and spikes or dips in usage levels in relation to specific events or production will help you locate and identify areas of high usage or high cost. Utilizing sub-metering along with monitoring software for data trending can help tremendously with simplifying this process.

Armed with an analysis of your processes and energy-usage patterns, you will have valuable information needed for reviewing organizational policies and operational procedures and determining their influence on energy usage. As suggested earlier, it is beneficial to seek out opinions from knowledgeable personnel in all areas of the organization throughout your endeavor to identify the most efficient operational practices.

Conducting an Energy Audit:

Production and energy-usage data is only a portion of the information necessary for conducting a thorough energy evaluation of your operation. The performance of systems, equipment and processes should also be reviewed periodically.

An energy audit is a comprehensive review conducted by an engineer and/or professional trained in the specific system being evaluated for energy efficiency. The audit will compare the current system's efficiency and performance to its original design and any newer, more efficient technologies. The results of the comparison will provide potential energy savings and projected payback period for updating or replacing the current system. In addition to evaluating specific systems within your facility, the auditor will evaluate the feasibility of updating or replacing the equipment and develop a strategy for project completion. A final report based on the audit results will provide recommended actions that may include simple adjustments to the system, an upgrade or replacement of the system or operational and process modifications. Estimates of the resources and costs associated with the project will be included in the report to help evaluate the payback period for the recommended measures. The use of an outside source for this audit and report is recommended to provide an objective evaluation by an expert on the systems being evaluated.

RETRO COMMISSIONING

Offered through the Ameren Illinois Energy Efficiency Program, the Retro Commissioning Offering can provide incentives for a majority of survey costs as well as an added implementation incentive based on the energy saved from projects identified during the survey, with the exception of compressed air leak repair. Programs are available for Compressed Air, Healthcare, Commercial Buildings and Industrial Refrigeration.

To learn more about the Retro Commissioning Offering, visit AmerenIllinoisSavings.com/Retro. From here, you can also complete an application and view a list of Retro Commissioning service providers.

STEP 3: PLANNING, ORGANIZATION AND GOAL SETTING

Effective planning, program organization and detailed goal setting are the cornerstones of a successful SEM program. Clear, concise and measurable goals are required for developing an effective energy efficiency strategy and clearly understanding the objective and intended results of your efforts.

Goals are typically developed by the energy champion and energy team and should include a clear timeline and target dates for completion. These goals and objectives should become a part of the daily operational processes and provide a guideline for continuous monitoring, tracking and implementation of your SEM program. The goals you set should be clearly communicated throughout your organization to motivate personnel to support the SEM objectives. Goal setting confirms a commitment to energy efficiency and sets the stage for continuous improvement throughout your organization. Your goals also become the benchmark from which you evaluate progress toward goals as well as any setbacks.

Consider the following when determining program scope:

Level of Commitment:

Goals may be set for different levels within your company and will vary from organization to organization. A determination should be made regarding the extent of the commitment within your organization. For example, will your program and goals be organization wide or for a specific process, area or piece of equipment?

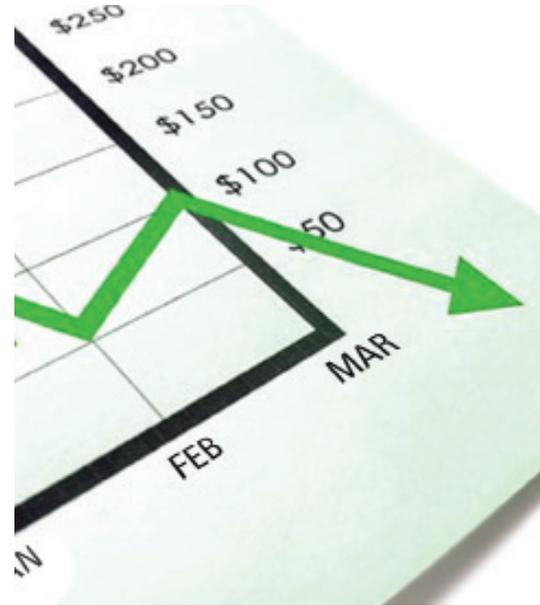
Setting company-wide goals that encompass all locations provides a big picture of what is expected and how the organization as a whole intends to improve its energy efficiency. At the local facility level, your goals may become more specific and geared toward the actual operations and energy benchmark at that location. These site-specific goals are designed to help achieve the company-wide goals. In addition, establishing standards for a specific process or piece of equipment will further define and fine tune your goals, especially in areas of highly concentrated energy use.

