

托福经典阅读练习详解: Electricity from Wind

Since 1980, the use of wind to produce electricity has been growing rapidly. In 1994 there were nearly 20,000 wind turbines worldwide, most grouped in clusters called wind farms that collectively produced 3,000 megawatts of electricity. Most were in Denmark (which got 3 percent of its electricity from wind turbines) and California (where 17,000 machines produced 1 percent of the state's electricity, enough to meet the residential needs of a city as large as San Francisco). In principle, all the power needs of the United States could be provided by exploiting the wind potential of just three states—North Dakota, South Dakota, and Texas.

Large wind farms can be built in six months to a year and then easily expanded as needed. With a moderate to fairly high net energy yield, these systems emit no heat-trapping carbon dioxide or other air pollutants and need no water for cooling; manufacturing them produces little water pollution. The land under wind turbines can be used for grazing cattle and other purposes, and leasing land for wind turbines can provide extra income for farmers and ranchers.

Wind power has a significant cost advantage over nuclear power and has become competitive with coal-fired power plants in many places. With new technological advances and mass production, projected cost declines should make wind power one of the world's cheapest ways to produce electricity. In the long run, electricity from large wind farms in remote areas might be used to make hydrogen gas from water during periods when there is less than peak demand for electricity. The hydrogen gas could then be fed into a storage system and used to generate electricity when additional or backup power is needed. Wind power is most economical in areas with steady winds. In areas where the wind dies down, backup electricity from a utility company or from an energy storage system becomes necessary. Backup power could also be provided by linking wind farms with a solar cell, with conventional or pumped-storage hydropower, or with efficient natural-gas-burning turbines. Some drawbacks to wind farms include visual pollution and noise, although these can be overcome by improving their design and locating them in isolated areas.

Large wind farms might also interfere with the flight patterns of migratory birds in certain areas, and they have killed large birds of prey (especially hawks, falcons, and eagles) that prefer to hunt along the same ridge lines that are ideal for wind turbines. The killing of birds of prey by wind turbines has pitted environmentalists who champion wildlife protection against environmentalists who promote renewable wind energy. Researchers are evaluating how serious this problem is and hope to find ways to eliminate or sharply reduce this problem. Some analysts also contend that the number of birds killed by wind turbines is dwarfed by birds killed by other human-related sources and by the potential loss of entire bird species from possible global warming. Recorded deaths of birds of prey and other birds in wind farms in the United States currently amount to no more than 300 per year. By contrast, in the United States an estimated 97 million birds are killed each year when they

collide with buildings made of plate glass, 57 million are killed on highways each year; at least 3.8 million die annually from pollution and poisoning; and millions of birds are electrocuted each year by transmission and distribution lines carrying power produced by nuclear and coal power plants.

The technology is in place for a major expansion of wind power worldwide. Wind power is a virtually unlimited source of energy at favorable sites, and even excluding environmentally sensitive areas, the global potential of wind power is much higher than the current world electricity use. In theory, Argentina, Canada, Chile, China, Russia, and the United Kingdom could use wind to meet all of their energy needs. Wind power experts project that by the middle of the twenty-first century wind power could supply more than 10 percent of the world's electricity and 10-25 percent of the electricity used in the United States.

Paragraph 1: Since 1980, the use of wind to produce electricity has been growing rapidly. In 1994 there were nearly 20,000 wind turbines worldwide, most grouped in clusters called wind farms that collectively produced 3,000 megawatts of electricity. Most were in Denmark (which got 3 percent of its electricity from wind turbines) and California (where 17,000 machines produced 1 percent of the state's electricity, enough to meet the residential needs of a city as large as San Francisco). In principle, all the power needs of the United States could be provided by exploiting the wind potential of just three states—North Dakota, South Dakota, and Texas.

1. Based on the information in paragraph 1, which of the following best explains the term wind farms?

- Arms using windmills to pump water
- Research centers exploring the uses of wind
- Types of power plant common in North Dakota
- Collections of wind turbines producing electric power

Paragraph 2: Large wind farms can be built in six months to a year and then easily expanded as needed. With a moderate to fairly high net energy yield, these systems emit no heat-trapping carbon dioxide or other air pollutants and need no water for cooling; manufacturing them produces little water pollution. The land under wind turbines can be used for grazing cattle and other purposes, and leasing land for wind turbines can provide extra income for farmers and ranchers.

2. The word emit in the passage is closest in meaning to

- Use
- Require

Release

Destroy

Paragraph 3: Wind power has a significant cost advantage over nuclear power and has become competitive with coal-fired power plants in many places. With new technological advances and mass production, projected cost declines should make wind power one of the world's cheapest ways to produce electricity. In the long run, electricity from large wind farms in remote areas might be used to make hydrogen gas from water during periods when there is less than peak demand for electricity. The hydrogen gas could then be fed into a storage system and used to generate electricity when additional or backup power is needed.

Paragraph 4: Wind power is most economical in areas with steady winds. In areas where the wind dies down, backup electricity from a utility company or from an energy storage system becomes necessary. Backup power could also be provided by linking wind farms with a solar cell, with conventional or pumped-storage hydropower, or with efficient natural-gasburning turbines. Some drawbacks to wind farms include visual pollution and noise, although these can be overcome by improving their design and locating them in isolated areas.

3. Based on the information in paragraph 3 and paragraph 4, what can be inferred about the states of North Dakota, South Dakota, and Texas mentioned at the end of paragraph 1?

They rely largely on coal-fired power plants.

They contain remote areas where the winds rarely die down.

Over 1 percent of the electricity in these states is produced by wind farms.

Wind farms in these states are being expanded to meet the power needs of the United States.

