

Appliances

Energy Knowledge
Positively Correlates with
Key Energy-Saving
Activities



Typical Wattages of Various Appliances

Here are some examples of the range of nameplate wattages for various household appliances:

- Aquarium = 50–1210 Watts
- Clock radio = 10
- Coffee maker = 900–1200
- Clothes washer = 350–500
- Clothes dryer = 1800–5000
- Dishwasher = 1200–2400 (using the drying feature greatly increases energy consumption)
- Dehumidifier = 785
- Electric blanket- Single/Double = 60 / 100
- Fans
 - Ceiling = 65–175
 - Window = 55–250
 - Furnace = 750
 - Whole house = 240–750
- Hair dryer = 1200–1875
- Heater (portable) = 750–1500
- Clothes iron = 1000–1800
- Microwave oven = 750–1100
- Personal computer
 - CPU - awake / asleep = 120 / 30 or less
 - Monitor - awake / asleep = 150 / 30 or less
 - Laptop = 50
- Radio (stereo) = 70–400
- Refrigerator (frost-free, 16 cubic feet) = 725
- Televisions (color)
 - 19" = 65–110
 - 27" = 113
 - 36" = 133
 - 53"-61" Projection = 170
 - Flat screen = 120
- Toaster = 800–1400
- Toaster oven = 1225
- VCR/DVD = 17–21 / 20–25
- Vacuum cleaner = 1000–1440
- Water heater (40 gallon) = 4500–5500
- Water pump (deep well) = 250–1100
- Water bed (with heater, no cover) = 120–380

Source: EPA

Computers



If all computers sold in the United States meet the ENERGY STAR requirements, the savings in energy costs will grow to more than \$2 billion each year and greenhouse gas emissions will be reduced by the equivalent of greenhouse gas emissions from nearly 3 million vehicles.

Source: Energy Star



Power Management



To maximize power savings,

- EPA recommends setting computers to enter system standby or hibernate after 30 to 60 minutes of inactivity.
- To save even more, set monitors to enter sleep mode after 5 to 20 minutes of inactivity. The lower the setting, the more energy you save.
- On laptops, be sure to activate these settings in the AC power profile — not just the DC (battery power) profile.



When to Turn Off Personal Computers

If you're wondering when you should turn off your personal computer for energy savings, here are some general guidelines to help you make that decision.

Though there is a small surge in energy when a computer starts up, this small amount of energy is still less than the energy used when a computer is running for long periods of time. For energy savings and convenience, consider turning off

- the monitor if you aren't going to use your PC for more than 20 minutes
- both the CPU and monitor if you're not going to use your PC for more than 2 hours.

Make sure your monitors, printers, and other accessories are on a power strip/surge protector. When this equipment is not in use for extended periods, turn off the switch on the power strip to prevent them from drawing power even when shut off. If you don't use a power strip, unplug extra equipment when it's not in use.

Most PCs reach the end of their "useful" life due to advances in technology long before the effects of being switched on and off multiple times have a negative impact on their service life. The less time a PC is on, the longer it will "last." PCs also produce heat, so turning them off reduces building cooling loads.

For cost effectiveness, you also need to consider how much your time is worth. If it takes a long time to shut down the computer and then restart it later, the value of your time will probably be much greater than the value of the amount of electricity you will save by turning off the computer.

Power-Down or Sleep Mode Features

Many PCs available today come with a power-down or sleep mode feature for the CPU and monitor. ENERGY STAR® computers power down to a sleep mode that consume 15 Watts or less power, which is around 70% less electricity than a computer without power management features. ENERGY STAR monitors have the capability to power down into two successive "sleep" modes. In the first, the monitor energy consumption is less than or equal to 15 Watts, and in the second, power consumption reduces to 8 Watts, which is less than 10% of its operating power consumption.

Make sure you have the power-down feature set up on your PC through your operating system software. This has to be done by you, otherwise the PC will not power down. If your PC and monitor do not have power-down features, and even if they do, follow the guidelines above about when to turn the CPU and monitor off.

Note: Screen savers are not energy savers. Using a screen saver may in fact use more energy than not using one, and the power-down feature may not work if you have a screen saver activated. In fact, modern LCD color monitors do not need screen savers at all.

Source: DOE

Copiers and Fax Machines

- **Copiers and fax machines are the most energy-intensive type of office equipment** because they are left on for long periods of time — in some case, 24 hours per day.
- Today, there are over 220 million imaging equipment units in US buildings. Together, these units consume 40 billion kWh each year, roughly 2% of US building sector electricity consumption.
- If all businesses replaced their stock of imaging equipment with new units meeting these new ENERGY STAR requirements, Americans will save **3 billion kWh/yr**



Formula

Wattage × Hours Used Per Day ÷ 1000 = Daily
Kilowatt-hour (kWh) consumption

(1 kilowatt (kW) = 1,000 Watts)

Multiply this by the number of days you use the appliance during the year for the annual consumption. You can then calculate the annual cost to run an appliance by multiplying the kWh per year by your local utility's (.08 UT) rate per kWh consumed.



Energy Star

ENERGY STAR qualified appliances incorporate advanced technologies that use 10–50% less energy and water than standard models.

The money you save on your utility bills can more than make up for the cost of a more expensive but more efficient model.



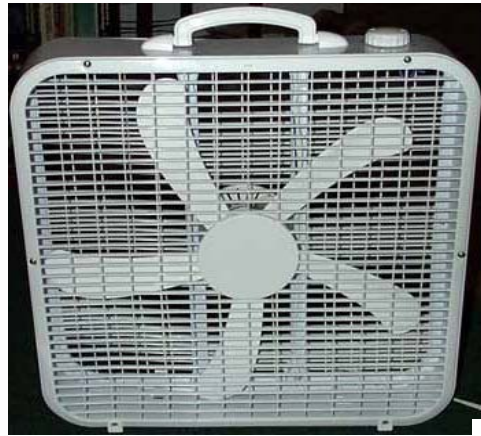
think!

ENERGY

- Did you know that the average home spends about \$2,200 on energy bills every year?
- ENERGY STAR® refrigerators use half as much energy as models manufactured just over 10 years ago!



It All Adds Up



Heating/Air Conditioning

A HVAC maintenance check-up should include the following:

Check thermostat settings

Tighten all electrical connections and measure voltage and current on motors.

Lubricate all moving parts.

Check and inspect the condensate drain in your central air conditioner, furnace and/or heat pump (when in cooling mode).

Check controls of the system to ensure proper and safe operation.

Cooling Specific

Clean evaporator and condenser air conditioning coils.

Check your central air conditioner's refrigerant level and adjust if necessary.

Clean and adjust blower components

Heating Specific

Check all gas (or oil) connections, gas pressure, burner combustion and heat exchanger

Actions To Do Yourself

Inspect, clean, or change air filters



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ENERGY

Changing starts with simple actions. Using more energy efficient appliances and using them wisely helps our environment while saving money at work and at home.