Goal Setting:

Now that you have a formal energy efficiency policy drafted, own a good understanding of your systems and possess valuable energy-usage data, you are ready to set goals. As you set goals, it is important to keep them realistic and achievable, especially in the initial phases of your program. Employees performing the functions associated with an energy management program need to experience success along the way in order to solidify their commitment to the program. Nobody likes to fail!

Goals may be defined in several ways: as a specific energy savings such as a 10% reduction in kWh usage or 500 million Btu, based on production levels or energy intensity levels such as a reduction of 10 Btus per unit of product produced or a specific reduction in greenhouse gases released into the environment. Goals may also be based on the benchmark established during your initial data collection phase as a percentage of reduction from that benchmark. You may also set minimum acceptable savings levels as well as levels beyond your target to help promote an incentive for greater achievement. Consider implementing some type of reward system to recognize achievement of a team or an individual basis.

Ultimately, your goals should be formally established and endorsed by senior management and preferably presented to the organization by company leadership to establish their support and commitment to the success of the program.



STEP 4: IMPLEMENTATION OF PLAN

You have built your team, defined an energy policy that has been presented to the company by senior management, collected data and set benchmarks. You should now be in a position to define your action plan, which will act as your road map toward improved energy performance and putting your plan into action. Unlike the energy policy, which broadly defines your SEM program's overall goals and commitment levels, the action plan will be regularly updated to reflect your progress toward established goals and a timeline for completion.



Steps to Success:

Your action plan should start by identifying gaps between current performance and your goals for improvement. This information can be acquired from the data you have collected and the audits that have been performed. At this point, it's time to identify the necessary steps to improve your energy intensity levels from their current levels to those set forth in your goals. Targets should be created and integrated into the action plan, spelling out the steps to be taken for each facility, process or machine, in order to reach the desired goal. Some type of tracking system should be put into place to monitor the progress of the identified action items and to determine a defined timeline for completion.

Setting Target Dates:

Just as important as setting realistic goals is establishing a realistic time frame for the completion of your energy efficiency goals. This is essential to maintaining progress and keeping your goals on track. You might consider creating some short-term as well as long-term goals to "keep the train on the tracks" and to help you determine where your progress stands. These target dates can be tracked simply as setting a date on a calendar or more in depth using Gantt charts or similar tracking software that provides a continuous record of your progress, project assignments, milestones and obstacles. These target dates should serve as guideposts along the way to achieving your goals.

Determine Resources Required:

Each of the action items or projects within your action plan will have a cost associated with it in both capital and human resources. It is important to establish this cost to determine feasibility, justify each project and secure the resources required for completion. As mentioned earlier, it is beneficial to consider outside sources for both the manpower and the monetary incentives to help reduce the burden. The Ameren Illinois Energy Efficiency Program offers cash incentives to assist your efforts in energy efficiency and can provide a list of service providers who can help reduce the impact on time and manpower.

Determine Individual Roles:

Manpower from different areas will most likely be required in order to implement your plan effectively. Consider including representatives from areas such as Operations/Building Management, Human Resources, Maintenance, Engineering, Purchasing and Accounting, among others. You will need to determine the role each department representative plays in your action plan.

In many cases, outside vendors, consultants and other service providers will need to be utilized in order to implement your plan. Their roles will also need to be determined and clearly defined. Determine what standards will be used for the bid evaluation process and overall performance verification and incorporate these details into any agreements or contracts.

PROGRAM ALLIES

Program Allies are contractors registered with the Ameren Illinois Energy Efficiency Program who have received special training in energy efficiency. The Program can provide you with a list of registered Program Allies who can assist your team with system audits as well as completing the required applications and supporting documentation.

For a list of registered Program Allies, please visit AmerenIllinoisSavings.com/ProgramAlly.

