The background of the slide features a series of high-voltage power line towers and their associated transmission lines. The towers are silhouetted against a sky that transitions from a clear blue at the top to a warm, orange and yellow glow at the bottom, suggesting a sunset or sunrise. The lines of the towers and cables create a complex geometric pattern across the frame.

# **Chapter 9: Energy Resources**

# Energy Conservation

is the practice of using less energy.

- **Examples:**

- <http://study.com/academy/lesson/energy-conservation-and-energy->

Using cold water  
Turning off the  
Smartboard.

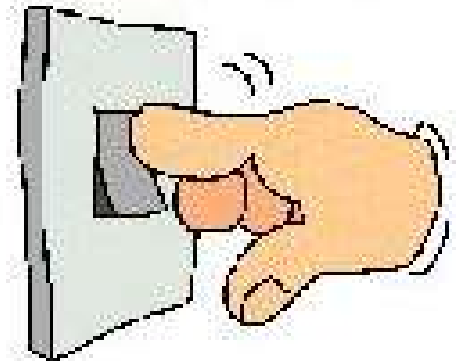
Insulating your house.

Change the light bulbs to  
energy saving light bulb

Unplugging things from the wall  
after your done using them.

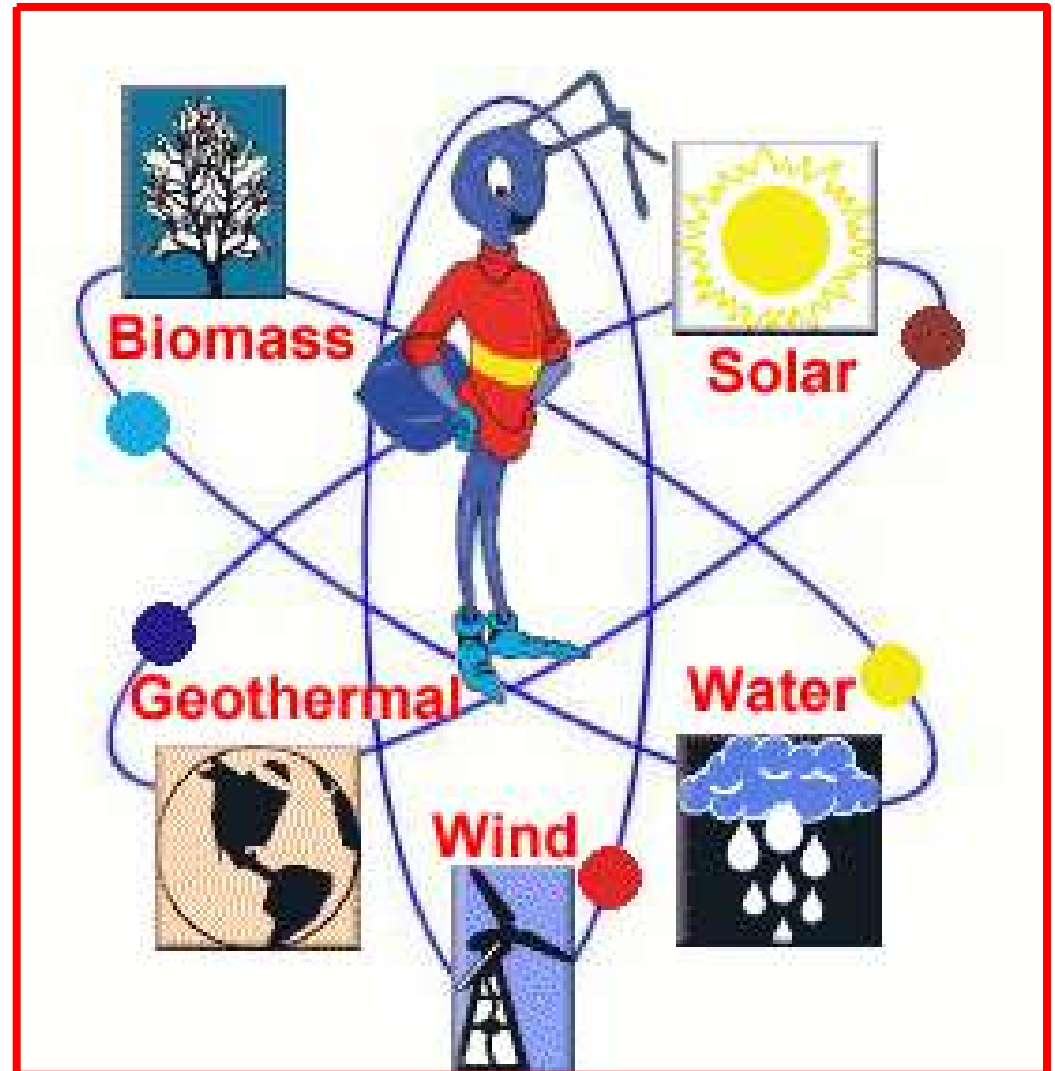
SAVE  
ENERGY

THIS  
MEANS  
YOU!



