NAME: _____ **DATE:** _____

STATE ENERGY PROFILE

Use *www.ipl.org/div/stateknow/popchart.html* for your population and area data.

Use *www.eia.gov/tools/glossary/* to define terms.

Use *www.eia.gov/state/* for all your energy data.

Use *powerscorecard.org/technologies.cfm* for help with question 8.

State:

Population and rank among 50 states: _____

Area and rank among the 50 states: _____

Define "per capita": _____

Define "BTU", what does it stand for and how is the term used in terms of energy?

1. Where does your state rank in the following areas?

_____ Total energy consumption per capita

_____ Total energy production

_____ Coal production

_____ Carbon dioxide emissions

2. Use the 5-tab graph, below the Quick Facts to answer the following questions.

_____ According to the consumption estimates of 2011 what type of energy was consumed the most? Is this fuel a renewable or non-renewable? _____

_____ How many trillion BTU's total of renewable energy does your state consume?

What sector consumes the most energy and which sector consumes the least?

_____

_____

_____

Is this reasonable? Did you think percentages would be reflected differently?

_____

_____

_____

_____

_____

3. Under Today In Energy on the right hand navigation, choose one of the two brief articles to read and summarize. Along with your summary include how this information could connect to or impact your community. Remember: Everything is connected – it's just a matter of searching for the link – your location within the web.

Title: _____

Summary: _____

4. Now go back up to the top and let's take a look at the data in the map.

- Go to Full Screen.
- Go to Layers/Legend.
- Click on "Remove All Layers"
- Click on "Toggle State Mask"
- Troubleshooting: Sometimes you might have to exit out of Full Screen to get the address tool to work or be in the minimized screen view to search another location.
- You are now ready to collect data and answer questions.

5. Scroll down the Layers/Legend menu until you find Fossil Resources. Click in the box next to Fossil Resources. What fossil resources are found in your state?

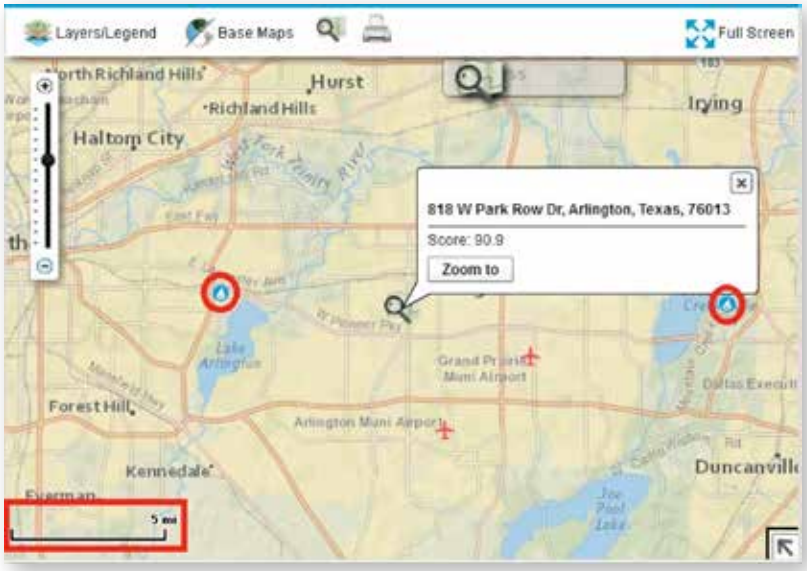
6. Using the information in number 5 is your state able to produce their own from the fossil resources seen in the graph or might they import it from other states?

7. Click off "Fossil Resources" and click on "Coal Mines". Within your state are there any surface or underground coal mines? Less than 50 or more than 50?

8. Click off "Coal Mines" and click on, under "All Power Plants", "Coal Power Plant", Natural Gas Power Plant", and "Petroleum Power Plant" and under "Oil/Gas Refining and Processing", click on the box next to it. Now go up to the magnifying glass of the map icon in the upper left.

- Type in the address of your school, street number, name and zip code. Once your school shows up you can minimize that window so it is out of your way.
- Use the zoom in/zoom out toggle at the left to zoom out one map at a time. DO NOT USE THE SLIDE toggle feature. As soon as you see one of the features, a coal, natural gas, or petroleum plant or an oil/gas refining processing plant, STOP. Then you will need to measure the closest one's distance from your location using the scale at the bottom left.

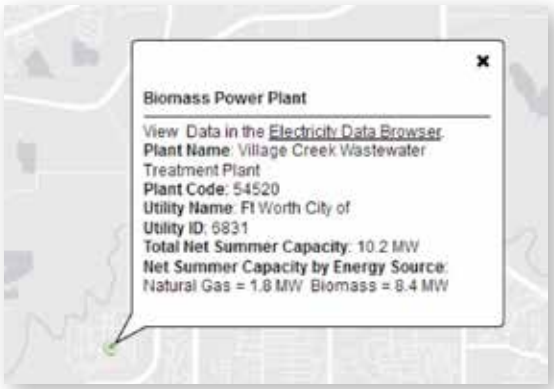
For example: As I slowly, map by map zoomed out, (it took me 4 times) 2 natural gas plants came into view. Using a ruler I measure the distance from the school to the closest power plant was 8 cm. According to the scale about 6.75 cm equaled 5 miles. After creating an equation to solve this problem, I found that this power plant is about 6 miles from the school.



- Compared to the size of your state, is it your opinion that there are a lot or very few energy plants?
- Explain the environmental impacts associated with the plant closest to your school. If you need help, go to Power Scorecard, choose your energy source. This will provide you with a little extra knowledge for your explanation.
- Optional: Investigate this plants Environmental Safety Record.

9. Staying focused on your school location, click off all the fossil fuel plants. Now let's look at renewable energy potential and then we will zoom out and look at renewable energy for the state.

- For your school explain what the potential is for renewables to be considered. (biomass, geothermal, solar, on shore wind, and off shore wind if you are a coastal school)
- Which type of plant is closest to you? By clicking on the icon for the symbol closest to you, you will find the number of Megawatt Hours of electricity it produces at its peak, usually summer.
- In your summary below, explain the environmental impacts associated with the plant closest to your school. If you need help, go to Power Scorecard, choose your energy source. This will provide you with a little extra knowledge for your explanation.



For example: For my location the closest renewable plant is a biomass plant. During its peak generation period it produces 8.4 MW of energy from biomass.

Summarize your findings below and answer whether or not it would be worth researching the size and cost of a renewable energy system from the data presented.

10. Now we want to get a sense of the number of renewable energy plants and types found in your state.

- In Full Screen view, close the address box and zoom out to see your entire state.
- Under All Power Plants, click on biomass, geothermal, solar, wind, and wood power plants.
- As each source populates on your map, take a mental picture. Which plant type is most abundant in your state and what can you infer from this information?
- No add another layer, Photovoltaic Solar Potential. Do the two sets of data match up? For instance, if you have high solar potential in the southwest of your state, are there ample solar plants in place? Or vice versa, if the southwest of your state has low potential for solar power do you see several plants?

- Answer this question for Biomass Potential, Geothermal Potential, On Shore Potential, and Off Shore Potential (if you are a coastal state). Be sure to click off one energy potential layer before clicking on another, otherwise your data will not be accurate.

Biomass: _____

Geothermal: _____

On Shore Potential: _____

Off Shore Potential: _____

Optional: Create an infographic for your state, profiling its energy production and consumption. For information on infographics go to, *www.schrockguide.net/infographics-as-an-assessment.html*