

TEAMING UP TO SAVE ENERGY

Protect Our Environment
Through Energy Efficiency



ENERGY STAR



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FOREWORD

Organizations with energy programs that achieve results have senior-level support, sufficient energy program staff, and management structures that empower staff to address energy efficiency issues directly. The U.S. Environmental Protection Agency's (EPA) ENERGY STAR® "Guidelines for Energy Management" provide a management structure for organizations to follow in developing a strategy for achieving sustained performance. Forming an energy team is one of the first steps in this framework.

Teaming Up to Save Energy is a "how-to" guide on building an energy management team. The guide discusses the structure, launch, and maintenance of an energy team. Examples from ENERGY STAR partner organizations and a checklist are provided to illustrate practices and help with implementation. This guide complements "Guidelines for Energy Management," which is available online at www.energystar.gov.

AN ENERGY WAKE-UP CALL

Management of energy is good business because it strengthens the bottom line. In many sectors, well-run energy programs may reduce energy costs by 3 to 10 percent annually. By improving financial performance, superior energy practices can create a competitive edge.

Strong energy management is a strategic asset. Besides reflecting overall management acuity, it can be a sign of future profitability. Financial analysts and investment firms increasingly view the quality of energy management as an indicator of financial performance.

Organizations often differ dramatically in energy performance, even when they belong to the same industrial or commercial sector, operate under the same market conditions, and use the same equipment. Why the big performance gap?

The high performers adopt a structured approach to energy management and establish policies and procedures needed to ensure long-term results. They commit to allocating staff and resources to energy management, establishing goals, and adopting a philosophy of continuous improvement.



SITUATIONS:

- Rising energy costs and increasing price volatility.
- Concerns about the reliability of supply.

SOLUTIONS:

- Consider going beyond the traditional organizational focus on energy supply and procurement.
- Reduce supply risks by improving energy efficiency.



SITUATION:

- Your organization's senior managers are convinced that energy management requires capital-intensive purchases or new technology.

SOLUTIONS:

- Use internal examples of energy savings from better management practices and low-cost improvements.
- Find examples of wasted energy and calculate the savings from better practices.
- Use life-cycle costs and benefits to evaluate capital expenditures rather than just initial costs.
- Cite examples of leading companies and organizations with strong energy programs.

The ENERGY STAR “Guidelines for Energy Management” provide a framework for organizations as they develop and implement an energy management program. The steps of the management strategy outlined in the “Guidelines for Energy Management” are broadly illustrated in the graphic on page 3. More details on the “Guidelines for Energy Management” can be found at www.energystar.gov.

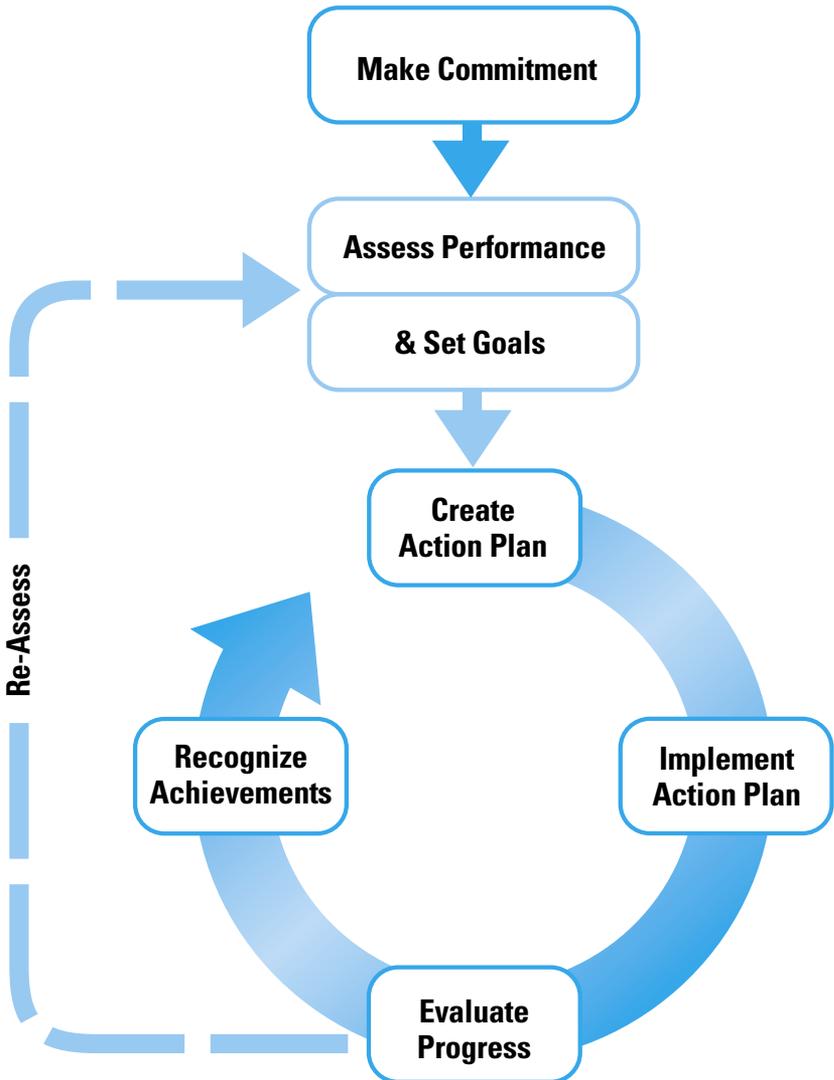
Establishing an energy team is an important part of the first step in energy management, “Make Commitment.” The energy team is responsible for planning, implementing, benchmarking, monitoring, and evaluating the organizational energy management program. The team’s duties also include delivering training, communicating results, and providing recognition.

