Text B Solar energy

The largest part of the energy on Earth comes from the sun. Only a small part comes from radioactive processes within the Earth itself. The sun gives off so much energy that it is equivalent to a 180-watt bulb perpetually lighting up every single square meter on Earth. Of course energy is not distributed equally - the tropics receive more than 250 watts whereas the polar regions get only about 100 watts.

The solar energy influx is equivalent to about 7,000 times our present global energy consumption. The yearly solar energy by far exceeds any other energy resource. Or put in a different way: even with our relatively ineffective solar cells, a square area in the tropics 469 km (291 miles) on each side - 0.15 percent of Earth's land mass - could supply all our current energy requirements. In principle this area could be placed in the Sahara Desert (of which it would take up 2.6 percent) or at sea. In reality, of course, one would not build a single, central power plant, but the example underscores partly how little space really is necessary to cover our energy needs, partly that the area can be placed somewhere of little or no biological or commercial value.

The remote Indonesian village of Sukatani was changed literally overnight when solar cells were installed in 1989. The equatorial nights, which last 12 hours all year round, previously left little to do. But today, children can do their homework after supper, the village sports a new motorized well pump providing a steady supply of water for better sanitation, and now some of the local waning (shops) are open after sunset and television sets provide entertainment and a window on the wider world.

Solar energy can also be exploited directly through heating and indirectly by growing plants, later to be burnt (biomass). In Denmark it is estimated that direct solar energy can provide about 10-12 percent of our energy. In the US also, biomass is predicted to have substantial growth. The US Energy Information Agency estimates that solar energy could cover the entire American energy requirements more than 3.5 times over. But for this to become reality a lot of ingenuity is required.

Japan has started integrating solar cells in building materials, letting them become part of roofs and walls. Others have produced watertight thin-film ceramic solar cells to replace typical roofing materials. In Wales an experimental center open to visitors has chosen solar cells not only to supply the building with electricity, but also because it can save costs for traditional roofing.

VOCABULARY:

Radioactive	Радиоактивный	pump	Насос
Bulb	Лампочка	Steady	Постепенно
Perpetually	Бесконечно	Supply	Снабжение
Influx	Приток	Sanitation	Санитария
Cell	Элемент	To exploit	Эксплуатировать
To exceed	Превышать	Biomass	Биомасса
By far	Безусловно	Ingenuity	Изобретательность
To illustrate	Иллюстрировать	Watertight	Водонепроницаемый
Requirement	Потребности	Thin-film	Тонкопленочная
To underscore	Подчеркивать	Ceramic	Керамика
Indonesian	Индонезийский	Literally	Буквально
To sport	Использовать		

EXECISE 1

Ответьте на вопросы: 1. Where does the largest part of the energy come from? 2.How much energy does the sun give off? 3. How is the sun energy distributed on the Earth? 4. Does the solar energy influx cover our present global energy consumption? 5. How much area in the tropics is required to cover all our current energy consumption? 6. How did the Indonesian village change when solar cells were installed in 1982? 7. How solar energy can be exploited? 8. How are solar cells used in Japan? 9. What is done in Wales for using solar cells?

EXECISE 2

Соедините переводы с соответствующими словосочетаниями на английском языке:

1. To leave little to do	1. Распространять равномерно
2. The example underscores partly	2. Поток солнечной энергии
3. Watertight thin-film ceramic cells	3. Пример частично подчеркивает
4. For this to become reality	4. Не представляющий коммерческого интереса

5. To change literally overnight	5. Масштаб взаимоотношений
6. To illustrate clearly	6. Ясно показывать
7. The solar energy influx	7. Тотально измениться за одну ночь
8. To be of no commercial value	8. Оставлять мало времени для жизнедеятельности
9. To let to become the part	9. Позволить стать частью
10. To distribute equally	10. Чтобы это стало реальностью
11. Or put in different way	11. Водонепроницаемые тонкопленочные керамические фотоэлементы
12. A steady water supply for better sanitation	12. Постоянное водоснабжение для создания лучших санитарных условий
13. The scale of these relationships	13. Или пойти другим путем