

Compact Fluorescent Bulbs (CFL)

Invented: 1976

Advantages:

- More energy efficient*
- Produce less heat*
- Deliver more light per watt*

Disadvantages:

- Less energy efficient than LEDs
- Cold temperature sensitive
- Usage limitation (not dimmable, not efficient in recessed lighting)
- Contain mercury

*compared to incandescent bulbs



Light Emitting Diode (LED)

Invented: 1962

Advantages:

- Use 80–90% less energy*
- Produce little to no heat*
- Low maintenance, longer life spans*
- Dimmable
- Directional lighting
- More environmentally friendly than any other bulb



Disadvantages:

- Higher initial costs

*compared to incandescent bulbs



Incandescent Bulbs

Invented: 1879

Advantages:

- Low initial costs
- High light output

Disadvantages:

- Energy inefficient
 - They convert only about 20% of the energy they consume into light, the other 80% is lost as heat.
- Produce excessive heat
- Short lifespan, must be replaced more often
- Contribute to higher energy bills



Change a Bulb, Change the World!

- **Energy Efficiency:** LEDs convert 80% of energy to light, with only 20% lost as heat.
- **Lifespan:** LEDs last 10+ years longer and are fully recyclable (Environmental Defense Fund, 2022).
- **Cost Savings:** Switching to LEDs saves \$4,000 over 20 years (Carbon Switch).
- **CO₂ Reduction:** LEDs produce 451 lbs CO₂/year vs. 4,500 lbs for incandescents (W.P. Carey, 2023).
- **Heat & Safety:** LEDs emit minimal heat, reduce power loads, and are safe to handle.



HOU - hours of use



Bedrooms

Daily HOU per Lamp: 1.2 hr

Daily Energy Consumption: 751 Watt-hr



Bathrooms

Daily HOU per Lamp: 1.2 hr

Daily Energy Consumption: 512 Watt-hr



Kitchens

Daily HOU per Lamp: 2.3 hr

Daily Energy Consumption: 481 Watt-hr



Living Rooms

Daily HOU per Lamp: 1.7 hr

Daily Energy Consumption: 472 Watt-hr



Exterior

Daily HOU per Lamp: 2.9 hr

Daily Energy Consumption: 1,610 Watt-hr

The average household in Iowa uses 70-80 lightbulbs. Most homeowners use their lights between 1-3 hours per day on average. Changing only a few incandescent bulbs to LEDs, will decrease your energy bills (Carbon Switch, 2024).