This guide is designed to help organizations develop effective energy teams. The guide provides assistance through checklists, guidance, and examples for:

- Organizing your energy team
- Starting your energy program
- Building capacity
- Sustaining the team, and
- Maintaining momentum

FOR EXAMPLE, a culture of energy efficiency is embedded within the organization at **Hines**, an international property development company that builds and manages office space and other real estate. “Making wise use of energy is part of our company culture,” says Jim Green, C.P.E., the company’s regional manager of engineering services. “If I’m visiting a property and someone shows me new work we’ve done, I may comment on the quality of the workmanship, but my next question is how does it affect the building’s energy picture? Everyone on our staff thinks that way; we mentor them to think in those patterns.”

GUIDELINES FOR ENERGY MANAGEMENT



This diagram illustrates the main management elements of the ENERGY STAR “Guidelines for Energy Management.” To read the Guidelines, visit www.energystar.gov.

TEAMING UP TO SAVE ENERGY CHECKLIST

ORGANIZING YOUR ENERGY TEAM			See Page	✓
Energy Director	<p>Able to work with all staff levels from maintenance to engineers to financial officers</p> <p>Senior-level person empowered by top management support</p>	7		
Senior Management	<p>Energy director reports to senior executive or to a senior management council</p> <p>Senior champion or council provides guidance and support</p>	8		
Energy Team	<p>Members from business units, operations (e.g., engineering), facilities, and/or regions</p> <p>Energy networks formed</p> <p>Support services (PR, IT, and HR)</p>	9		
Facility Involvement	<p>Facility managers, electrical personnel</p> <p>Two-way information flow on goals and opportunities</p> <p>Facility-based energy teams with technical person as site champion</p>	12		
Partner Involvement	<p>Consultants, vendors, customers, and joint venture partners</p> <p>Energy savings passed on through lower prices</p>	13		
Energy Team's Structure	<p>Separate division and/or centralized leadership</p> <p>Integrated into organization's structure and networks established</p>	14		
Resources and Responsibilities	<p>Energy projects incorporated into normal budget cycle as line item</p> <p>Energy director is empowered to make decisions on projects affecting energy use</p> <p>Energy team members have dedicated time for the energy program</p>	15		

STARTING YOUR ENERGY PROGRAM			See Page	✓
Management Briefing	Senior management briefed on benefits, proposed approach, and potential energy team members	16		
Planning	Energy team met initially to prepare for official launch	16		
Strategy	Success showcased at the official launch	16		
Program Launch	Organizational kickoff announced energy network, introduced energy director, unveiled energy policy, and showcased real-world proof	17		
Energy Team Plans	Work plans, responsibilities, and annual action plan established	18		
Facilities Engagement	Facility audits and reports conducted, energy efficiency opportunities identified	19		
BUILDING CAPACITY			See Page	✓
Tracking and Monitoring	Systems established for tracking energy performance and best practices implementation	21		
Transferring Knowledge	Events for informal knowledge transfer, such as energy summits and energy fairs, implemented	22		
Raising Awareness	Awareness of energy efficiency created through posters, intranet, surveys, and competitions	24		
Formal Training	Participants identified, needs determined, and training held Involvement in ENERGY STAR Web conferences and meetings encouraged Professional development objectives established for key team members	25		
Outsourcing	Use of outside help has been evaluated and policies established	27		
Cross-Company Networking	Outside company successes sought and internal successes shared Information exchanged to learn from experiences of others	28		

SUSTAINING THE TEAM		See Page	✓
Effective Communications	Awareness of energy efficiency created throughout company Energy performance information is published in company reports and communications	30	
Recognition and Rewards	Internal awards created and implemented Senior management is involved in providing recognition	31	
External Recognition	Credibility for your organization's energy program achieved Awards from other organizations have added to your company's competitive advantage	32	
MAINTAINING MOMENTUM		See Page	✓
Succession	Built-in plan for continuity established Energy efficiency integrated into organizational culture	33	
Measures of Success	Sustainability of program and personnel achieved Continuous improvement of your organization's energy performance attained	33	

ORGANIZING YOUR ENERGY TEAM

One person cannot do it all. Energy management is a cooperative activity involving a team and, usually, multiple subteams. A team approach improves buy-in from all levels of the organization, which helps to ensure greater energy savings.

ENERGY DIRECTOR

Senior management needs to perceive energy management as part of the organization's core business. The key is an energy team leader at the corporate-level who is empowered by support from the top senior management. The energy director should be passionate about energy management without being a zealot or grandstanding, both of which can decrease team cohesion.

Some energy directors have a technical background; others have financial experience or have been plant managers. Regardless of background, the energy director must be able to work with all staff levels, from maintenance to engineers to financial officers.

DO: Share credit for the achievements of the energy management program with everyone involved. This practice avoids "ownership" struggles and can increase participation because everyone wants to be part of a winning effort.

DO: Visit the organization's facilities on a regular basis to determine their needs.



*FOR EXAMPLE, "I'm on the road 50 to 60 percent of the time," says Fred Dannhauser, former global energy manager at **Owens Corning**. "I'm interested in going to the plants and being out on the floor and being their barrier buster with the corporation."*

SENIOR MANAGEMENT

The energy director needs to be in touch with the big picture. One way to help ensure empowerment is for the energy manager to report directly to an executive who can serve as a corporate ally.

Another option is a senior management council that provides the energy director with guidance at the strategic level and serves as the corporate champion. The council might meet annually and be composed of representatives from each business unit and, for multinational organizations, each region. Other members might include the CFO, treasurer, and director of purchasing.

DO: Secure an ENERGY STAR Partnership letter signed by your CEO and use it as one of the team's credentials to help empower your team.

