Chapter 18 Section 1 Notes

Renewable Energy is energy from sources that are not used up faster than they are formed.
 sources can be: wind, moving water, sunlight, and heat from Earth's interior

Solar Energy – Power from the Sun
- <u>Passive Solar Heating</u> – uses the sun's energy to heat something directly, without moving parts; ex) large windows facing the sun
- <u>Active Solar Heating</u> – uses collectors with moving parts; uses the sun's energy to heat a liquid, which then heats a building
  - heat exchangers are used in active solar heating
- <u>Photovoltaic Cells</u> – sunlight falls on a semiconductor, causing it to release electrons

Wind Power – Cheap and Abundant
- new wind turbines are cost-effective
- wind power is the fastest-growing source of power in the world
- disadvantage of wind energy – it must be transported from its source to where it is needed

Biomass – Power from Living Things
- biomass – plant material, manure, and wood
- Ways that biomass fuel is currently being used:
  - biogas digesters ferment manure and produce methane
  - dung-fired power stations produce electricity
  - ethanol from fermenting corn is added to gasoline
- Disadvantages of using biomass fuel: habitat loss, soil erosion, and air pollution
- wood and dung are major source of biomass fuel in developing countries
- Methane, Alcohol (gasohol and ethanol) are examples of biomass fuel

Hydroecectricity – Power from Moving Water
- Disadvantages of Hydroelectric Energy
  - flooding habitats
  - disruption of ecosystems downstream
  - reduced productivity of farmlands

Geothermal Energy – Power from within Earth – energy from heat in Earth's interior
- A geothermal power plant can be used to generate electrical energy in areas where reservoirs of water are heated inside Earth
- geothermal power plants get their energy from pumping heated water or steam from rock formations (geothermal reserves)
- Geothermal Heat Pumps can heat homes by circulating fluid underground to absorb heat from Earth