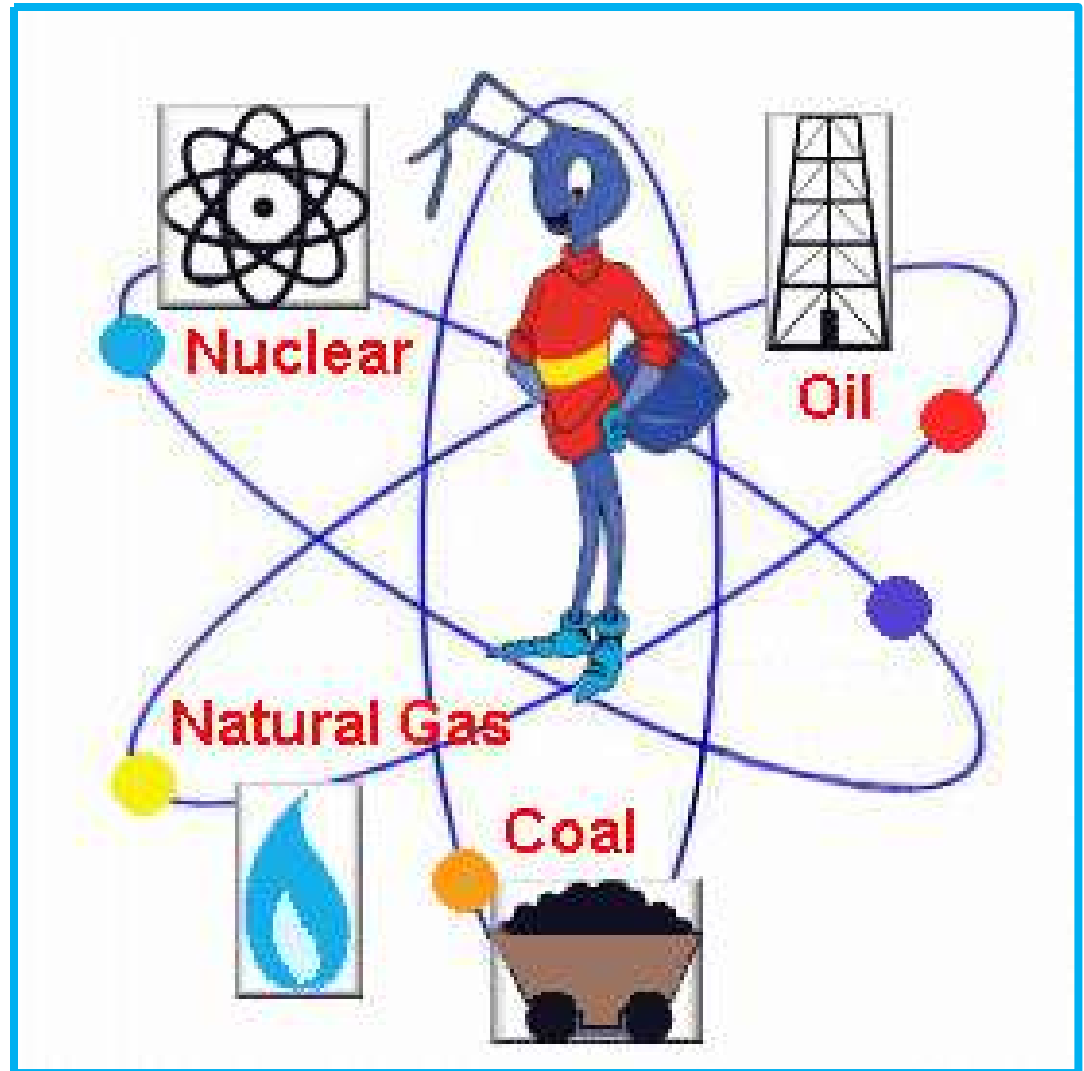
# Renewable Sources of Energy

resources that are always there, never run out, and renew themselves easily



# Nonrenewable Sources of Energy

resources  
that can be  
used up  
and cannot  
be  
reproduced



# Coal- Advantage

- Easy to transport (move from place to place), burns easily, and cheap



# Coal- Disadvantages

Pollutes the air, adds to greenhouse effect due to excessive CO<sub>2</sub>,  
**Nonrenewable**