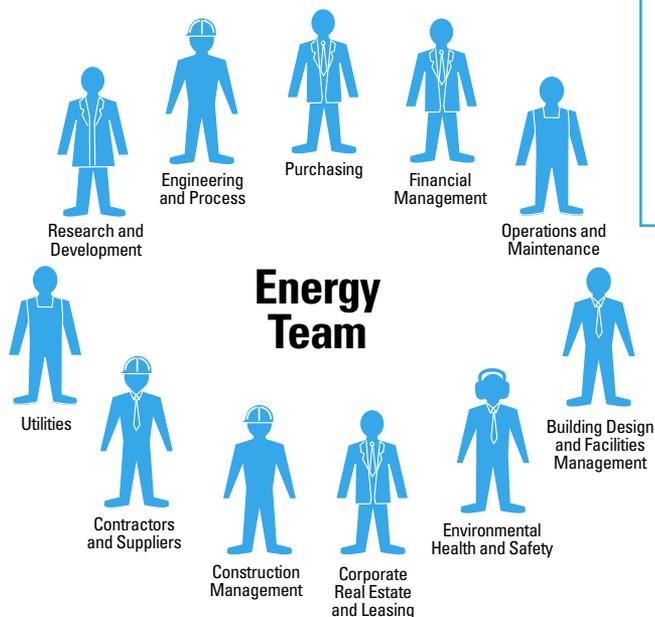
DO: Involve your CEO in recognizing individuals and facilities that achieve significant gains in energy performance.



ENERGY TEAM

As with the strategic-level council, the number of people on the energy team at the operational level depends on the size of your organization. The right mix of players on this energy steering committee is crucial. The energy director might recruit team members based on business units, operational areas, and/or regions.

Consider a representative from each operational area that significantly affects energy use, such as:



FOR EXAMPLE, at **California Portland Cement Company**, a subset of the company's energy team is made up of process engineers who visit a different plant every six weeks and do an energy audit. At one plant, the process engineers focused on the finish grinding system and identified \$300,000 in opportunities for annual energy savings.

Other possible members of the core energy team include plant managers, plant engineers, and electrical supervisors. One important consideration is to ensure that the team is multidisciplinary. A diverse, cross-functional team can find more opportunities for reducing energy use. Some multinational organizations have multiple levels of energy teams, which form an energy network. A small organization may have only a few key representatives.



SITUATIONS:

- At many manufacturing sites, investments in process improvements take priority over energy investments.
- Usually the funding of projects is based on first cost rather than life-cycle cost.

SOLUTIONS:

- Include process engineers as part of the energy team to provide access to process improvement planning.
- Consider developing indicators that measure the financial and environmental benefits, as well as productivity improvements, that are understandable to everyone in the organization. Energy savings can be presented as an equivalent amount of product that would need to be sold to obtain the same financial gain (net profits).
- Measure the impact of the program by its effect on earnings and shareholder value. ENERGY STAR provides a financial value calculator to help measure this impact.
- Use financial metrics such as net present value, simple payback, internal rate of return, and hurdle rate to make your case effectively. Speak the language of your organization's financial officers when explaining the program.
- Focus on internal rates of return to demonstrate that energy projects may be better investment alternatives than capital allotted for process improvements.
- Explain how investing in technologies and practices that reduce energy can affect your organization's energy security and help insulate the organization from the risks associated with supply and price uncertainties in a deregulated market.

Additional Support Services:

- **Public Relations:** PR departments can help share information with the organization and help ensure favorable publicity for your organization's energy management accomplishments.
- **Information Technology:** IT personnel can help with tracking systems and web-based communications.
- **Human Resources:** HR personnel help you staff the energy team, train the workforce, and administer performance standards and rewards.

INVOLVING FACILITIES AND PROPERTIES

Most energy improvements are implemented at the facility and property level. Changing current, often inefficient, operating practices to a culture of efficiency requires that facilities or properties buy into the principles of the organization's energy management program.

*FOR EXAMPLE, the **General Motors Corporation** has an Energy and Environmental Strategy Board consisting of directors and headed by the executive vice president. At the next level is a Global Energy Team with representatives from GM North America, GM Europe, GM Latin America, and GM Asia/Pacific. The third level is a Manufacturing Leadership Team, which monitors progress on a quarterly basis. A fourth level is the Energy and Utility Services Group, which is responsible for energy consumption and the energy budget for GM North America. Finally, every plant has an Energy Conservation Team that includes both salaried and hourly people.*

*FOR EXAMPLE, at **Colorado Springs School District 11**, a team with engineering and technical expertise coordinates energy projects. The team meets with a committee made up of principals, teachers, building managers, a procurement department representative, food service managers, security department director, and vendors.*

SITUATION:

- Facility employees and managers are too busy to work with the energy team, but are the ones whose help you need.

SOLUTION:

- Attend facility meetings or participate in discussions to learn about their concerns and how you can address them.
- Provide information, tips, and reminders on how to save energy.

FOR EXAMPLE, during visits to **Hines'** managed properties, Jim Green offers suggestions on introducing new technologies, but he also finds that ideas are a two-way street. "I might visit a property that has a technology that I've not seen installed before, so I'll ask the manager to put together a 'best practices,' and I'll show him how to do that. That way, we share information and spread concepts and technologies."

FORMING A FACILITY-BASED ENERGY TEAM

A mechanism to involve people at facilities and properties is essential since day-to-day working practices in the facilities greatly influence energy efficiency.

STEPS:

- Send out the ENERGY STAR Partnership letter signed by your CEO to the facility managers and ask them to participate. The letter is a proven door-opener.
- Ask the plant or property managers to identify a person who will "own" energy management at that facility and serve as the site energy champion.
- Provide the site champion with information on the benefits of energy efficiency to educate other employees.
- Encourage the site champion to form an energy team that includes the plant's key operations and maintenance people.

