

Measuring Your Impact 13

Choosing a Light Bulb

The following table provides information on two types of light bulbs available at a local store.

Type of bulb	Estimated lifetime (hours)	Cost per bulb (\$)
75 W incandescent	750	0.50
18 W compact fluorescent	7,500	5.00

Assume that

- each bulb lasts exactly its estimated lifetime.
 - each bulb provides the same amount of usable light.
 - the cost of electricity is \$0.10 per kilowatt-hour.
- (a) Calculate the total lifetime cost for using each type of bulb.
- (b) Calculate the total cost of using the incandescent bulb and of using the compact fluorescent bulb for 7,500 hours (the lifetime of the compact fluorescent bulb).
- (c) Given that most electricity in the United States is generated by fossil fuel-burning power plants that produce atmospheric pollution, which type of light bulb has the smaller ecological footprint.