

## Chapter 18 Section 2 Notes

**Alternative Energy** – energy sources that are still in development

Types of alternative energy – tidal power, hydrogen fuel cells, ocean thermal energy conversion

**Ocean Thermal Energy Conversion** – produces electrical energy using the temperature difference between two layers of water

- uses low pressure and warm ocean water to boil colder ocean water
- OTEC works because water boils at lower temperatures when under low pressure in a vacuum chamber
- Disadvantage – inefficient plants

**Hydrogen – A Future Fuel?**

- could be used as a fuel source in the future because it is abundant, can be burned as a fuel, and is used in fuel cells to produce electricity chemically
- Fuel Cells – uses hydrogen as an energy source to produce electrical energy chemically
  - combine hydrogen and oxygen to produce electrical energy

**Energy Efficiency** – percentage of energy that does useful work in a system

- Ways to increase energy efficiency in the US
  - using public transportation and developing more efficient engines for vehicles
  - turning thermostats down in winter and up in summer
  - insulating homes and businesses
- Hybrid Cars – most energy-efficient vehicles available today
  - use an efficient gasoline engine and an electric motor
  - are energy efficient

**Cogeneration**

- ex) using the waste heat from a furnace to power a steam turbine

**Energy Conservation** – saves energy and includes lifestyle changes like using less of any resource

- Conservation Around the Home – washing clothes in cold water uses much less energy than washing clothes in warm water
- Conservation in Daily Life
  - people can conserve energy in their daily lives by driving a vehicle that is fuel-efficient