DO: Meet informally during half-hour breaks so as not to interfere with regular work schedules of the site energy team.

DO: Recruit candidates for the energy team by letting them know that it is a career-enhancing opportunity. They will be saving money for their organization, and that is important in a performance-oriented environment.

DO: Illustrate how energy management practices support the facility's and company's goals.



FOR EXAMPLE, "Instead of a top-down structure, **Toyota** has more of a give-and-take negotiation with the plants," says Bruce Bremer, manager of Facility Engineering—Engineering Support at Toyota. "We are constantly asking them for their input and involvement."

INVOLVING PARTNERS, CONSULTANTS, VENDORS, AND CUSTOMERS

Consider engaging your joint venture partners, customers, vendors, and service providers in the energy management program.

Vendors and service providers who reduce their own energy costs might pass those savings on by charging lower prices. Those suppliers also can help advance your organization's energy management program by providing tips on energy-efficient equipment.

By the same token, helping customers reduce their energy costs might provide a value-added service that can help retain them as purchasers of your company's products.

FOR EXAMPLE, **General Motors**, through the Suppliers Partnership for the Environment™, has helped its suppliers evaluate how to manage and use energy.

FOR EXAMPLE, to demonstrate to the community that every possible effort is being made to achieve significant energy improvements without any additional tax burden, **Colorado Springs School District 11** has used multiphase performance contracts with energy service companies to leverage energy savings for financing new capital-intensive projects.

FOR EXAMPLE, **Eastman Kodak** has preferred supplier agreements to buy all its motors from preferred vendors. "With an agreement comes engineering and technical support, so when we're doing energy assessments, we can rely on them to help us decide whether the cost of putting in a high-efficiency motor is justified," says Kodak worldwide energy program manager George Weed.



THE ENERGY TEAM'S STRUCTURE

Where the energy team lives in the organizational tree is important for its success. Sometimes the team is its own division or a component of Facilities, Operations, or Environmental, Health, and Safety. Who the team members report to is also an important consideration. Often, energy teams are a voluntary network, and the members do not report directly to the energy director. The exception is those organizations that operate energy management as a separate business unit.

The energy team needs to be empowered by “owning” energy management and by having the authority to make decisions. The energy director should be part of the organization’s strategic business planning sessions.

Don't go it alone! Successful teams avoid a maverick reputation, which can make energy management seem like a marginal activity and thus at risk of elimination. Energy management should be integrated into the organization’s structure as part of its core business, rather than being a stand-alone activity that gives the impression of being in its own world. When energy management is fully integrated, each department or function has an energy management role as part of its staff members’ jobs.

DO: Pass credit to others who are not part of the team but are implementing the energy improvements.

FOR EXAMPLE, “As part of our environmental activities, energy savings is listed as one of our key performance indicators,” says Bruce Bremer of Toyota. “So it’s right up there on our radar screen. Over the years, we moved it up on the company’s priorities by keeping it visible.”

INTEGRATION OF ENERGY MANAGEMENT ACTIVITIES

	Establish Energy Goals	Plan Energy Projects	Develop Cost Estimates	Implement Energy Projects	Track Energy Savings
Energy Management Team	✓	✓	✓	✓	✓
Engineering Department		✓	✓	✓	
Financial Management Department			✓		
Building Design and Facilities Department		✓	✓	✓	

RESOURCES AND RESPONSIBILITIES

Funding is a key to the success of the energy management program. Some organizations set aside a percentage of their budgets for energy projects. The challenge is to get energy projects incorporated in the normal budget cycle as a line item. Timing is all-important. Seek funds early, rather than adding projects after the annual budget is finalized.

DO: Strive to establish the energy director as a full-time position and allocate at least 20 percent of each energy team member's time if your company has multiple facilities and large energy expenditures.

DO: Consider securing a different hurdle rate or return on investment (ROI) for large or capital-intensive energy projects that will help hedge against rising energy costs.

DO: Consider developing a capital fund for energy projects based on a percentage of the savings achieved from the projects.

FOR EXAMPLE, "Our biggest areas for potential improvement require a large capital investment," says Stephen J. Coppinger, P.E., chief electrical engineer at **California Portland Cement**.

"But we've been able to show plant managers that there are a lot of things we can do short of spending a lot of money. A consultant did a study and came up with a list of projects at one plant with a potential savings of \$400,000 and a one- or two-year payback. And those projects can be replicated at other plants."

FOR EXAMPLE, **General Motors** created a business unit that has responsibility for energy supply, consumption, and efficiency for all of the company's North American plants. "The company transferred the energy budgets from the plants to this group," says Kamesh Gupta, GM energy manager. "All energy-consuming assets of the plants, such as compressors and air chillers, are part of this business unit. We have people at the plant level who report to us, and we support the plant energy teams with resources, common systems, and best practices. We have the responsibility for capital expenditures for energy improvements. In the last three years, we spent about \$30 million on those projects. If you run energy as a business, you're really focused on making conservation happen and can leverage your efforts rather than relying on each plant and hoping they will deliver results. It takes a business approach and operation to drive this home."

STARTING YOUR ENERGY PROGRAM

FOR EXAMPLE, **Raytheon** established an energy awareness month as the launch pad for kicking off its program. “Each site picked a day during the month and held an event,” says David Chamberlain, principal energy engineer at Raytheon. “We focused on employee awareness of energy savings at their homes, since people tend to be more interested when they’re paying the bill. We teamed up with Lowe’s® and local utilities, and people came out in droves to find out about energy-efficient appliances and weatherizing their homes.” During the events, Raytheon’s corporate energy team identified local energy champions to form a network of plant people who know the equipment that might be wasting energy.

