

SEA Physics Week 5

May 18-May 22, 2020

You will be researching an energy source that is used to provide electric energy to homes, businesses, schools, etc. Your assignment is based on your plicker number for what your energy source.

1-5 Hydroelectric

6-9 Fossil Fuels

10-14 Nuclear

15-19 wind

20-23 solar

24-27 biomass

28- geothermal

Usage

Find out how much of our electricity is provided by your energy source. This can be found at <https://www.eia.gov/tools/faqs/faq.php?id=427&t=2>.

Our energy source was used to generate _____ % of the US's electricity in 2018.

Efficiency

Find the efficiency of your energy source in generating electric energy. If you want the efficiency for a fossil fuel or nuclear plant, go to

https://www.eia.gov/electricity/annual/html/epa_08_01.html.

This page gives the Heat Rate for different kinds of power plants. The Heat Rate is the heat energy used to generate 1 kWh of electric energy. Heat Rate is measured in Btu (British Thermal Units). 1 kWh is equal to 3412 Btu. To get a power plant's efficiency:

$$\% \text{ Efficiency} = \frac{3412}{\text{Heat Rate}} * 100$$

If you want the efficiency of a renewable source of energy, go to

<https://www.eia.gov/totalenergy/data/annual/pdf/sec17.pdf>.

This is a document called "Alternatives for Estimating Energy Consumption". It includes a table that shows the efficiencies of renewable energy plants.

Our energy source is _____ % efficient.

How It Works & Where It's Used

Find out how your energy source is used to generate electricity.

Go to the US Energy Information Administration – the same site where you got the data about usage and efficiency. Go to "Energy Explained" at

<https://www.eia.gov/energyexplained/index.php>.

Down the left-hand side you can find your energy source. Click the "+" next to your source to expand a list of topics. Look at each of the topics for information you can use on your poster.

How It Works

Where it's Used

Benefits and Costs

Find as many benefits and costs for your energy source as you can. Benefits are ways that the energy source is helpful or useful. Costs are ways that the energy source is a problem or harmful. It can include how much it costs to build or use the energy source, but it also includes things like how it impacts the environment or people.

Start back at the US Energy Information Administration "Energy Explained" at

<https://www.eia.gov/energyexplained/index.php>.

Down the left-hand side you can find your energy source. Click the "+" next to your source to expand a list of topics. Look at each of the topics for information you can use.

Then go to the West High Library site at

<https://libraries.tusd.net/common/servlet/presenthomeform.do?l2m=Home&tm=Home&l2m=Home>.

Select the "GALE Opposing Viewpoints in Context".

Then scroll down and select "Energy and Environmentalism".

Find your energy source in the list of topics and select it. You will see an article about the source. Click "Read more" and read the whole article for additional information for your

poster. If you have time, take a look at the “Featured Viewpoints” shown on the first page about your energy source.

Benefits

Costs

PART 2: POSTER (on a sheet of paper)

Make a poster that summarizes your research. Be prepared to present the poster to the class.

The format of your poster is shown a right.

Use markers – do not use pen or pencil.
Make your writing neat and dark.
Write large enough to read from across the room. Watch your spelling and grammar.

(you may create it electronically if you like.)

NAME OF ENERGY SOURCE	
Usage	Efficiency
How it Works & Where It's Used	
Benefits	Costs

Feel free to meet others doing the same assignment on zoom if you like. I know there are rooms you can enter to work separate from the group. (not sure how it works but we can learn together)

Plan to zoom in at 10 am for 3rd period and 11 am for 4th period on Thursday May 21st to present your poster.

If you need help...

Zoom School days 10:00AM -12:00PM (Click link below) You will need to use your name when you come to the meeting. <https://us04web.zoom.us/j/317242980?pwd=RjFYSlJTdC9JaG4xVFFIMINSNDhSQTO9>

Call School Days 12-4 PM by phone 209-625-9450

Remind any other time. There are no guarantees that I will answer outside of this 6 hour window listed above but I will try to be ready to answer your questions on Zoom the next day.

To join remind text 81010 this message @seaph3