

THE STARTING POINT FOR SUSTAINABLE PRODUCTION

Energy audits help identify real solutions for optimizing utility usage and improving profitability.

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>> Progressive managers know that developing a sustainability-driven business model isn't just socially responsible — it's financially essential for staying competitive. Many of these same companies are overwhelmed with questions about where to start. An energy audit is an excellent starting place.

A "classic" energy audit monitors a facility's utility spending by tracking all water, air, gas, electric and steam (WAGES) usage. The information gathered from the audit then helps companies identify the changes they can make to help reduce their consumption and improve profitability.

If your company is using any WAGES resources, an energy audit can help you defend your business against economic and regulatory risk. The financial risks of cost variation are well known; the regulatory risks are newer and ever increasing. For example, San Francisco voters approved a tax on local businesses of 4.4 cents per ton of emitted carbon dioxide in May 2008, setting a precedent for instating carbon fees in the U.S.

How Does it Work?

It's important to know that an energy audit isn't a one-time project. Audits should be conducted on a regular

basis to identify how seasons might affect resources, where surges and inefficiencies arise, and what changes to the manufacturing process are impacting WAGES consumption.

Next, set the scope of what should be tracked, what the metrics will look like, and what the key performance indicators (KPI) will be. Some facilities might not want to look at all of the WAGES; some might want to focus just on electricity consumption. Others might want to focus only on their office facilities, not the manufacturing process. Still others might want to do a completely comprehensive audit, taking WAGES use into consideration as well as other key components of sustainable production such as the company's waste stream, product safety and workplace safety.

Identify a team that represents each area impacted by the audit. The team should include at least one person who is intimately familiar with plant operations, the facility manager responsible for maintenance and utilities, and an internal sustainability champion or health, safety and environmental (HSE) representative.

With a team in place, a Certified Energy Manager (CEM), who has successfully completed his/her CEM

certification exams administered by the Association of Energy Engineers (AEE), can begin to complete an in-depth analysis of the facility's current energy usage. Using data collected on-site from the in-house team and a comprehensive review of all utility bills for the past two years, the CEM can generate an analysis output document that provides a broad, high-level overview of the company's current energy usage.

After the current usage has been identified, the CEM and the in-house team should spend several days touring the facility to identify where energy-saving opportunities exist. This walking tour generally produces three types of energy-saving solutions:

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1. Behavioral Changes. Behavioral changes are simple, low- or no-cost solutions that can significantly impact the bottom line.

2. Programming Changes. Programming changes are relatively low-cost changes to the facility's energy-consuming assets that can provide a quick payback. On the plant floor, these changes can take the form of improving controls or upgrading older equipment for more effective use of WAGES resources.

3. Capital Investments. Capital investments can range from boilers with advanced process control that help optimize fuel usage, to installing solar panels or other alternative energy systems to power manufacturing machinery, to building an entirely new, more sustainable plant. While

these are the most expensive options, the long-term return on investment also can be the most rewarding.

Once utility-saving solutions have been identified, the final step in the energy-audit process is to prioritize, implement and continue to execute the suggested changes. While many companies will maintain the solutions put in place for a few months or even a year, the most successful will examine and monitor their WAGES consumption on an ongoing basis to optimize their usage and related cost savings.

Then What?

Instead of putting energy-monitoring solutions out of sight and out of mind, forward-looking companies can use an energy audit as a launching point for a comprehensive energy-savings initiative. By installing a dashboard that drills into the WAGES consumption of each aspect of production on an ongoing basis, you can obtain a top-to-bottom view of your utilities expenditure and make ongoing tweaks to your processes to optimize usage. In many cases, you can use this information to identify relatively simple changes that can help impact your bottom line in a real and meaningful way.

Sustainable production is a critical business imperative. While true manufacturing sustainability encompasses such aspects as workplace safety, product safety and waste-stream management, one of the most compelling places to start is by conducting an energy audit to review your company's WAGES use. The benefits in goodwill and cost savings are well worth the investment. □

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