"Watt's" It All About?

Is a light bulb worth $4.00? That's approximately how much a 20-watt compact fluorescent bulb costs. It may seem like a lot when a 75-watt incandescent bulb with the same light output only costs $0.25, but the answer isn't as easy as it seems.

The cost of purchasing a light bulb, or any other electrical appliance, is only a fraction of its lifecycle cost. The life-cycle cost includes the cost of purchasing the appliance plus the cost of operating it for as long as it lasts. Although the cost of purchasing an energy-efficient appliance or light bulb may be more than buying other appliances, when you figure in life-cycle costs, they may be much less expensive.

Compare the 20-watt compact fluorescent bulb with the 75-watt incandescent bulb. Most of the information you need to make this comparison should be printed on the light bulb package.

	Compact Fluorescent	**Incandescent**
Bulb wattage	20-watts	75-watts
Light output (lumens)	1,200	1,200
Life expectancy (hours)	10,000	1,000
Energy cost per kWh	$0.08	$0.08
Total energy cost	$16.00	$6.00
Cost of new bulb	$4.00	$0.25
Life-cycle cost	$20.00	$6.25
Number of bulbs to equal longer life bulb	1	10
Life-cycle cost comparison	$20.00	$62.50

Take Action!

1. Total energy cost: To figure total energy cost, start by converting the wattage of the bulb to kWh by dividing by 1,000.

A) 20-watts ÷1000 = .020 kW

To figure the total energy usage, multiply the kW by the life expectancy.

B) .020 kW x 10,000 h = 200 kWh

Then figure the total energy cost by multiplying energy usage by the utility cost.

C) 200 kWh x $.08/kWh = $16

2. Cost of the new bulb: The price of purchasing the bulb.

3. Life-cycle cost: This is the cost of the bulb, together with the total energy cost.

4. Number of bulbs to equal longer life bulb: To get this, divide the life expectancy of the shorter life bulb into the life expectancy of the longer life bulb.

10,000 hrs ÷ 1,000 hrs. = 10

5. Life-cycle cost comparison: The 20-watt bulb lasts for 10,000 hours and has a life-cycle cost of $20.00. To light a room with a 75-watt incandescent bulb, the life-cycle cost would be the life-cycle cost ($6.25) multiplied by the number of bulbs (10) needed to last 10,000 hours.

$6.25 x 10 = $62.50

	Compact Fluorescent	**Incandescent**
Bulb wattage	-watts	-watts
Light output (lumens)	_____	_____
Life expectancy (hours)	_____	_____
Energy cost per kWh	$0.08	$0.08
Total energy cost	$_____	$_____
Cost of new bulb	$_____	$_____
Life-cycle cost	$_____	$_____
Number of bulbs to equal longer life bulb	_____	_____
Life-cycle cost comparison	$_____	$_____