

Chapter 17 Section 1 Notes

Fuels for Different Uses

- fuels are mainly used for: transportation, manufacturing, and heating and cooling buildings
- most of the energy in the U.S. is used for industrial purposes
- energy in fossil fuels is often converted into electricity

How is Electricity Generated?

- electrical generator – converts motion (mechanical energy) into electrical energy using magnetic fields and rotating turbines
- inside the combustion chamber of a coal-fired power plant, burning fossil fuels release energy in the form of heat
- internal combustion engines release carbon dioxide into the atmosphere
- steam is used to run a turbine at a power plant

Energy Use

- **World Patterns**
 - cost and efficiency are the factors influencing what fuel sources a nation uses
 - a fuel's suitability is dependent on: energy content, cost, and availability
 - an advantage of using fossil fuels for energy is the versatility in its uses
 - Argentina uses the least amount of energy per person
 - Canada uses the most energy per person
- **Energy Use in the United States** - the energy needs of the U.S. in the 1990s have risen slightly

How Fossil-Fuel Deposits Form (fossil fuels are derived from dead organisms; ex: coal, oil, and natural gas)

- fossil fuels contain solar energy because they are derived from dead organisms who once got their energy from the sun
- **Coal Formation** - formed when swamplands are buried by sediment. Then the added weight creates heat and pressure, which converts the plants to coal
- **Oil and Natural Gas Formation** - formed from the decay of tiny marine organisms that accumulated on the bottom of the ocean millions of years ago

Coal – most abundant fossil fuel in the world; most of the world's coal is in Asia

- Montana is the state with the most natural coal deposits
- acid precipitation results from burning high-sulfur coal

Petroleum (also called crude oil) - gasoline and plastics are made from petroleum

- Middle East has the most oil deposits
- most of the oil and natural gas in the U.S. is located in Alaska, Texas, California, and the Gulf of Mexico
- oil refineries convert petroleum into fuels
- double-hulling is a construction method used to prevent oil spills

Natural Gas - Europe has the most natural gas deposits

Predicting Oil Production

- oil production is still increasing but it is increasing much more slowly than it did in the 1960s.
- factors that help predict future oil production are
 - changes in technology
 - costs of obtaining fuels
 - number of oil deposits discovered

Future Oil Reserves

- A large oil reserve has not been discovered in the past decade