

## Text C Wind energy

Wind energy has been exploited through millennia. Long before the Current Era, ancient Civilizations in China, India and Persia used wind to pump up water and to mill grain. Already in early medieval times windmills were a known technology throughout Europe, and the windmill remained the primary energy source till the arrival of the steam engine. In countries such as Denmark that did not have their own coal supply, the windmill continued to have a central position. In 1916 alone Denmark built more than 1,300 new windmills.

Being the world leader in wind power, windmills in Denmark still produced only about 9 percent of all Danish electricity in 1998. In the US, windmills produced just 0.1 percent of the total electricity production in 1998.

But problems will arise if a significant part of a nation's electricity requirements are to be met by wind power. Close to inhabited areas windmill noise can be a nuisance. Moreover, to be effective, windmills need to be placed in open environments, and here they easily mar the scenery. The only long-term solution is placing windmills far out to sea. Not only will there be few if any esthetic problems but windmills are typically 50 percent more effective here.

Critics of windmills often point out that they are still not profitable, that they require much energy to produce, and that they kill birds. As we saw above, windmills are still not fully competitive, although they are probably no more than 30-50 percent more expensive, and even less when including the social and environmental costs of continued use of fossil fuels. In the longer run, they will undoubtedly be competitive or even cheaper.

It is also objected that windmills themselves demand quite a bit of energy to be produced: the steel has to be mined, smelted and rolled, and the windmill itself has to be transported and in the end disposed of. However, going over the extended energy account, it turns out that a modern windmill can produce the energy used for its own production within just three months.

It is true that windmills kill birds, although the problem will be much smaller at sea. In Denmark it is estimated that about 30,000 birds die in collisions with windmills each year. In the US the number is about 70,000.

### VOCABULARY:

To mill	МОЛОТЬ	Undoubtedly	Несомненно
Grain	Зерно	Steel	Сталь
Steam engine	Паровой двигатель	To mine	Добывать
Inhabited	Населенный	To smelt	Расплавлять

Noise	Шум	To roll	Прокатывать
Nuisance	Помеха	To go over	Внимательно изучать
To mar	Портить	Account	Счет
Scenery	Пейзаж	Collision	Столкновения
Esthetic	Эстетический	Extended	Расширенный

### EXERCISE 1

Соедините переводы с соответствующими выражениями на английском языке:

1. Задолго до нашей эры	1. A technology known throughout Europe
2. В начале средневековья	2. In the end of disposal
3. Известная во всей Европе технология	3. It is also objected
4. Продолжает занимать центральное положение	4. Not to be still fully competitive
5. Будучи мировым лидером в чем-то	5. Long before the current era
6. Значительная часть национальных потребностей в электричестве	6. In early medieval times
7. Долгосрочное решение	7. To continue to have a central position
8. В долгосрочной перспективе	8. Being the world leader
9. Еще не быть до конца конкурентоспособным	9. In the long run
10. Также выдвигаются возражения	10. The only long-term solution
11. Конечный пункт назначения	11. A significant part of a nation's electricity requirements
12. Иметь собственные запасы угля	12. Quite a bit of energy to be produced
13. Удовлетворить требования	13. To have own coal supply

14. Не только из-за каких-то эстетических соображений	14. Not only will there be few if any esthetic problems
15. Дальнейшее использование угля	15. Continued use of coal
16. Производиться достаточно мало энергии	16. The requirements are to be met by
17. Взглянув на расширенный расчет стоимости энергии	17. Going over the extended energy account

## EXERCISE 2

Ответьте на вопросы: 1. How long has the wind energy been exploited? 2. How was the wind used by ancient civilizations? 3. When did first windmills appear? 4. Where did the windmill continue to have a central position? 5. How much energy do windmills produce in Denmark? 6. How many windmills were built in Denmark in 1916? 7. What problems do the modern windmills have today? 8. What do critics of windmills often point out?