Communications:

Communication is key to making your energy efficiency program a success. Your program will be best served by keeping everyone involved in the implementation of your program up to date on the current status of your projects, expected results and next steps to be taken. Create a communications plan and develop information relevant to the individuals involved. Shared information may have different criteria and content depending on the areas of operation, tasks assigned, job description, etc. Providing an open line of communication within your organization will help maintain awareness of your energy efficiency program, motivate your staff to improve performance and increase support from senior management. As an added benefit, informed employees are more likely to follow recommended procedures, operate equipment efficiently and contribute useful ideas.

Individuals within your organization, including management who are not directly involved in energy management, may have little understanding of the energy performance of your facility and how it impacts the cost of goods or the environment. Training should be a part of your communications initiative. As part of your training plan, your strategy should include webinars, poster campaigns, energy fairs and new employee orientations. The better your staff understands the program and how energy efficiency affects your bottom line, the more likely they will be to participate and help promote the program within the organization. It is also important to recognize individuals or teams for their efforts toward a successful energy management program. There are many outside sources available for use in conjunction with your internal training program. The internet provides a wealth of printed and electronic forms that can be utilized for energy training.

TRAINING

Ameren Illinois Energy Advisors are available at no charge to help you train your staff on the effective use and specifics of incentives from the Ameren Illinois Energy Efficiency Program.

For more information, please visit AmerenIllinoisSavings.com/EA.

STEP 5: VERIFICATION, MONITORING AND REPORTING

It is important to establish a tracking and monitoring system to record and report your SEM program activities and progress. This system should be readily available and centrally located for everyone's use in evaluating the program's progress toward established goals, milestones and target dates. Your action plan is part of this monitoring system and should be available for periodic review. Information within this system needs to be current, comprehensive and collected at a periodic rate that is appropriate for the system being evaluated. Reports should be provided on an appropriate schedule and assessed by the management team, energy team and other appropriate personnel. The evaluation process by this group should identify problems encountered, highlight progress made and quantify savings realized. This monitoring and reporting system is essential to determining progress toward your goals and whether or not a particular program or action is meeting its expected results.

Verification:

The verification process utilizes the data collected, as well as the reports generated, to provide a formal review of the program's current status and how it is tracking with program objectives, goals and timeline. These reports will help identify which actions are performing well and pinpoint those that are not, providing an opportunity to adjust the action or program accordingly. Regular evaluation of these energy performance reports will give senior management and energy managers a good tool for measuring the effectiveness of the program and making informed decisions about current, future or upcoming energy projects.

These reports also provide a means of identifying successes, creating an opportunity to reward individuals and team members for their accomplishments. Continuous monitoring of the action plan's progress will help you determine its effectiveness. Seeking out input from team members, department heads and personnel implementing the plan will help you continually optimize your action plan and identify factors that may be contributing to surpassing your goals as well as those that may be inhibiting progress. Once these details have been noted, modify your action plan accordingly.

STEP 6: RECOGNITION OF ACHIEVEMENT

Motivation and Recognition:

Training and communication will help motivate your staff, but some form of recognition or incentive for meeting or exceeding goals is key to sustaining support and building momentum for your program. Recognition of efforts and accomplishments will help motivate employees and strengthen their morale. Many organizations offer some form of incentive to help generate interest in energy efficiency initiatives and foster a sense of ownership among employees. The incentive may be as simple as formal recognition highlighting and rewarding an individual, team or department for their role in a successful program or it could be more substantial in the form of a cash bonus or other reward when goals are met or exceeded.

You may also consider creating an internal competition between departments performing similar tasks or offering rewards for submitting the best energy-savings ideas. Gaining buy in from your employees will go a long way toward achieving a successful energy management program. Additionally, recognition of your achievements from outside sources such as governmental agencies, media, utility companies, etc. will not only highlight the importance of your energy management initiative to both internal and external stakeholders but also provide positive exposure for your organization as a whole.



