

A glowing lightbulb is the central focus, with a semi-transparent circular overlay containing the text. The background is a bokeh of other lightbulbs, creating a warm, golden glow. The text is in a bold, white, sans-serif font with a black outline.

ENERGY CONSERVATION

ENERGY CONSERVATION

- The rate that society is consuming energy is increasing.
- Many businesses and industries rely on energy to operate.



How have people's daily activities changed from past to present, regarding energy use?

ENERGY CONSERVATION

- Conserving energy is especially important, as some forms of energy are non-renewable.

What do you think should be done to ensure non-renewable resources are consumed sustainably?



ENERGY CONSERVATION

- **Energy conservation** means saving energy by not using more energy than what is needed.
- **Examples:** Walking to school, using a clothesline, turning off electronic devices





What efforts has the government taken to conserve energy or limit fossil fuel consumption?





ENERGY AND TECHNOLOGY

TECHNOLOGY: SOLAR PANELS



- **Solar panels** absorb energy from sunlight into the PV cells in the panel.
 - Creates electrical charges which move in the internal electrical field in the cell.



Benefits: Easy to install, require very minimal maintenance, have a long lifespan



Downsides: costly to install, weather dependent, and require a lot of space.

TECHNOLOGY: TRAFFIC LIGHTS



- **Traffic lights** are designed to be long-lasting, energy-efficient and produce minimal heat.
- They have a critical role in managing transportation and keeping people safe in society.
- A traffic light bulb lasts between 10-15 years before burning out.

TECHNOLOGY: ELECTRIC CARS



- **Electric cars** were created as an alternative to gas-powered vehicles.
 - Require a charging station where they take electricity from a **power grid**
- Electricity gets stored in a rechargeable battery.

TECHNOLOGY: ELECTRIC CARS



- The batteries are used to power an electric motor, which converts electrical energy into mechanical energy.
- Hybrid vehicles operate on electricity but have a traditional combustion engine in case the driver runs out of charge.

ENERGY AND TECHNOLOGY



- All electronic devices require electrical energy.
- Some electronics even consume energy when they appear to be turned off.



- **Phantom energy** is a draw of electricity that electronics consume while not being actively used.

ENERGY AND TECHNOLOGY

- People have designed products to conserve energy.

Example: Smart thermostats can be programmed to avoid heating/cooling the house when nobody is home.

What are some other examples of technology that helps conserve energy?



ENERGY AND TECHNOLOGY



Examples:

- Fluorescent and LED lightbulbs provide the most light using a small amount of energy.
- Power bars can be shut off to prevent appliances from consuming energy when they are not in use.





What other energy-efficient technologies do you know of?

