Connecticut Energy Education
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Lesson 7: Electricity and CO2 Emissions: How Does the Electricity I Use Compare to the National Average?
Student Assignment

Using EPA's Power Profiler, (http://www.epa.gov/cleanenergy/powpro/screen1.html) find out how your electricity compares to the national average.

A. Go to the Power Profiler (http://www.epa.gov/cleanenergy/powpro/screen1.html) (or use the attached sheet for either Connecticut electric customers)
B. Enter your zip code and choose your electricity provider.
C. Answer the following questions:

1. How does the Connecticut electric fuel mix compare to the national mix?
2. What do you think causes the differences?
3. How do air emissions in Connecticut compare to the nation?

D. Click on "My Emissions" under "Make a Difference" in the online chart.

What air emissions are caused by the electricity you use? To find your emissions, you can choose one of the three options:

- Option 1: You can collect a year's worth of utility bills and enter information about your utility use, measured in kilowatt hours (kWh), for each month of the year. (This option provides the most precise answer.)
- Option 2: You can estimate your average monthly utility use for the year.
- Option 3: You can use the default values provided for average residential or commercial utility use.

(You may also use chart 2 in the student information. This chart uses the default average of 900 kWh per month.)

E. Answer the following questions:

4. How many tons of CO_2 is created each year for the electricity that your family uses? Divide the total CO_2 by the number of people in your home to get your personal total. (one ton equals 2000 pounds)
5. How many cars (at 11,450 pounds of carbon dioxide a year) does your personal emissions equal? How many cars does your family's emissions equal?

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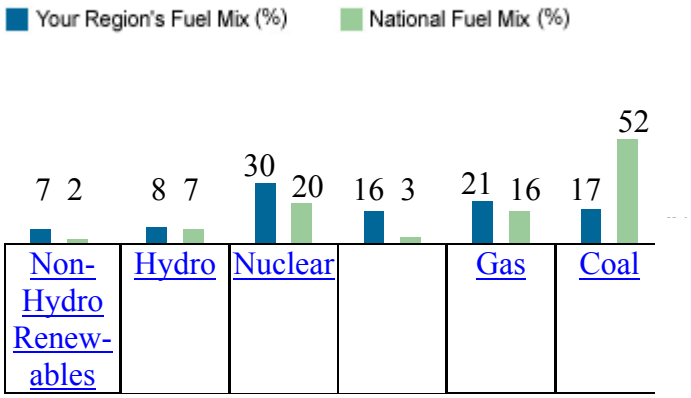
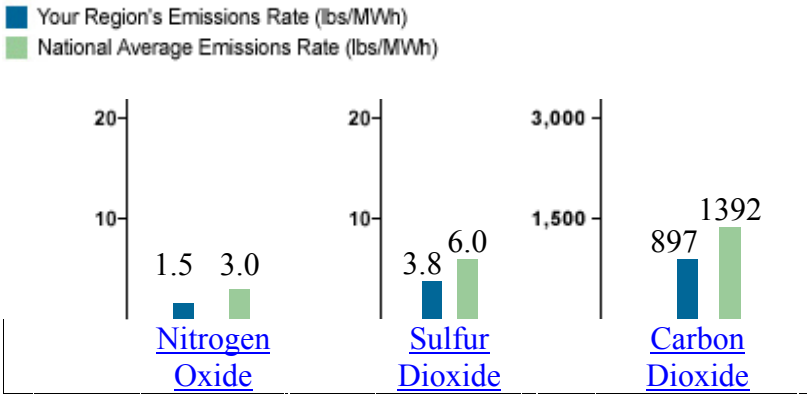
EPA's Power Profiler— Chart 1 Connecticut customer information The information reported above is derived from EPA's eGRID database for calendar year 2000.

1
What Is My Fuel Mix?
This chart compares fuel mix (%) of sources used to generate electricity in your region to the fuel mix (%) for the entire United States.



EMISSIONS RATE COMPARISON

2
What Are the Emissions in My Area?
This chart compares the average emissions rates (lbs/MWh) in your geographical region to the national average emissions rates (lbs/MWh) for nitrogen oxide, sulfur dioxide, and carbon dioxide.



MAKE A DIFFERENCE

3
What Can I Do to Make a Difference?
Choose one of the buttons on the right to find out what you can do to make a difference.

My Emissions

Find out about the **actual emissions** attributable to the electricity you use in your home or business.

Be More Energy Efficient

Find out how you can make your home or business more **energy efficient**.

Buy Green Power

Learn how you can **buy green power** (power generated from renewable energy sources) for your home or business.

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EPA's Power Profiler— Chart 2 What Air Emissions Are Caused by the Electricity I Use?

The table below presents the estimated pounds of pollutants attributable to the electricity you use in your home or business during one year, along with a description of what these numbers mean in everyday terms. It also repeats the earlier chart that compares your region's air emissions rates to the national average.

1

What Are My Annual Emissions?

This is an estimate of the pounds of air pollutants caused by the electricity you use in your home or business during one year.

18	pounds of nitrogen oxides
44	pounds of sulfur dioxide
10,561	pounds of carbon dioxide

Note: Your annual emissions include an adjustment for line losses of 9 percent.

WHAT DOES THIS MEAN?

2

What Do these Numbers Mean in Real Terms?

Adding one car to the road results in 11,450 pounds of carbon dioxide emissions per year. Adding one SUV to the road results in 16,035 pounds of carbon dioxide emissions per year. For example, if your annual carbon dioxide emissions are 16,000 pounds, that equals adding approximately 1 SUV or 1.4 cars to the road for one year.

You would need to plant 1.35 acres of trees to absorb 10,000 pounds of carbon dioxide in one year. For example, if your annual emissions of carbon dioxide are 20,000 pounds, you would need to plant 2.7 acres of trees to absorb that amount.

EMISSIONS RATE COMPARISON

3

What Are the Emissions in My Area?

This chart compares the average emissions rates (lbs/MWh) in your geographical region to the national average emissions rates (lbs/MWh) for nitrogen oxide, sulfur dioxide, and carbon dioxide.