

Electric usage is measured in: kilowatt-hours (kWh).

1 watt-hour is the equivalent of: 1 watt of power used for 1 hour.

1 kilowatt-hour is the equivalent of: 1000 watt-hours used for 1 hour.

Three values are needed to calculate the cost of a light bulb:

- A. The power rating or wattage.
- B. The time the light bulb is switched on in hours or the lifetime of bulb
- C. The cost per kWh.

Light bulb wattage  $\div$  1000 = kilowatts (kW)

(kW) x (Life hours of the bulb) = kilowatt hours (kWh)

(kWh) x (cost per kWh) (*this is what you pay for the light bulb to run.*)

**Example 1:** *Original light on kitchen island*

GE 65 W Reveal 65 Halogen Long Life Flood Light BR 30 with a total lifetime of: 3,000 hours:

$$(65 \text{ W} \div 1000) = 0.65 \text{ kW}$$

$$(0.65 \text{ kW}) \times (3,000 \text{ hours}) = 195 \text{ kWh}$$

$$(195 \text{ kWh}) \times (0.08 \text{ cents/kWh}) = \$ 15.60$$

$$\$ 15.60 + \$ 9.49 \text{ (cost of light bulb)} = \$ 25.09$$

$$(\$ 25.09) / (3,000 \text{ hours}) = \$ 0.0084 / \text{hr}$$

**Example 2:** *Replacement light*

Philips 11 W Ambient LED PAR 30L Indoor Flood with a total lifetime of: 25,000 hours

$$(11 \text{ W} \div 1000) = 0.0110 \text{ kW}$$

$$(0.0110 \text{ kW}) \times (25,000 \text{ hours}) = 275 \text{ kWh}$$

$$(275 \text{ kWh}) \times (0.08 \text{ cents/kWh}) = \$ 22.00$$

$$\$ 22.00 + 49.97 = \$ 71.97$$

$$(\$ 71.97) / (25,000) = \$ 0.002878 / \text{hr}$$