

MAJOR STEPS OF ENERGY AUDIT

The following steps should be taken to conduct the energy audit, as appropriate to the facility being audited, and data should be entered onto the relevant worksheets:

1. Collect and review electricity and fuel use records for the facility; records for the previous 16 months are preferred.
2. Collect and review facility drawings showing details of electrical and mechanical systems as well as building construction details. Use drawings to find the size/type of systems used and level of building envelope insulating value.
3. Use information gathered as well as interviews with facility maintenance staff to determine age and general conditions of the facility and its systems. Determine, from interviews, if any major system or facility upgrades are planned or have been recently completed.
4. Physically inspect and record information on all large and small electrical appliances used in the facility. This should include, for example, computers, printers, photocopiers, refrigerators, small kitchen appliances and televisions. Try to determine the approximate number of operating hours per week. If not, make suitable approximation and take approval of the local representative.
5. Physically inspect and record information provided on electric motors in the facility. If the motors are integrated into equipments such as air conditioners or refrigerators, obtain information on the equipment. For motors that are not included with equipment, record motor information on the audit data sheet. For each motor, record sufficient information about motor size, duty and location to uniquely identify it. Also record information about how the motor is controlled such as simple on/off control or automatic control. If motor is in use, obtain running amperage at motor starter using a clip on ammeter if one is available.

6. Inspect and record information about all light fixtures in the facility. In each room or area that can be uniquely identified, measure and record the light level at working surfaces. In each area, determine the number and type of fixtures as well as fixture age, number of lamps and fixture control.
7. Inspect and record information on all individual unitary and split-air conditioners in the facility. Determine electrical load information or unit capacity or both. For small split systems, remember to obtain information from both the internal evaporator section and the external condenser/ compressor section. Also record information about unit location and if it is blocked by furniture or other equipment. Also record information about the thermostat setting, how each unit is controlled and the location of the controller.
8. Inspect and record information on central air conditioning systems in the facility. Record location, area served (sq.ft.), unit type and capacity, condenser location, ductwork size, unit controller type and location, condition of equipment, filters, ductwork and controls. Ask building occupants served by each system to describe the level of comfort provided by each system. Determine weekly operating hours of each system. Check level and condition of ductwork insulation.
9. Inspect and record information on fuel using appliances in the facility such as boilers, domestic hot water heaters, emergency generators and kitchen appliances. Determine appliance capacity, age condition and fuel consumption. Check the fuel storage tanks, piping systems, pumps etc. Look for signs of leakage or system restrictions or blockages that can reduce efficiency.
10. Inspect and record information about other electrical equipments such as elevators, water pumps, exhaust fans, domestic hot water heaters and transformers. Record information related to equipment age, condition, capacity and weekly operating hours. Also determine and record how the equipment is controlled.