The experience of organizations with successful energy programs reveals that careful planning and effective outreach at the launch of the program creates momentum for the energy team. Successful program launches have involved:

- **Planning** – Prior to any official launch, the energy director should prepare a briefing on the benefits of energy efficiency, the proposed approach, and a list of potential members of the energy team.
- **Presentations to Senior Management** – The energy director, with the support of a senior energy champion, should brief senior management.
- **Team Strategy** – A series of meetings of the energy team to prepare for the program’s official launch should be held. The team should consider initiatives to highlight, such as a successful pilot project that could be showcased at the program’s kickoff. A pilot project with a short payback period can provide credibility and real-world evidence of actual dollar savings.



- Organizational kickoff – A formal event (perhaps even a webcast) that involves senior management announcing the formation of the energy team network and introducing the energy director helps to create credibility for the energy program. If this event will be the first time that the program goes live, it also provides an opportunity to unveil the energy policy. As additional real-world proof of the importance of energy management, a guest energy director from another organization could be invited to make a presentation on its energy successes.



FOR EXAMPLE, the energy team at **California Portland Cement** meets every six weeks, each time at a different plant on a rotating basis. “During our initial audit, we learned about energy improvements that we are now applying at other plants,” says Stephen Coppinger, “such as putting new timer cards in dust collectors, which save compressed air. And, instead of repairing old, less efficient motors, we’re looking at our purchasing policy on premium energy-efficient motors.”

ENERGY TEAM PLANS

At the first meeting of the corporate energy team, a schedule for future meetings is established. How frequently the team gets together varies from organization to organization, but monthly meetings appear to be the norm. As communication channels, meetings are superior to emails, which may tend to be ignored. Multinational organizations might conduct monthly team meetings by conference call or webcast, with face-to-face meetings held on a quarterly or annual basis.

At the meetings, the team members report on their progress on assigned tasks and provide monthly reports on energy use so that the team can build up data. The meetings also offer opportunities for presentations on best practices by in-house and outside technical and operational experts. In addition, members can network with each other, learn about key contacts, and share problems for which the other attendees might be able to offer potential solutions. Meetings also are a mechanism for linking facilities so they can replicate best practices and thus avoid reinventing the wheel.

Each year, the energy team should develop an action plan for the year ahead, with activities to be conducted. In this way, the team becomes proactive in planning its time and ensuring that projects are funded.

FOR EXAMPLE, **General Motors’** corporate energy team meets every month with plant energy engineers via webcasts. The plant-level energy teams meet weekly, and internal sharing of information at the plants occurs on a continuous basis. Real-time electric load profiles at the sites, for instance, show the level of energy efficiency achieved during weekend shutdowns. By comparing those readings with the plant’s benchmark level, the performance for that week is determined. The energy team network shares information on a weekly, monthly, quarterly, or annual basis, depending on the level of detail needed. “We can tie it all together because our program is a business,” says GM’s Kamesh Gupta, “not just a staff organization.”

ENGAGING FACILITIES

The energy team and technical experts conduct assessments at facilities by performing a physical walk-through to find energy-saving opportunities. The energy team will need to recognize that they will be competing for time and attention against the business of the facility. However, assessments are a powerful tool for involving facilities in a nonthreatening way and encouraging their buy-in.

During the assessments, energy team members may see best practices in action, so the audits are a hands-on learning opportunity for gathering practices and technology to transfer. After a week-long assessment, the members write an in-depth report, which might run as long as 300 pages. A summary is circulated internally on the intranet or published in the organization's newsletter.



*FOR EXAMPLE, **Eastman Kodak** conducts quick energy assessments called “kaizens,” a Japanese term for “take apart and make new for the good of others”—used for identifying and implementing rapid solutions that do not require large capital investments. A compressed air kaizen, for example, might involve fixing leaks. A lighting kaizen might require ensuring that fixture controls are actually programmed for the correct “time of day schedules.” Another kaizen may involve fixing a faulty steam trap that is costing the company thousands of dollars per year. The kaizens raise questions about operations, such as whether a compressed air system should be run at 100 pounds per square inch when 80 psi would do. “In energy management, there is not one big elephant that saves the day,” says Kodak’s George Weed, “but a lot of small- and medium-size things that add up to big savings. The achievements involve improving the efficiency of the HVAC [heating, ventilating, and air-conditioning] system, right sizing equipment, and adjusting time-of-day electricity rate schedules.”*

FOR EXAMPLE,

“At facilities where we are making the same product at each and every shift,” says **Owens Corning’s** Fred Dannhauser, “we got some mileage by creating a competition once we were better able to measure energy use.” If Shift A consumed less energy than Shift B, for example, the second shift decided to be more conscientious so they could win. “First, we had to have data that would stand the test of integrity,” Dannhauser cautions.

DO: “Deliver the goods” by ensuring that responses to suggestions from plant workers are positive and prompt and that results are obtained quickly.

DO: Prioritize the actions and improvement that should take place first and that will lead to early success.

DO: Suggest schedules and timelines to ensure that recommendations will be implemented.

DO: Leverage existing assessment methods and problem-solving techniques employed by your company.

FOR EXAMPLE, **Toyota** also conducts kaizens, plus three-day assessments called treasure hunts. The hunt begins on a Sunday to see whether equipment is shut off, continues on Monday and Tuesday to look at production startup and shutdown. At the closing meeting on Tuesday, the team presents ideas and cost savings to the plant managers. The participants, gathered from Toyota’s other plants, frequently take some of the ideas back to their own plants, so it is not just the host facility that benefits. Toyota’s Bruce Bremer adds, “As part of our cycle of kaizens, we also build energy reductions into the design of new plants so the improvements don’t have to be done later.”



