

Building a strong pollution prevention or energy team

Involving employees throughout a facility in a pollution prevention or energy efficiency team can lead to significant savings. Team members can help companies meet waste reduction or energy use goals by brainstorming, selecting projects, and implementing solutions.

A company's most valuable resource is often its employees. These employees are often a great source of information and improvement ideas. A pollution prevention or energy efficiency team can be an effective strategy for harnessing the creative potential of employees for problem solving.

Teams may be put together for short-term problem solving or to address a specific problem or concern, such as avoiding an impending water surcharge or increased energy costs. Often, teams are successful at meeting goals toward reduced waste or energy use. Teams also work well as part of continuous improvement, where the company encourages everyone within the facility to contribute improvement ideas on an ongoing basis.

A team environment within a facility can promote interactive, creative problem solving. Some outcomes of teamwork include:

- **Innovative ideas.** Team members may build ideas from each other and develop creative solutions together.
- **Diverse perspectives.** Suspending the corporate hierarchy in a team gives members a low pressure forum for communication. New viewpoints can supplement or challenge traditional assumptions.
- **Keys to future solutions.** By using teams for problem solving, companies are better prepared to solve future problems. Team members learn how to implement changes and work with other departments.

This fact sheet provides details about developing and using a team to address your pollution prevention and energy efficiency goals.

Team Composition

When determining who should participate in the team, it may be important to look at the organizational structure of the business. In an ideal situation, staff members from various departments would be selected for the team. A representative from management should be encouraged to attend and participate in team meetings on a regular basis.

Limiting your team to five to seven members may make it more manageable and effective. However,

on occasion, you may want to bring in others who have an interest in and knowledge about the issue the team is addressing. People who are enthusiastic and hard-working make good team members.

The following list is of key areas within your business where you may recruit team members and what each could bring to the team:

- **Accounting:** Cost information associated with toxic chemical use, waste generation, and energy use, as well as financial impacts.
- **Engineering/Design:** Information about manufacturing products and processes, redesign ideas, and implementation feasibility.
- **Finance:** Cost-effectiveness and payback information for capital-intensive projects.
- **Health and Safety:** Employee health concerns and training information regarding new chemicals or processes.
- **Maintenance:** Information on current practices and preventive maintenance schedules as well as information on feasibility of projects.
- **Production:** How current production practices generate waste and use energy as well as energy conservation and waste reduction ideas.
- **Purchasing:** Assistance with measuring reductions by tracking raw material purchases and ideas for new purchasing procedures.
- **Research and Development:** Ideas for developing and using new technologies that will help achieve the team's objectives.
- **Sales:** Marketing advantages associated with new or modified products as well as customer feedback on proposed alternatives.

Once selected for the team, these members would be responsible for bringing issues to meetings that are important for the area they represent.

Companies have also involved vendors or utility representatives in team meetings. These people can bring information to the team meetings such as new chemical formulations, new technologies, or rebates available. Also, the representatives may have worked with other customers on similar projects and can share success stories.

Team Roles

Each member of the team should play a clearly defined role to ensure success. These roles and responsibilities should be defined at one of the initial meetings.

- **Team leader** delegates tasks, presents background, and sets the agenda. It is a good idea to have a member of top management, such as the plant manager, act as the team leader. He/she can provide the authority to implement change and may be the person responsible for requesting capital needed for projects.
- **Facilitator** keeps meetings on track and enforces meeting ground rules.
- **Technical expert/engineer** has knowledge of the facility and can help devise realistic specifications for proposed changes.
- **Recorder** documents brainstorming, discussions, and other relevant team activities; prepares meeting minutes.
- **Discussion participants** provide balanced contributions and are willing to participate in discussions and respect ideas.

Productive Team Meetings

Teams can require a lot of time, both in meetings and then following up on the work identified in the meeting. Therefore, you'll want to ensure that your team members are prepared for the meetings and that each meeting is productive. To do so, determine the basic goals and priorities of the meeting in advance, so that everyone knows how to prepare for a meeting. Create a detailed agenda, allotting time for each issue and balanced participation. Notes from previous meetings can be used to create the agenda.

Teams should meet for no less than one hour every month. Some teams may want to meet as often as two to four times a month. Allowing work time for team meetings shows a company's commitment to improvement.

Establish Goals

The team will want to determine what the overall goal is, whether it is to reduce waste, energy use, or meet corporate goals for pollution prevention and energy efficiency. It may also be important to set short-term as well as long-term goals for teamwork or project implementation. Timelines are also beneficial for both the team as well as projects.

Brainstorm Solutions

Brainstorming is a critical component to determine what waste reduction and energy efficiency problems exist in the facility and what are the opportunities for conservation. Teams may want to develop their own rules, but the following examples can help jump-start productive brainstorming sessions.

- Any and all ideas are valid.
- Don't discuss or judge ideas during brainstorming.
- Build on the ideas of others.
- Write down every idea so that all members can see them.

Ask open-ended questions during brainstorming. The following questions can be addressed in a waste reduction scenario.

1. What is the waste?
2. Where is the waste created?
3. Why is the waste created?
4. When is the waste created?
5. What can be changed to reduce the waste?

After brainstorming is complete, prioritize problems relative to their impact, cost, and complexity. The most effective decisions are made by consensus because they have the team's full support. A simple way to prioritize a large list is to have each group member vote for their favorite three items. Tasks can be delegated according to each member's expertise and interest. Make sure that no one gets either too much or too little to do.

Teams may want to use decision-making tools, such as cause-and-effect diagrams or material/mass balances, depending on the complexity of the problem.