SUMMARY

Implementing a successful SEM program is a continual process of making commitments to achieve your goals, assessing your current energy usage by planning, organizing and setting goals, and implementing your action plan. Monitoring, reporting and verifying, and recognizing achievements are also important in the process of implementing a successful SEM program. Although it seems like a daunting task, the rewards can be substantial in terms of energy savings, cost reduction and increasing your bottom line, in addition to the environmental benefit of reducing greenhouse gases released into the atmosphere. Much of the workload can be reduced by utilizing Program Allies for auditing, evaluation, equipment installation and training. In addition, the Ameren Illinois Energy Efficiency Program can provide cash incentives to help offset up-front costs and move your project forward.

The Ameren Illinois Energy Efficiency Program can provide you with case studies that highlight customer successes with the Program. These examples will give you a good idea of what can be accomplished through the implementation of an SEM program. Ameren Illinois Energy Advisors can provide you with an overview of the programs available to your organization and help guide you through the process of completing your projects.

ENERGY MANAGEMENT AS PART OF YOUR DAILY OPERATIONS

The purpose of an SEM program is to help your organization begin the process of saving energy and reducing overall operating costs. The steps outlined on the next page are intended to be a guideline for your organization and should be modified to fit your organization's individual circumstances. Tasks are broken down quarterly to help you maintain a realistic timeline for the design, implementation and verification of your SEM program. As you can see, the first quarter is dedicated to establishing buy-in with the key leaders of your organization, creating an energy policy that communicates goals and expectations within your organization and performing an overall energy management assessment of your facility. These steps are crucial to the success of your SEM program. Next, data collection is necessary to establish benchmarks for measuring the success of your program. Once the benchmarks and goals have been determined, the next steps are continued monitoring, conducting periodic evaluation of progress toward each goal and working to maintain a focus on continuous improvement. Throughout this entire process, one of your primary goals should be establishing energy awareness as an integral component of the culture within your organization.

For more information, please visit [AmerenIllinoisSavings.com/SEM](https://www.AmerenIllinoisSavings.com/SEM).

Q1

Commitment of Leadership**Energy Management Assessment****Creation and Adoption of Energy Policy and Goals – Individual Role Assignments**

- 1). Assign and define goals for:
 - a). Lead Energy Program Director
 - b). Facility Energy Program Manager
 - c). Process Improvement Champion
 - d). Utility System Champion
- 2). Create team organizational chart and define individual responsibilities, expectations and goals.

Q2

Data Collection and Evaluation

- 1). Determine the availability of energy-usage data.
 - a). Determine the availability of energy-usage data, both internally and from utility providers.
 - b). Train appropriate team members on reading and comprehending charges listed on utility bills.
 - c). Determine the baseline or benchmark to use as the basis for determining the progress of your energy management system.
- 2). Determine how progress toward goals will be monitored and evaluated.
- 3). Determine program auditing and reporting plan.
- 4). Evaluate Ameren Illinois Energy Efficiency Program incentives that may assist in reducing initial and possibly ongoing costs.

SUGGESTED QUARTERLY GOALS

Q3

Begin Full Energy Management Plan

- 1). Incorporate your SEM program into the SOP.
- 2). Implement equipment changes/upgrades and complete related capital projects as identified. Use Ameren Illinois Energy Efficiency Program incentives when possible.
- 3). Continue the monitoring and evaluation process put in place.
- 4). Make SEM a company way of life.

Tracking, Training and Evaluating

- 1). Monitor energy usage on a daily, weekly and/or monthly schedule and evaluate variances from goals to determine cause and effect. Automate this process if possible to reduce man hours required.
- 2). Identify energy hogs, determine reason and evaluate solutions.
- 3). Continue associate training to ensure program does not become stale and maintain buy-in (possible recognition and/or awards for best practices).

Q4

Monitor and Review Plan Progress

- 1). Are goals well defined and benchmarks determined?
- 2). Have energy savings targets been pinpointed and evaluated for corrective solutions?
- 3). How is the energy management team performing and are some adjustments and/or more training required?
- 4). How is the program being accepted by associates? Is more training required?
- 5). Have energy-saving capital projects been identified and budgeted for?

Year-End Review

- 1). Final evaluation of energy management plan, program goals and progress to date.
- 2). Year-end best practices event.



For more details, please visit:

[*AmerenIllinoisSavings.com/SEM.*](https://AmerenIllinoisSavings.com/SEM)



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