BUILDING CAPACITY

Two essential components of your organization's energy management program are:

- Mechanisms for tracking and communicating progress; and
- Informal and formal tools for transferring that information to managers and workers.

Systems that track energy performance, implementation of best practices, and progress toward goals are also effective tools for evaluating progress and communicating successes. A second key element is a knowledge management system or best practices database. The sophistication of this tool can range from a database published internally on the organization's intranet, or spreadsheets and electronic charts provided to facility managers and engineers only. Case studies on successful projects can be published on either tool, with information on the relevant contact persons.

ENERGY STAR provides a tool for tracking, normalizing, and benchmarking energy use in buildings over time. To use this tool, see ENERGY STAR's Portfolio Manager. Also available are ENERGY STAR's energy performance indicators (EPI) for plants in select manufacturing sectors. The indicators enable energy comparisons of a plant's energy efficiency to that of its industry. All of these tools are available at www.energystar.gov.

FOR EXAMPLE,

General Motors

uses a scorecard to track performance at each plant. The GM 2100 data-gathering system contains a built-in mechanism for generating charts that compare energy use at the facilities on a monthly and quarterly basis.



FOR EXAMPLE, Toyota sends out monthly reports on targets versus actuals for the plants as a whole, monthly reports by shops (paint shop, plastics shop, weld shop, etc.), monthly productivity reports on energy use by unit of production, monthly reports on nonproduction energy use over weekends and between shifts, and annual summary reports that are sent out to all plants. "We go through the reports with the president for North America on a regular basis," says Toyota's Bruce Bremer. "He receives the reports for North America as a whole and for each plant."

FOR EXAMPLE, **Frito-Lay** holds a three-day energy summit annually for all members of the energy team, key plant personnel, and selected service and product provider partners. Other organizations, such as **United Technologies Corporation** and **GlaxoSmithKline**, hold annual two-day energy summits.

TRANSFERRING KNOWLEDGE

Two powerful tools for informal training are energy summits and energy fairs.

Energy summits are usually annual get-togethers for technology transfer. The energy network gathers to exchange information on the program and best practices, and to discuss new project ideas. Energy summits also provide an excellent time to offer training and bring in outside speakers to discuss energy management issues.

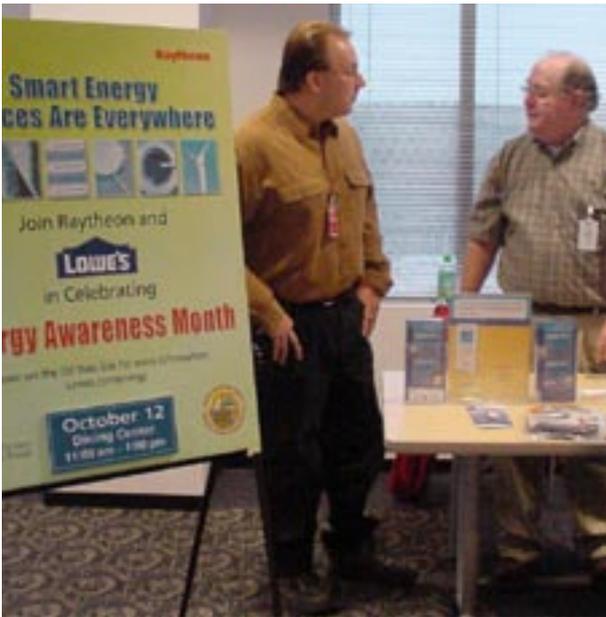
Attendees can include outside experts from another industry sector, voluntary program partners, consultants, and nonenergy corporate divisions such as environment, health, and safety.

At the summit, a senior manager could articulate the goals for the coming year and provide recognition for people in the energy team network. A workshop at the end could offer a forum for focusing on action steps.

For a multinational organization, the energy summit could be a global webcast. In other cases, companies might prefer to host the summit at corporate headquarters and facilities on a rotating basis. When held at a plant, the summit could include a walk-through to showcase successes.

Energy fairs and exhibitions are one- to three-day events for all employees, their families, and even neighbors to educate them about basic energy strategies for the home. Energy fairs normally are held at facilities and can include representatives from outside organizations, such as government or local utilities, to man the booths. The energy fair could be held in connection with Earth Day,

Energy Awareness Month (October), or in conjunction with “Bring Your Daughter or Son to Work” days. One approach is to work with your organization’s event planner to help stage the exhibition. The expected outcome is that employees’ increased knowledge will translate to a culture of energy efficiency in the workplace.



FOR EXAMPLE, to solicit energy project ideas, **Starwood Hotels** held a competition where the prize was a Porsche® Boxster convertible. The energy management team received more than 200 suggestions.

FOR EXAMPLE, Hines is always looking for a thoughtful, diplomatic way of fostering healthy competition among its properties. But, in the meantime, the company is alert to opportunities for saving energy that develop out of satisfying needs expressed by tenants. When one tenant complained about noise near the air-handling rooms, Hines considered sound-deadening technologies, but found instead that installation of variable frequency drives on the air-handling units would solve the problem while also cutting energy use in half.