Implement Projects

Once projects have been prioritized, it is time to begin implementing them. Involve all team members in implementation and ask them to explain new processes or procedures to staff members in their area. Be sure to record changes made and the effects those changes have had, such as energy or water saved. Those numbers will help justify the time associated with a team and can provide a basis for continuous improvement ideas. The savings can also serve as a basis for celebration. Once the first project has been implemented, return to the prioritized list of projects and take on the next, potentially bigger project.

Team Evolution

Before reaching its potential, a team grows through stages.

1. A **forming stage** is characterized by members being both excited and hesitant. Excited to be a part of the group but hesitant due to unknowns about work load and responsibilities.
2. A **storming stage** where tasks appear larger and more time-consuming than expected. Members may feel anxious and frustrated as little progress is made because they still focus on their own strengths and weaknesses as they get to know each other better.
3. As more communication takes place, a **norming stage** develops when the team starts to function as a cohesive unit. Individual skills, experiences and creativity are recognized and used to help solve problems. Things start to happen. Encourage participation; inevitably there will be some members that are more dominant. It is the facilitator's role to make sure all team members pull back at times and allow everyone to be heard.
4. In the **performing stage**, team goals are being met and results become visible to the whole organization because team members have learned to rely on and support each other during the problem solving process.

Some teams take months to get on track, while others develop within a meeting. Teams should meet for at least a year or until the identified goals are met. When a team has met their goals, both short- and long-term, it is time to celebrate and recognize success. Posting results, presenting awards, profit sharing and bonuses all help keep employees motivated.

Company Examples

MnTAP has worked with a number of pollution prevention and energy efficiency teams. MnTAP's role is often to train team members on pollution prevention, energy efficiency, and team work strategies as well as provide technical assistance.

Fairview Health Services, Minneapolis

The Fairview Green Committee formed in early 2009. The team has representation from each major Fairview facility and is comprised of vice presidents, managers, directors, nurses, environmental services, and a variety of other personnel. It serves as a system-wide council and leadership group that defines goals and promotes practices consistent with the company's environmental policy for waste reduction and energy savings.

The team is investigating opportunities to minimize waste by using the Lean process, reprocessing single use devices, reducing paper, managing waste, and implementing environmentally preferable purchasing. Working through the Lean process has reduced the on-hand inventory levels and minimized product expiration. Additionally, a project encouraging paper reduction has featured duplex printing, printing only when needed, using handout print features, and reducing printing color copies.

Another successful greening effort of the Fairview Green Committee has been holding monthly team meetings as conference calls as opposed to in person. This has saved an estimated \$5,000 for every meeting in travel time and costs, and eliminated approximately 500 lbs of greenhouse gas emissions per meeting associated with commuting.

Pepsi Bottling Group, Bloomington

To help meet the company's energy efficiency goals of reducing use by 2.2 million kWh, Pepsi Bottling Group formed a team in Fall 2008. The plant manager served as team leader while other team members from quality, maintenance, and the production line joined in the ongoing problem solving process. The plant and production managers also participated in the team.

Over a nine month time period, the team at Pepsi Bottling Group worked with MnTAP to identify and quantify opportunities for energy use reduction. These opportunities have been both process and procedure related and included addressing blower, air, and chiller shutdown procedures as well as total plant shut down procedures. Making the changes within the facility has saved approximately \$14,000.

Harmony Enterprises, Inc., Harmony, and Valley Design, Fountain

Team efforts at both Harmony Enterprises, Inc. and Valley Design investigated savings opportunities in energy-using systems, such as compressed air, and made improvements to initiate their application for the U.S. EPA's Green Suppliers Network (GSN). Being part of the GSN gives businesses increased visibility as a continuously improving business entity. Both companies are working toward energy conservation goals and are insulating boilers and condensate return lines.

The team at Harmony Enterprises in Harmony is investigating installing a new paint booth with variable-frequency drive fan control and high-velocity, low-pressure nozzles that could potentially save the firm over \$10,000 annually.

Valley Design's team in Fountain reduced annual energy use by 200,000 kWh by upgrading facility lighting systems. This upgrade saved the company almost \$20,000.

The two companies suggested and evaluated a total of 14 projects that met their guidelines for applying to be GSN members.

AMPI, Dawson

The Associated Milk Producers Inc. (AMPI) plant needed to reduce water use and cut the amount of solids in its wastewater. Therefore, a team was formed based on members' willingness to participate and ability to make sound decisions for the company.

The waste reduction team routinely toured the plant floor looking for areas to reduce waste. At team meetings the group developed and selected waste reduction strategies using a variety of tools. Waste reduction opportunities were prioritized based on the amount of waste created, how much it cost the company to manage and the cost of improvements. When strategies required new equipment purchases or a large investment, the team evaluated all associated costs before deciding how to proceed.

The team saved the company \$60,000 in its first year by installing new equipment, changing procedures, and improving processes.

For More Information

For more information on waste reduction teams, see the manual *Source Reduction Now: How to Implement a Source Reduction Program* available at <www.pca.state.mn.us/oea/p2/srn.cfm>. MnTAP also offers a pollution prevention planning guide that highlights teams and their success at <www.mntap.umn.edu/prevention/p2guide.pdf>.

Sources

Employee Involvement Team, Member Manual, Donald L. Dewar, QCI International, 1991, and The Team Handbook, Peter R. Scholtes, Joiner Associates Inc., 1992.



For More Information

MnTAP has a variety of technical assistance services available to help Minnesota businesses implement industry-tailored solutions that maximize resource efficiency, prevent pollution, increase energy efficiency, and reduce costs. Our information resources are available online at <mntap.umn.edu>. Please call MnTAP at 612.624.1300 or 800.247.0015 for personal assistance.