

## Lab: U.S. Energy Consumption Over Time (1950–2020)

### Objective

Students will graph real historical U.S. energy consumption data and analyze how the energy mix has changed from 1950 to 2020.

### Background

Energy in the United States comes from several primary sources including coal, natural gas, petroleum, nuclear power, and renewable energy. Over the past 70 years the mix of energy sources has changed dramatically due to technology, economics, and environmental concerns. In this lab you will graph historical energy consumption data to identify long term trends in the U.S. energy system.

### Materials

- Graph paper
- Pencil
- Calculator
- Colored pencils

### Data

#### ***U.S. Energy Consumption by Source (Quadrillion BTUs)***

Year	Coal	Natural Gas	Petroleum	Nuclear	Renewables
1950	12.3	6.0	13.3	0.0	2.9
1955	12.9	8.9	15.5	0.0	2.9
1960	10.0	12.4	20.0	0.0	3.1
1965	11.6	15.6	23.5	0.0	3.2
1970	13.0	22.0	30.0	0.2	3.3
1975	14.5	19.5	28.5	1.9	3.4
1980	16.0	20.0	35.0	2.7	4.0
1985	18.2	18.4	31.0	4.1	4.8
1990	20.0	19.0	33.5	6.2	6.0
1995	20.5	21.6	34.2	7.1	6.4
2000	22.0	23.0	38.0	7.8	6.1
2005	22.5	22.2	40.0	8.0	6.4
2010	20.0	24.0	35.0	8.4	8.0
2015	15.5	27.5	36.5	8.3	9.7
2020	10.3	31.5	32.2	8.3	11.6

## **Graphing**

Create a graph using the data above.

## **Analysis Questions**

1. Which energy source dominated U.S. energy use in 1950?
2. Which energy source dominates by 2020?
3. Which energy source shows the largest decline after 2005?
4. Which energy source increases the most after 2000?
5. Around what decade does nuclear energy level off?
6. What trend do you notice in renewable energy after 2010?
7. Why might natural gas increase while coal decreases?
8. What is another question you have regarding the data?