4. According to paragraph 3, which of the following is true about periods when the demand for electricity is relatively low?

These periods are times when wind turbines are powered by hydrogen gas.

These periods provide the opportunity to produce and store energy for future use.

These periods create storage problems for all forms of power generation.

These periods occur as often as periods when the demand for electricity is high.

5. In paragraph 4, the author states that in areas where winds are not steady

Power does not reach all customers

Wind farms cannot be used

Solar power is more appropriate

Backup systems are needed

6. According to paragraph 4, what can be inferred about the problems of visual pollution and noise associated with wind farms?

Both problems affect the efficiency of wind farms.

Possible solutions are known for both problems.

Wind power creates more noise than visual pollution.

People are more concerned about visual pollution than noise.

Paragraph 5: Large wind farms might also interfere with the flight patterns of migratory birds in certain areas, and they have killed large birds of prey (especially hawks, falcons, and eagles) that prefer to hunt along the same ridge lines that are ideal for wind turbines. The killing of birds of prey by wind turbines has pitted environmentalists who champion wildlife protection against environmentalists who promote renewable wind energy. Researchers are evaluating how serious this problem is and hope to find ways to eliminate or sharply reduce this problem. Some analysts also contend that the number of birds killed by wind turbines is dwarfed by birds killed by other human-related sources and by the potential loss of entire bird species from possible global warming. Recorded deaths of birds of prey and other birds in wind farms in the United States currently amount to no more than 300 per year. By contrast, in the United States an estimated 97 million birds are killed each year when they collide with buildings made of plate glass, 57 million are killed on highways each year; at least 3.8 million die annually from pollution and poisoning; and millions of birds are electrocuted each year by transmission and distribution lines carrying power produced by nuclear and coal power plants.

7. The phrase this problem in the passage refers to

Interference with the flight patterns of migrating birds in certain areas

Building ridge lines that are ideal for wind turbines

The killing of birds of prey by wind turbines

Meeting the demands of environmentalists who promote renewable wind energy

8. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

Hawks, falcons, and eagles prefer to hunt along ridge lines, where wind turbines can kill large numbers of migratory birds.

Wind turbines occasionally cause migratory birds to change their flight patterns and therefore may interfere with the areas where birds of prey prefer to hunt.

Some of the best locations for large wind farms are places that may cause problems for migrating birds and birds of prey.

Large wind farms in certain areas kill hawks, falcons, and eagles and thus might create a more ideal path for the flight of migratory birds.

9. In paragraph 5, why does the author give details about the estimated numbers of birds killed each year?

To argue that wind farms should not be built along ridge lines

To point out that the deaths of migratory birds exceed the deaths of birds of prey

To explain why some environmentalists oppose wind energy

To suggest that wind turbines result in relatively few bird deaths

10. The phrase amount to in the passage is closest in meaning to

Can identify

Change

Are reduced by

Total

Paragraph 6: The technology is in place for a major expansion of wind power worldwide. Wind power is a virtually unlimited source of energy at favorable sites, and even excluding environmentally sensitive areas, the global potential of wind power is much higher than the current world electricity use. In theory, Argentina, Canada, Chile, China, Russia, and the United Kingdom could use wind to meet all of their energy needs. Wind power experts project that by the middle of the twenty-first century wind power could supply more than 10 percent of the world's electricity and 10-25 percent of the electricity used in the United States.

11. The word project in the passage is closest in meaning to

Estimate

Respond

Argue

Plan

12. Which of the following statements most accurately reflects the author's opinion about wind energy?

- Wind energy production should be limited to large wind farms.
- The advantages of wind energy outweigh the disadvantages.
- The technology to make wind energy safe and efficient will not be ready until the middle of the twenty-first century.
- Wind energy will eventually supply many countries with most of their electricity.

Paragraph 1: Since 1980, the use of wind to produce electricity has been growing rapidly.

■ In 1994 there were nearly 20,000 wind turbines worldwide, most grouped in clusters called wind farms that collectively produced 3,000 megawatts of electricity. ■ Most were in Denmark (which got 3 percent of its electricity from wind turbines) and California (where 17,000 machines produced 1 percent of the state's electricity, enough to meet the residential needs of a city as large as San Francisco). ■ In principle, all the power needs of the United States could be provided by exploiting the wind potential of just three states—North Dakota, South Dakota, and Texas. ■

13. Look at the four squares ■ that indicate where the following sentence could be added to the passage.

Some companies in the power industry are aware of this wider possibility and are planning sizable wind-farm projects in states other than California.

Where would the sentence best fit?

Click on a square ■ to add the sentence to the passage.

14. Directions: An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage. Some sentences do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage. This question is worth 2 points.

In the future, wind power is likely to become a major source of the world's energy supply.

Answer Choices

- Wind farms have already produced sufficient amounts of electricity to suggest that wind power could become an important source of electric power.
- Wind power has several advantages, such as low pollution and projected cost declines, compared to other energy sources.

Responding to environmentalists concerned about birds killed by wind turbines, analysts point to other human developments that are even more dangerous to birds.

The wind energy produced by just a small number of states could supply all of the power needs of the United States.

Although wind power is not economical in areas with steady winds, alternative wind sources can be used to simulate wind power.

Smaller countries, which use less electricity than large countries, are especially suited to use wind power to meet all their energy needs.

Drag your answer choices to the spaces where they belong. To remove an answer choice, click on it. To review the passage, click on View Text.

参考答案:

1. 4

2. 3

3. 2

4. 2

5. 4

6. 2

7. 3

8. 3

9. 4

10. 4

11. 1

12. 2

13. 4

14. 1 2 3