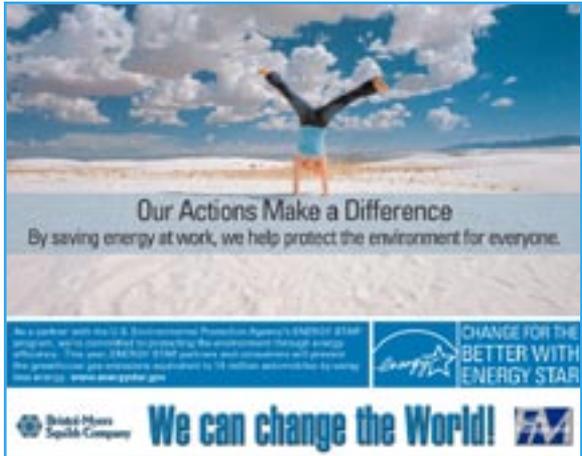
OTHER TOOLS FOR RAISING AWARENESS

Posters, intranet sites, surveys, and competitions are additional tools for informally raising awareness of energy efficiency and transferring knowledge. Attractive and informative posters and intranet sites keep the energy program vividly in front of people's eyes and educate them at the same time.

DO: Consider conducting a short survey or questionnaire that polls the entire workforce or a sample subset of employees to raise energy awareness and gauge employee attitudes toward energy efficiency.

DO: Hold contests to build interest and keep the energy program fresh.

DO: Use free ENERGY STAR Partner and Employee Awareness poster templates to help raise awareness of your energy program.



FORMAL TRAINING

Investing in training that promotes employee development helps ensure the success of the energy program by building overall organizational capacity. Informed employees are more likely to contribute ideas, operate equipment properly, and follow procedures.

Formal training can be targeted to address specific energy management issues and transference of skills, and it also can be used as an opportunity to gather feedback. Training can be conducted at a particular site, or it can be organization-wide. Consider whether the participants should include a mix of departments and a mix of managers and other employees. Including managers can demonstrate organizational commitment but might inhibit discussion.

Training that promotes the professional development of key energy team members sustains the success of the corporate program. Organizations such as the Association for Energy Engineers offer a one-week course that qualifies successful participants to become certified energy managers. Some utilities and community colleges offer specialized training, such as the Building Operator Certification for building managers.

FOR EXAMPLE,
Owens Corning,
by educating its employees, improved the operation of air dampers in order to use less air and natural gas during the incineration process, reducing energy consumption for incineration by 10 percent. Training paid off big time.

EPA offers several opportunities to keep abreast of energy issues. Web conferences on energy management featuring ENERGY STAR partners are held monthly. ENERGY STAR Focuses identify and reduce barriers to energy efficiency in specific sectors through technical guidance, performance indices, and meetings. In addition, online training in ENERGY STAR sector-specific tools, such as Portfolio Manager, is free and is offered regularly.

DO: Training that is interesting and fun is more likely to stick with nonenergy team employees.

DO: If you use a professional instructor, avoid overscheduling the person's time, lest the sessions begin to sound canned.

DO: Consider training specific individuals to become technical experts in key equipment and facility utilities that affect energy use, such as HVAC systems and compressed air.



OUTSOURCING AND SERVICE PROVIDERS

Outsourcing to external consultants to perform maintenance and metering to gather data can sometimes have certain advantages. For example, if your organization has insufficient in-house staff to perform regular maintenance of steam traps, it can make sense to hire a consultant. Outside eyes also can catch inefficient practices that are often overlooked by company employees or even by the energy team. Using third-party consultants and service providers can be especially effective when conducting assessments and technical audits.

If outsourcing is your choice, watch out for certain pitfalls. Consultants and service providers should not become the master of the knowledge, leaving no expertise within your organization. To avoid that, make the outsourcing company a true partner and team member. Remember, when meaningful performance metrics, incentives for good performance, and penalties for lack of performance are established, there is a common set of expectations that can reduce problems.

DO: Consider outsourcing turn-key projects, such as lighting upgrades, that are easily replicated and monitored across multiple sites.

FOR EXAMPLE, Owens Corning hired a consulting company that placed project managers in the plants. Some are experts in process improvement, others are energy experts. "We believe that when you have people on staff, they have a tendency to be pulled in a hundred different directions," says Owens Corning's Fred Dannhauser. "We couldn't get enough traction without getting a resource dedicated 100 percent of the time for a certain period. But we didn't necessarily need someone in that role forever, just while we addressed the backlog of projects. Whether you use outsiders is not as important as using someone who is really going to dedicate time and who will be held accountable for reducing energy consumption. We kept the charges for the project managers at the corporate level, but the plants did the implementing."

CROSS-COMPANY NETWORKING

Active participation in industry and energy-focused associations can provide a way to share program experiences and results, as well as to learn from others. Speaking engagements at industry events are an effective way to share your organization's successes and motivate others to improve energy performance.

Exchange of information and ideas on energy efficiency within and across industrial and commercial sectors and from ENERGY STAR can translate into significant cost savings credited to your organization's energy management program.



*FOR EXAMPLE, **Eastman Kodak** leveraged its partnership with ENERGY STAR to look into saving energy on exhaust hoods in laboratories. "I sent out an email and got five or six notes back," says Kodak's George Weed. "We learn from each other all the time. We just did a two-day benchmark exercise with **Toyota**, with a day in each plant, and we learned a lot from them and them from us. So now we're sending a person to participate in a Toyota energy treasure hunt in California. Then after that, they will be helping us with an energy assessment."*

*FOR EXAMPLE, **California Portland Cement** learned from ENERGY STAR about a U.S. Department of Energy-funded research project on energy-efficient motors. The project provides rebates, so the cement manufacturer will receive a number of new motors gratis in return for providing readings to the researchers four times per year.*

SUSTAINING THE TEAM

Keeping the energy management program alive and fresh is perhaps the greatest challenge. Sustaining the program requires ensuring that managers and employees are aware of the results. Maintaining motivation also may entail offering recognition and rewards.

SITUATION:

- Your organization's program has lost momentum, and poor energy habits are creeping back in.

