



In Class Exercises (ICE)

The rates of energy production and consumption (from all sources) for the United States is shown in Figure 1 below.

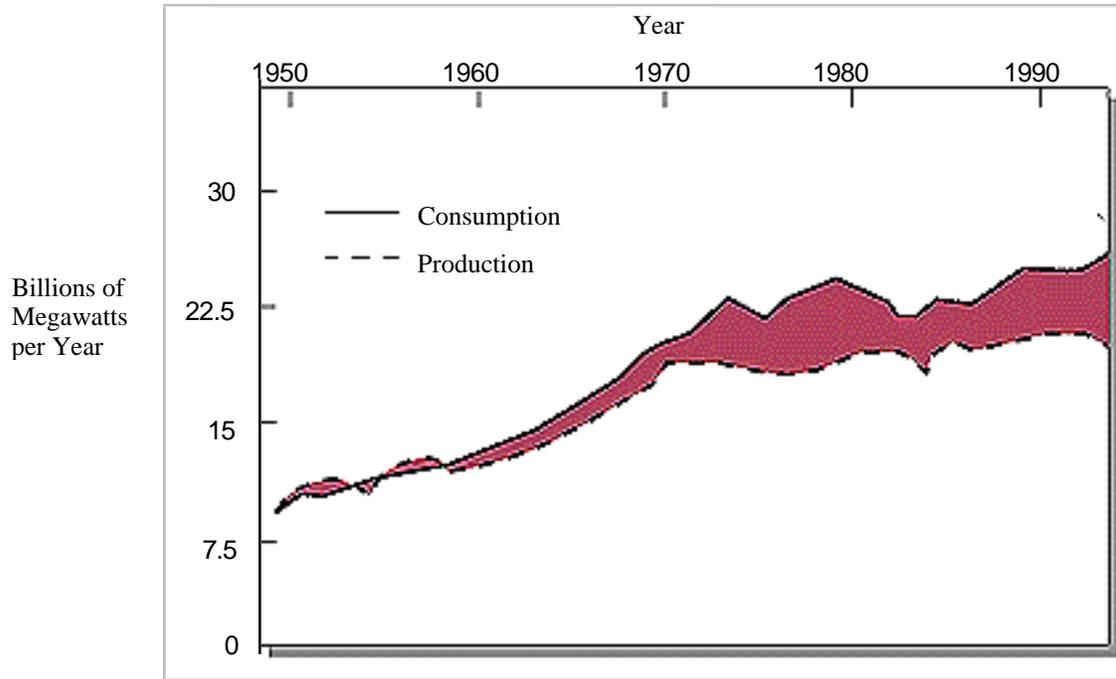


Figure 1: Rates of Energy Consumption and Production for the United States, 1950-1995.¹

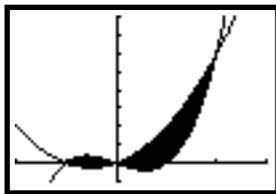
- ***During what periods was more energy produced than consumed?***
- ***Approximately how many billions of megawatts of energy were exported between 1950 and 1995?***

¹ Source: USGS Fact Sheet FS-007-97. Energy Resources Surveys Program, United States Geological Survey.

- **Approximately how many billions of megawatts of energy were imported between 1950 and 1995?**

- **Assuming a price of \$25 per megawatt², what was the net cost³ of energy for the period 1950-1995?**

- **How could you find the shaded area between the two curves $f(x)$ and $g(x)$ shown in Figure 2?**



$$f(x) = x(x - 1)(x + 1)$$

$$g(x) = x(x + 1)$$

Figure 2: Area Enclosed by $f(x)$ and $g(x)$.

² According to the story “Experts Try to Explain Run-up in Energy Costs” from The Oregonian (July 19, 2000) the wholesale price of electricity was approximately \$25 per megawatt. Assuming that this price applies to all forms of energy (electricity, petroleum, coal, etc.) for the entire period 1950-1995 is a big simplification. If this seems like too much of a simplification to you, how would you modify your calculation of net energy cost to obtain a more accurate figure?

³ In this case, the net cost is the cost of imports minus the revenue from exports.