# Coal- Miscellaneous

**Solid fossil fuel made from the remains of dead swamp plants; factories use coal**



# Oil- Advantage

Produces large amounts of energy,  
one of the most abundant, easy to  
transport





# Oil- Disadvantages

Pollutes the air, water, and ground!  
adds to greenhouse effect due to  
excessive CO<sub>2</sub>, **Nonrenewable**



# Oil- Miscellaneous

**U.S. uses about 1/3 of ALL oil produced in the world, but we only have 3% of Earth's oil supply in our country: gas for cars comes from refined oil**



# Solar- Advantages

Pollution free, low maintenance cost,  
noise free, rebates from the  
government, **renewable**



# Solar- Disadvantages

Requires sunshine (doesn't work @ night!) Expensive solar panels



# Solar- Miscellaneous

Heats up the inside of cars in parking lots – this is called passive heating: provides electricity



# Wind- Advantages

- **Renewable**
- No pollution
- Cheap once built
- Energy can be stored
- Large amounts of energy produced



# Wind- Disadvantages

- Requires strong and steady winds
- Uses noisy generators
- Can kill birds
- Cast shadows on the land



# Wind- Miscellaneous

Fastest-growing  
energy source in the  
WORLD; electricity





# Hydroelectric- Advantages

**Renewable, No pollution, controls the risks of floods, provides water areas that could otherwise be without.**



# Hydroelectric- Advantages

**Renewable, No pollution, controls the risks of floods, provides water areas that could otherwise be without.**



# Hydroelectric- disadvantages

Dams cause harm to the natural environments, requires HUGE flowing water source. Stop the natural flow of water!



# Hydroelectric- Miscellaneous

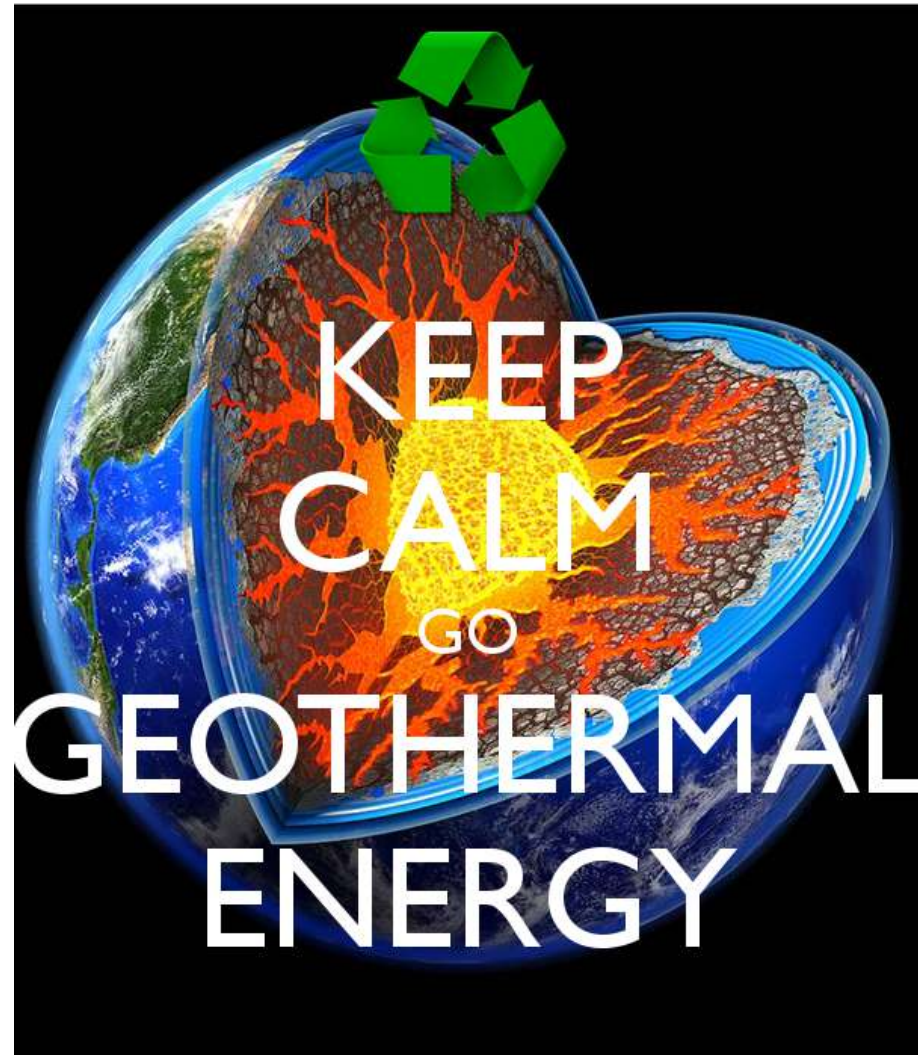
Most widely-used renewable resource:  
electricity for homes/buildings



