

Review Sheet – Energy and Society

- Forms of Energy
 - Mechanical energy
 - Potential Energy
 - Kinetic Energy
 - Chemical Energy
 - Thermal or Heat Energy
 - Electrical Energy
 - Nuclear Energy
 - Fission
 - Fusion
 - Radiation
- Electromagnetic Spectrum
 - The lower the energy, the longer the wavelength and lower the frequency, and vice versa
- Energy can be converted from one form to another
- Units of Energy
 - BTU, Calorie, calorie, Joules, kWh, Therm
 - Food Calorie (usually written with 'C')
 - calorie (usually written with 'c')
 - 1 Food Calorie = 1000 calories
- Units of Power
 - Watts, kW (kilo-watts), J/s, HP, cal/s
- Sources of Energy
 - Renewable
 - Can be replenished over and over again; they are never depleted
 - Hydropower, Solar, Wind, Tidal, Geothermal energy from inside the earth, Biomass from plants, Nuclear Fusion
 - Non-renewable
 - Cannot be replenished over and over again; they get depleted

- Fossil fuels, Tar Sands, Nuclear Fission
- Fossil Fuel Distribution
 - US has a lot of Coal reserves
 - Middle East has a lot of petroleum reserves
- Definitions
 - Power is the rate at which we do work
 - Energy is the capacity to do work
 - Work is the amount done
- $\text{Power} = \text{Energy} / \text{Time}$
- $\text{Energy} = \text{Power} \times \text{Duration of Usage (time)}$
- $\text{Energy consumption/day} = \text{Power consumption} \times \text{hrs used/day}$