

CFL VS. INCANDESCENT: CONSUMPTION, LIFETIMES, & COSTS

1. Figure Lifetime Electrical Consumption

- First learn the lamp's lifetime. Multiply it by wattage/1000 to reach the lamp's lifetime electrical consumption in kWh.
- The formula: $\text{Lifetime} \times \text{wattage}/1000 = \text{lifetime consumption in kWh}$

2. Calculate Lifetime Cost

- Next figure lifetime cost by multiplying the energy consumption by the rate, then adding this to the lamp's initial cost.
- The formula is: $(\text{lifetime energy consumption} \times \text{electric rate}) + \text{cost of lamp}$

3. Don't Stop at Lifetime Cost!

- If you stop calculating at the lifetime cost you'll think the CFL is still way more expensive!
- Comparing lifetimes is like comparing apples and oranges, since the amounts are so different (remember - 10,000 hours for the CFL vs. 1,000 for the incandescent)!

4. The Right Stuff: Hourly Cost

- So, in order to make a comparison, you can figure the actual cost per hour to operate each lamp.
- Then you are asking each lamp to do the same amount of work for the same time period.

5. Hourly Cost = Actual Cost

- Add the cost of the lamp plus its lifetime cost. Divide this by the lamp's lifetime in hours.
- This will give you the actual hourly cost.
- Here's the formula: $\text{hourly cost} = \frac{\text{lifetime cost}}{\text{lifetime in hours}}$

Example: Which Lamp Costs More Per Hour to Use?

13 W CFL

- 10,000 hr. lifetime
- \$5 lamp cost
- 130 kWh lifetime consumption
- 20.60 lifetime cost
- $\$20.60/10,000 \text{ hrs} = \$0.002/\text{hr}$ (rounded)

75 W Incandescent

- 1,000 hr. lifetime
- \$0.62 lamp cost
- 75 kWh lifetime consumption
- \$9.62 lifetime cost
- $\$9.62/1000 \text{ hours} = \$0.010/\text{hr}$ (rounded)