# Geothermal- Advantages

**Renewable, No pollution, enormous amounts of stored energy! simple and safe**

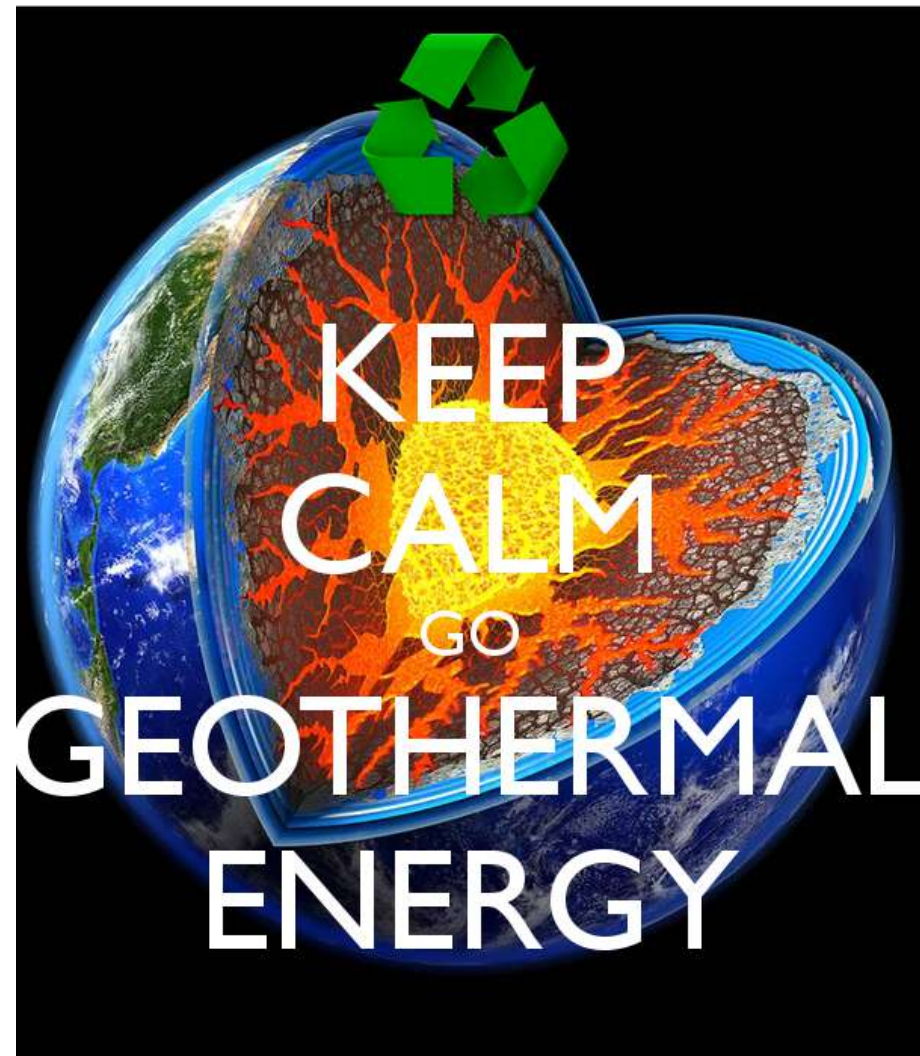
{Watch Youtube: Geothermal Thermal Heating (1:17) animated}  
<https://www.youtube.com/watch?v=IWOa5E2cDHY>



# Geothermal- Disadvantages

Limited availability  
(it's not easy to get  
to)

