

## Text B The basic greenhouse effect

The main concern of climate change is global warming and the predicted warming is based on the so-called greenhouse effect. The fundamental principle of the greenhouse effect is really quite simple and entirely uncontroversial. Several types of gases can reflect or trap heat, including water vapor, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), laughing gas (N<sub>2</sub>O), chlorofluorocarbons (CFC) gases and ozone. Together they are known as greenhouse gases.

The greenhouse gases trap some of the heat emitted by the Earth, rather like having a blanket wrapped around the globe. The basic greenhouse effect is good - if the atmosphere did not contain greenhouse gases the average temperature on the Earth would be approximately 33° C (59 °F) colder and it is unlikely that life as we know it would be able to exist.

The problem is that man has increased the quantity of greenhouse gases, CO<sub>2</sub> in particular, in the atmosphere. About 80 percent of the extra CO<sub>2</sub> comes from the combustion of oil, coal and gas whereas the other 20 percent comes from deforestation and other land changes in the tropics. About 55 percent of the released CO<sub>2</sub> is absorbed again by the oceans, by northern forest regrowth, and generally by increased plant growth (plants use CO<sub>2</sub> as fertilizer), but the rest is added to the atmosphere, such that the concentration of CO<sub>2</sub> has increased by 31 percent from preindustrial times to the present day.

If the extra greenhouse gases, and among them CO<sub>2</sub> reflect heat, more greenhouse gases in the atmosphere will (everything else being equal) lead to an increase in the temperature on Earth. This is the so-called anthropogenic greenhouse effect, the extra, man-made greenhouse effect. This effect is our main interest. We will in the following just call it the greenhouse effect.

### VOCABULARY:

|                 |             |              |               |
|-----------------|-------------|--------------|---------------|
| Uncontroversial | Неоспоримый | Laughing gas | Веселящий газ |
| To trap         | Удерживать  | To wrap      | Заворачивать  |
| Vapor           | Пар         | Antropogenic | Антропогенный |
| Methane         | Метан       |              |               |

### EXERCISE 1

ОТВЕТИТЕ НА ВОПРОСЫ: 1. What are the predictions about future warming based on? 2. What is the fundamental principle of green house effect? 3. Is the basic green effect really good? 4. Why has the greenhouse effect become to affect the

climate negatively? 5. Where does extra carbon dioxide come from? 6. What part of the released carbon dioxide is added to the atmosphere? 7. Explain please what does the so called anthropogenic greenhouse effect mean?

## EXECISE 2

Найдите эквиваленты: предсказываемое потепление, так называемый, быть известным как, основной принцип, средняя температура, известная нам форма жизни, способная к существованию, возобновление роста, представляющая для нас основной интерес, другие изменения состояния земель, дополнительные газы, в дальнейшем.

## EXECISE 3

Составьте фразы, соответствующие содержанию текста:

|   |               |                              |
|---|---------------|------------------------------|
| 1. More greenhouse gases in the atmosphere will lead to | an increase   | in the temperature on Earth. |
|   | a decrease    |                              |
|   | the stability |                              |

|   |                                    |
|---|------------------------------------|
| 2. About 80 percent of the extra CO <sub>2</sub> comes from | combustion of oil, coal and gas.   |
|   | deforestation.                     |
|   | other land changes in the tropics. |

|   |   |
|---|---|
| 3. The considerable part of the released CO <sub>2</sub> is absorbed again, and generally | by the oceans.  |
|   | by northern forest regrowth.  |
|   | by increased plant growth (plants use CO <sub>2</sub> as fertilizer). |

|   |                          |
|---|--------------------------|
| 4. Several types of gases, including water vapor, carbon dioxide (CO <sub>2</sub> ), methane (CH <sub>4</sub> ), laughing gas (N <sub>2</sub> O), CFC gases and ozone are known | as greenhouse gases.     |
|   | as climate change gases. |
|   | as easy gases.           |

|                         |         |  |
|-------------------------|---------|--|
| 5. The greenhouse gases | trap    | some of the heat emitted by the Earth. |
|                         | reflect |  |
|                         | absorb  |  |

|  |                   |
|--|-------------------|
| 6. The main concern of climate change is | global warming.   |
|  | global cooling.   |
|  | global stability. |