

2022 - 2023 Energy Education Workshop - Pre/ Post Assessment - Wind

Your answers in this assessment are used to shape NEED curriculum and training.

Please answer to the best of your ability. Completely fill in the circle next to your selected answer.

Location: _____ Date: _____

- (A) Pre
- (B) Post

Answer Selection: Correct = ● Incorrect = ✕ ✓ ⊖

Is this your first NEED workshop?

- (A) Yes
- (B) No

1. Which sector of the economy consumes the most energy?

- (A) transportation
- (B) industry
- (C) residential/commercial
- (D) electric power

2. Most of the energy consumed in the U.S. is stored in which form of energy?

- (A) kinetic
- (B) thermal
- (C) chemical
- (D) mechanical

3. In which form do all energy flows begin?

- (A) electrical
- (B) chemical
- (C) radiant
- (D) nuclear

4. Which of the following is not a primary source of energy?

- (A) petroleum
- (B) natural gas
- (C) electricity
- (D) all of the above

5. Which energy source is used to generate the largest percentage of **electricity** in the U.S.?

- (A) hydropower
- (B) petroleum
- (C) coal
- (D) natural gas

6. What is the national average cost of a residential kWh of electricity?

- (A) 8 – 10 cents
- (B) 12 – 14 cents
- (C) 15 – 17 cents
- (D) 18 – 20 cents

7. When considering **total energy** consumption (including transportation, industry, and electricity), which of the **renewable** energy sources provides the U.S. with the greatest amount of energy?

- (A) biomass
- (B) hydropower
- (C) wind
- (D) solar

8. When considering **total energy** consumption (including transportation, industry, and electricity), which of the **nonrenewable** energy sources provides us with the greatest amount of energy?

- (A) petroleum
- (B) natural gas
- (C) coal
- (D) nuclear

9. **Nonrenewable** sources of energy make up what percentage of U.S. **energy** consumption?

- (A) less than 60%
- (B) 60 – 70%
- (C) 70 – 80%
- (D) 80 – 90%

10. What are the top five sources of energy used in the United States?

- (A) uranium, wind, natural gas, hydropower, biomass
- (B) petroleum, natural gas, coal, uranium, biomass
- (C) coal, petroleum, uranium, hydropower, solar
- (D) solar, coal, petroleum, geothermal, natural gas

Continued on other side ⇨

11. What do coal, natural gas, nuclear, and some solar power plants have in common?

- (A) all utilize cooling towers
- (B) all burn a fuel to drive the turbine generator
- (C) all emit CO₂
- (D) all use thermal energy to drive the turbine generator

12. Which country provides the largest portion of imported oil to the U.S.?

- (A) Egypt
- (B) Saudi Arabia
- (C) Venezuela
- (D) Canada

13. Which **renewable** energy source generates the largest percentage of **electricity** in the U.S.?

- (A) wind
- (B) solar
- (C) hydropower
- (D) biomass

14. Which of the following is **not** a greenhouse gas?

- (A) H₂O (water vapor)
- (B) CO₂ (carbon dioxide)
- (C) CH₄ (methane)
- (D) N₂ (nitrogen)

15. When considering most thermal power plants, how efficient is the system, or, roughly how much energy will reach the consumer as electricity?

- (A) one-third (1/3)
- (B) one-fourth (1/4)
- (C) one-half (1/2)
- (D) three-fourths (3/4)

16. *Opinion*: I will take energy into consideration when I make my daily decisions.

- (A) always
- (B) most of the time
- (D) some of the time
- (E) never

17. Which state leads the U.S. in wind power generation?

- (A) California
- (B) Texas
- (C) Iowa
- (D) Oklahoma

18. Which country leads the world in installed wind capacity?

- (A) China
- (B) Germany
- (C) Spain
- (D) United States

19. The most commonly used utility scale wind turbines are

- (A) vertical axis turbines
- (B) horizontal axis turbines
- (C) inclined systems
- (D) none of the above

20. The following is **not** one of the basic parts of a wind turbine:

- (A) nacelle
- (B) hub
- (C) rectifier
- (D) all of these are basic components of a wind turbine

21. Which of these factors is not part of the siting and permitting process?

- (A) proximity to existing power lines
- (B) temperature at the site
- (C) height of objects on the site
- (D) wind speed at the site