Deep drilling is  
**EXPENSIVE!**

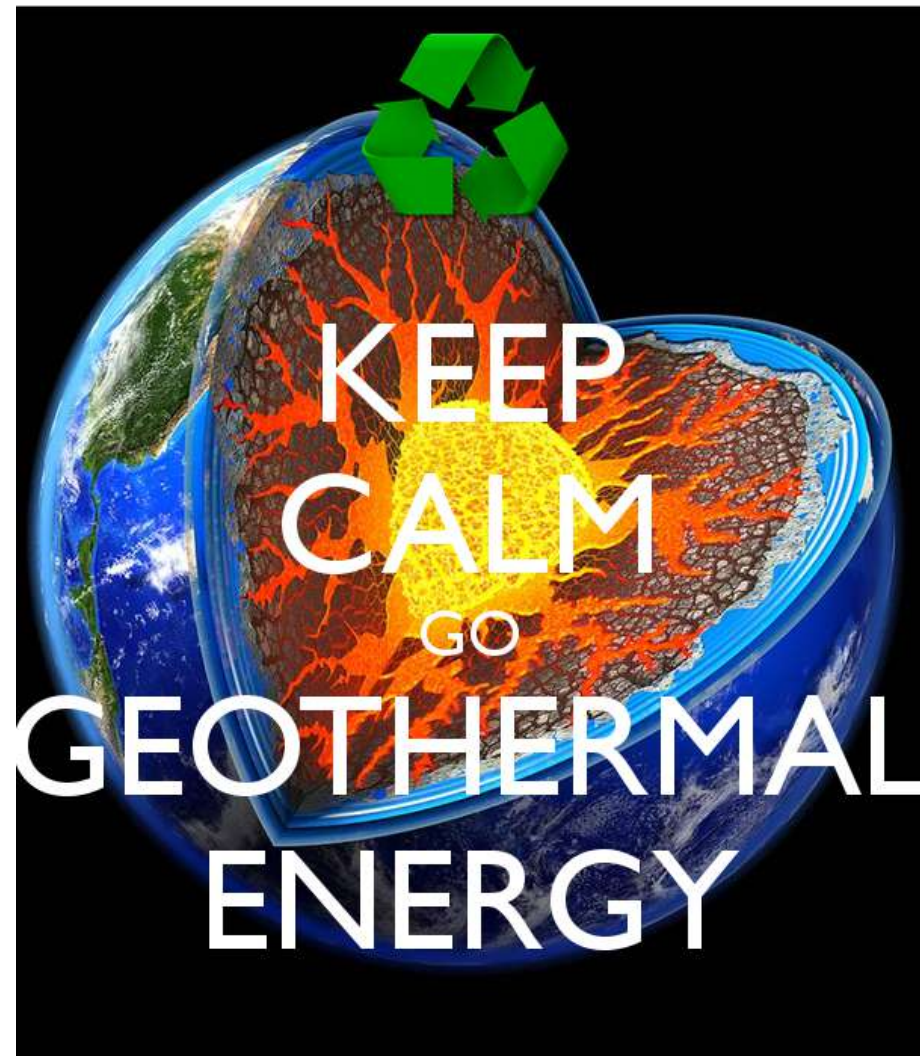


# Geothermal- Miscellaneous

In Iceland, most homes are heated with geothermal energy.

{Watch Youtube: Geothermal Energy in Iceland (6:42)}

<https://www.youtube.com/watch?v=XRAQrDduaU0>



# Nuclear- Advantages

Produces huge amounts of energy! Brings jobs to a country, cause little pollution

Plant Vogtle, located in Waynesboro, Ga., contains the first new nuclear units in the US in 30 years.





# Nuclear- Disadvantages

**Nonrenewable, Produces radioactive wastes (toxic when something goes wrong!)**

Plant Vogtle, located in Waynesboro, Ga., contains the first new nuclear units in the US in 30 years.



# Nuclear- Miscellaneous

reactor meltdowns can cause  
environmental harm & dangers

Plant Vogtle, located in Waynesboro, Ga., contains the first new nuclear units in the US in 30 years.



# Biomass- Advantages

Renewable, carbon neutral  
Can be made into other fuels



# Biomass- Disadvantages

Produces methane gas when it decomposes (this gas traps heat in earth's atmosphere)



# Biomass- Miscellaneous

Can be made from wood, sugar cane, corn, and other crops & garbage ; fuels cars



# Hydrogen- Advantages

**Renewable**

Burn cleanly

No pollution



# Hydrogen- Disadvantages

Takes more energy to burn the hydrogen than it will produce when its burned; inefficient



# Hydrogen- Miscellaneous

Possible new method to possibly fuel cars

