Resource Issues

Energy
- Renewable - unlimited supply
  - Solar, wind, fusion
- Non Renewable - limited supply
  - Fossil Fuels & Fission

Fossil Fuels - 80%
- Oil, natural gas & coal
- Proven reserves – actually located
  - Oil: 40 years remaining
  - NG: 80 years remaining
  - Coal: 200+ years remaining
- Potential reserves – not yet found but expected to be there

U.S. Oil
- Consumes 20 million barrels/day
- Exports 1 million barrels/day

ANWR - Arctic National Wildlife Refuge
- Up to 1.5 million barrels/day but...
  - 10 years before producing
  - Much will be exported
  - Supported by Alaskans (they make money from state)

Oil Shales & Tar Sands
- Petroleum in Rock
- US & Canada
- Environmental Negatives

Distribution of Reserves
- 2/3 in 5 Countries

Middle East Oil
- OPEC – 1960s formed to stabilize prices
- 1973 Yom Kippur War – anger against west for supporting Israelis
- Embargo – gas prices skyrocket

Post Embargo
- New Producers – cost of oil extraction less than price
- Reduced Demands – changes in consumer habits, production methods
- Fuel Efficiency
- New Consumers – third world growth
  - China – blazing fast growth rate, access to Stans
  - Costs to Less Developed Counties - Oil more expensive now

Europe vs USA
- High cost of gas in Europe
- Cover costs of roads & infrastructure
- Discourage gas consumption
- Limited space in older cities

USA
- Subsidized Roads
- Supply & Demand
- Demand is up

Nuclear Energy
- High Costs
- Hazards & Waste
  - Three Mile Island 1979
  - Chernobyl Disaster 1986

Renewable Energy
- Solar - expensive and limited total
- Hydroelectric - all good sites taken
- Geothermal - all good sites taken
- Environmental issues

Fusion? - not yet feasible
BioFuels? - HUGE demand for corn, etc.
- unable to meet need
- Environmental issues
- Ethanol
- BioDiesel

Conclusions
- We will run out of fossil fuels
- Conservation & Alternative Sources