Key Places to Look for Energy Losses

Grainger can help customers reduce costs and operate more sustainably through its green products and services offerings in four main areas: managing energy usage, conserving water, reducing waste and improving indoor air quality. Extensive work with a variety of customers and suppliers has shown that a significant amount of energy loss is actually temperature related.

Many systems and pieces of equipment manifest wasted effort and energy in terms of heat. Motors, pumps and electrical boxes generate heat and can lose energy efficiency as they begin to fail. Building owners, building managers and/or facilities engineers should inspect the following systems to identify potential energy losses:

1. **Heating, Ventilation and Air Conditioning (HVAC) Systems:** The HVAC system is usually one of the biggest areas of energy consumption within a facility. For example, a loose or corroded connection increases resistance in an electrical connection and can result in overheating. Even the highest rated HVAC system wastes energy without a well-sealed duct system.

   a. *What to Scan:* Ductwork and registers, fans and blowers, and electrical connections.

   b. *Anticipated Savings:* Commercial buildings with constant-air volume systems can experience energy losses from air leakage, so duct-sealing and insulation remedies can help achieve savings.

2. **Motors and Generators:** Electrical motors can use a significant amount of energy in a facility. Overheating and malfunctioning motors and generators tend to indicate mechanical or electrical inefficiencies that can lead to greater energy use and ultimate failure. Since generators are, in a sense, “reverse motors,” diagnostics are similar for both kinds of units.

a. *What to Scan:* Airflow, electrical unbalance, bearings, insulation and electrical connections.

b. *Anticipated Savings:* With motors and generators, specific energy losses are usually of less consequence than failure of the unit. So, keep motors well-maintained and operating at maximum efficiency. Also, make sure motors are sized appropriately and operate at constant speeds.

3. **Electrical Systems:** Many people do not realize that electrical systems can actually waste money. As components degrade and resistance increases, incremental waste can occur.

a. *What to Scan:* Distribution panels, transformers and lighting control circuits.

b. *Anticipated Savings:* While complete retrofits of lighting systems can produce significant returns on investment, keeping lighting controls (time clocks, photo sensors, occupancy detectors, etc.) operating properly will help save energy.

This is a small sample of energy conservation ideas. To celebrate Earth Day, Grainger is inviting facilities maintenance operators to share their best practices. Visit W.W. Grainger Inc. on Facebook [1] to discuss energy conservation ideas with Grainger and its fans.

*These tips are excerpted from "*Top Five Places to Look for Energy Losses in Commercial Buildings [2]*," written by Fluke Corp. and published on SupplyLink.com, April 2009. Visit SupplyLink* [3] *for the complete article and other industry insights. For more information, please visit* www.grainger.com *[4].*

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