



How to Conduct Your Own Energy Audit

Many facilities have found that conducting an energy audit will result in significant benefits, including the discovery of energy inefficiencies and new ways to save on energy costs – perhaps as much as thirty percent – depending upon your facility’s energy-use scenario.

After evaluating the results of your audit, you may determine that a more detailed analysis is necessary. Your Nicor account executive can best interpret the information from your self-assessment and can assist with a more in-depth examination.

Steps to Conducting an Energy Audit

1. *Assign Responsibility:* In smaller operations, the business owner or facility manager may conduct the audit. For larger operations, an energy management committee may be necessary to perform the required work.
2. *Gather Energy Data:* Review your utility bills from the past year or from a typical twelve-month period. Also, look at data from your accounting and production records to find out which areas of your facility or operations may be using the most energy. Record the current rate structure, demand and consumption figures, and any other fees for natural gas, electric, and other fuels.
3. *Look at Your Building Systems:* Review manuals and drawings of building equipment and mechanical systems, motors, etc. to determine their type, size and age. Examine production reports and interview relevant staff to determine usage patterns, general condition, recent maintenance, etc.

In addition, you should gather the following information to help you complete the energy audit:

- Building design - square footage, location of doors and windows, type of insulation, operating hours, etc.
- Lighting - types of lights used, total wattage and operating hours
- Ventilation - the volume of air and size of motors relative to air make-up and exhaust systems
- Process Equipment - size and efficiency ratings of motors, refrigeration equipment, compressors and heat recovery systems
- Drawings of building architecture, electrical and mechanical systems
- Operation and production schedules
- Operating manuals and equipment specifications.

Now you are ready to begin your audit. Use the following checklist as a guide:

Energy Audit Checklist

Lighting:

- Is your facility using the most energy efficient lighting options (fluorescent, mercury vapor, etc.)?
- Are there areas that have excessive or unneeded lighting?
- Are you making effective use of available lighting, such as natural sunlight?
- Have you installed lighting management equipment such as dimmers, timers and sensors?

Building Envelope:

- Is the building well insulated?
- Does weather stripping around doors and windows need to be replaced?
- Are cracks around doors, windows and foundations properly sealed?
- Are there open doors around loading docks or other frequently accessed areas?

Heating and Cooling:

- Are furnaces, boilers and air conditioning systems operating efficiently?
- Is there a regular maintenance and update schedule for these systems?
- Are filters replaced regularly?
- Is the building properly ventilated?

Motors and Equipment:

- Is your equipment maintained so that it is operating at maximum efficiency?
- Is equipment load compatible with manufacturer specifications?
- Are machines shut down when not in use?
- Are fan belts at the proper tension and in good condition?

Energy Behavior:

- Are lights, fans and equipment (computer, printers, etc.) turned off when not in use?
- Are building temperatures set back when not in use?
- Are thermostats set to higher or lower than necessary in summer and winter?