A Few Questions from the ***US Primary Energy Consumption by Source and Sector*** Graphic

[**https://www.eia.gov/energyexplained/us-energy-facts/**](https://www.eia.gov/energyexplained/us-energy-facts/)

This is a chart that shows the basics of the US energy use system in 2022. (second graph from top) On the left are the sources, on the right are the use sectors. Your use of a device to view this chart puts you in the electric power sector, which uses around 35 percent of all primary energy.

The term primary energy just means the ways that energy is made available. For example, about 36 percent of all energy used in the United States comes from petroleum. We refine petroleum into end-use fuels such as gasoline and diesel. See “Notes” at the lower right for more on that.

Of the petroleum we use, what share of its combustion is used in the transportation sector? Answer: 69%. (red in next to the red petroleum box on the left)

What share of all transportation energy use comes from petroleum? 90% (as seen near the yellow transportation box in the red line drawn from petroleum)

Here are some questions to see if you are understanding the chart. Answers will follow on the second page after a long gap. I could give you the chart in the exam with questions similar to those below. The purpose of course is for you to gain understanding of the structure of the US energy system.

1. What share of transportation energy comes from renewables? (by the way, most of that is ethanol is made from corn, but a tiny bit is from hydro, wind and solar electricity running through electric vehicle batteries).
2. What share of coal combustion goes to electric power?
3. Natural gas, the most flexible of the fossil fuels, has many uses. What share is used to make electrical power? (also note that its residential and commercial uses are mostly heating). What share of electric power comes from natural gas combustion? (note that this is a different question that the first question here in #3)
4. What share of renewable energy goes to making electricity? When we see a larger share of renewable energy making electricity than is then used to power transportation, the world will be a very different place – hopefully for the better.
5. What share of electricity comes from petroleum? Note that this is a very small share because per unit of energy petroleum is very expensive. More on this later when we look at electric vs gasoline powered autos.
6. What share of transportation energy comes from natural gas? Quite a few municipal busses run on compressed natural gas, but not many autos.

Now go up to the first graph, which is a pie chart with a break out section showing the composition of renewable energy production. Around \_\_\_\_ percent is from biomass. Which contributes more, wind or hydroelectric? This was not the case even a few years previously. Also remember that in the Pacific Northwest, hydro produces more electricity than wind.

Answers:

1. 6%
2. 90%
3. 37%, 33%
4. 61%
5. 1%
6. 5%