SOLUTIONS:

- Energy efficiency needs to become a part of the culture of your organization, integrated into its management systems, so that the energy program is self-sustaining and not just a flash in the pan that is vulnerable to cost-cutting.
- The action plan's communications strategies should celebrate successes and target key audiences, including staff, stakeholders, and customers.
- A system of incentives, including individual- and team-focused recognition, can encourage staff to improve performance.

FOR EXAMPLE, Hines'
Jim Green says the biggest challenge is sustainability. "Our mission is to keep repeating the message and educating our tenants on the advantages of energy efficiency, and standing ready to deliver when they're ready to go forward."



FOR EXAMPLE, Vincent Gates, energy manager at Merck & Co., Inc.'s facility in Rahway, NJ, says, "Creating a unique name and logo is critical for building awareness of your program and marketing it effectively. We include our program logo and the address of our internal energy web page on all energy communications. We have begun adding the phrase, 'Merck is now an ENERGY STAR Corporate Partner,' and including the ENERGY STAR logo as well. The greater recognition of the ENERGY STAR logo has caught employee interest and helped to increase recognition of our program."

EFFECTIVE COMMUNICATIONS

Publicizing the results of the energy management program helps to integrate it into the organization's culture and foster organizational pride. If you have a good thing going, let others know.

Getting across the benefits of saving energy and the results of your program takes effective communications skills.

Possible newsletter subjects include facility achievements and brief summaries of assessment reports. You may be able to link your news to corporate or world events. Also consider asking your organization's public relations department for advice on your communications plan.

Methods for communicating results include internal progress reports, reports on assessments, emails, pay statement mailers, and publications such as newsletters, magazines, videos, the organization's intranet, posters, flyers, energy calendars posted on bulletin boards, and meetings and conferences.

For celebrating successes externally, press releases and the World Wide Web are your best bets.

DO: Promote your energy program by using the ENERGY STAR Partner mark in conjunction with your logo.

DO: Pace your delivery of good news and always have something worthwhile to say.

DO: Tailor your messages and communications for your different target audiences, such as management, employees, and outside stakeholders.

DO: Promote the program at a grassroots level by educating employees about your organization's partnership with ENERGY STAR.

RECOGNITION AND REWARDS

Recognizing the contributions of teams and individuals helps to reinforce the value of energy efficiency and encourage even greater improvements. Acknowledging successes will help sustain motivation. Verbal appreciation, simple forms of thanks ranging from coffee mugs to formal written commendations and certificates, plaques presented at award ceremonies, salary increases, and stock options can all act as motivators.

Consider recognition to individuals, departments, teams, and facilities. Look at incentives from the point of view of employees and ask: "What's in it for them?" Ensure that all recognition and rewards are equitable and based on published criteria. You may choose to recognize the best energy-saving ideas, the greatest reductions in energy use, and savings increased by "x" amount.

FOR EXAMPLE,
Food Lion's Energy Awareness Plan rewards maintenance staff by awarding quarterly bonuses for improving energy performance. Keeping maintenance staff motivated to save energy has helped Food Lion reduce its utility cost per store per week by 5.5 percent.

FOR EXAMPLE, EPA recognized **3M** with the 2005 ENERGY STAR Partner of Year Award for Sustained Excellence. For the past five years, 3M has reduced its energy use by 4 percent annually across all facilities for more than \$190 million in savings.

EXTERNAL RECOGNITION

External recognition from a third party (government agencies, nonprofits, the media, and trade associations) validates the importance of the energy program, provides satisfaction to those who earned the award, and enhances your organization's public image. A solid reputation contributes to your organization's competitive advantage by making it more attractive to customers, current and potential employees, lenders, and business partners.

Awards, particularly from an outside organization, are one of your most powerful tools for persuading senior management to support the energy program. Besides creating a sense of ownership by the corporate officer, the award attracts media attention and positive PR for the organization.

ENERGY STAR brings credibility to an organization's energy management program. Once an organization wins an ENERGY STAR award or earns the ENERGY STAR for a facility, it becomes an unquestionable symbol of commitment to achieving excellence in energy performance.

DO: Invite corporate officers to accept awards at high-profile industry and government conferences.

James T. Mahan, senior vice president—engineering for 3M, accepts an ENERGY STAR Award for Sustained Excellence—Energy Management from EPA's Kathleen Hogan at the 2005 Partner of the Year Award event.



MAINTAINING MOMENTUM

One test of whether your organization's energy management program is successful is whether the energy director would be replaced if he or she left or was promoted. Another test is whether your organization's energy use is showing continuous improvement despite changes in key personnel.

DO: Recharge commitment by reviewing and updating your organization's energy policy to ensure that it is not just regarded as corporate wallpaper.

FOR EXAMPLE, between 1997 and 2004, **Toyota** decreased energy use per unit of production (cars going out the door) by 20 percent for all its North American plants. "Everyone has responsibility for improving the environment," says Toyota's Bruce Bremer, "not just at work, but also at home."

SITUATION:

- The energy director has been promoted to another position or the senior manager who served as the program's champion has retired. The new senior manager lacks a personal commitment to energy efficiency.

SOLUTION:

- The organization's energy management program should contain a built-in plan for succession, such as a provision for the energy team and organization executives to select a new energy director.



FOR MORE INFORMATION

Participation in ENERGY STAR presents an excellent opportunity for an organization to benchmark itself against peers, reduce costs, and improve and gain recognition for its voluntary energy efficiency accomplishments. Producing an energy management program with results that the entire organization can be proud of can lead to recognition for the team and management respect for the energy manager.

EPA's ENERGY STAR program offers the following information and resources for creating effective teams:

- Sample briefings
- Financial analysis calculators
- Communications materials
- Tracking and benchmarking training
- Technical guidance
- Networking
- Access to energy professionals

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