ИСКОПАЕМОЕ ТОПЛИВО

Ископаемое или газовое топливо - это топливо, образованное природными ресурсами, такими как анаэробное разложение погребенных мертвых организмов. Возраст организмов и их ископаемого топлива обычно составляет миллионы лет, а иногда превышает 650 миллионов лет. Эти виды топлива содержат высокий процент углерода и углеводородов.

Ископаемое топливо варьируется от летучих материалов с низким отношением углерода: водорода, таких как метан, к жидкой нефти и нелетучих материалов, состоящих из почти чистого углерода, таких как антрацит. Метан можно найти на месторождениях углеводородов, в одиночку, связанных с нефтью, или в форме клатратов метана. Общепринято, что они образовались из окаменелых останков мертвых растений и животных под воздействием тепла и давления в земной коре на протяжении сотен миллионов лет. Эта биогенная теория была впервые введена Георгом Агриколой в 1556 году, а затем Михаилом Ломоносовым в 18 веке.

По оценкам Управления энергетической информации, в 2007 году первичные источники энергии состояли из нефти 36,0%, угля 27,4%, природного газа 23,0%, что составляет 86,4% доли ископаемого топлива в потреблении первичной энергии в мире. К неископаемым источникам в 2006 году относились гидроэлектростанции 6,3%, ядерные 8,5% и другие (геотермальные, солнечные, приливные, ветровые, древесные отходы) в количестве 0,9 процентов. Мировое потребление энергии росло примерно на 2,3% в год.

Ископаемое топливо является невозобновляемым ресурсом, потому что на его формирование уходит миллионы лет, а запасы истощаются гораздо быстрее, чем формируются новые. Производство и использование ископаемого топлива порождают экологические проблемы. Поэтому в настоящее время ведется глобальное движение в направлении производства возобновляемой энергии, чтобы помочь удовлетворить растущие потребности в энергии.

В результате сжигания ископаемого топлива образуется около 21,3 миллиарда тонн (21,3 гигатонн) углекислого газа в год, но, согласно оценкам, природные процессы могут поглощать только около половины этого количества, поэтому чистое увеличение содержания углекислого газа в атмосфере составляет 10,65 миллиарда тонн. в год (одна тонна углерода в атмосфере эквивалентна 44/12 или 3,7 тонны углекислого газа). Углекислый газ является одним из парниковых газов, который усиливает радиоактивное воздействие и способствует глобальному потеплению, в результате чего в ответ повышается средняя температура поверхности Земли, что, по мнению ученых, вызовет серьезные неблагоприятные последствия.

**3. Answer the following sentences:**

1.           What is the other name for [fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809)? **gas fuels**

2.          What are [fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) formed by? **by natural resources**

3.          What do [fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) contain? **a high percentage of carbon and hydrocarbons**

4.          What carbon do volatile materials contain? **low carbon: hydrogen ratios like methane**

5.          What carbon do nonvolatile materials contain? **almost pure carbon, like anthracite coal**

6.          What is the percentage of fossil fuel primary source usage? **86.4%**

7.          What is the percentage of non-fossil fuel primary source usage?

**Non-fossil sources in 2006 included hydroelectric 6.3%, nuclear 8.5%, and other (geothermal, solar, tide, wind, wood, waste) amounting 0.9 percent.**

8.          Are [fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) renewable resources? **Fossil fuels are non-renewable resources**

9.          How many tons of carbon dioxide does the burning of [fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) produce per year?

**The burning of fossil fuels produces around 21.3 billion ton (21.3 gigaton) of carbon dioxide per year**

10.     How many of this amount can natural processes absorb?

**natural processes can only absorb about half of that amount**

11.     Does carbon dioxide enhance radioactive forcing and contribute to global warming? **Yes**

## 4. Fill in the missed words and word combinations:

1.    **Non-fossil** sources in 2006 included hydroelectric 6.3%, nuclear 8.5%, and (geothermal, solar, tide, wind, wood, waste) amounting 0.9 percent.

2.  A global movement toward the **generation** of renewable energy is therefore under way to help meet increased energy needs.

3.  Carbon dioxide is one of the **greenhouse** gases that enhances radioactive forcing and contributes to... warming.

4.  [Fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) **are non-renewable** resources.

5.  [Fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) or **gas fuels** are fuels formed by natural resources.

6.  [Fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) range from **volatile** materials with **low** carbon to **nonvolatile** materials composed of almost **pure** carbon.

7.  [Fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) reserves are being depleted much **faster** than new ones are being formed.

8.  In 2007 **primary** sources of energy consisted of petroleum 36.0%, coal 27.4%, natural gas 23.0%

9.  It causes the **average** surface temperature of the Earth to rise in response.

10.                    It is generally accepted that they formed from the fossilized remains of dead plants and animals by **exposure** to heat and pressure in the Earth's crust over hundreds of millions of years.

11.                       Methane can be found in **hydrocarbon** fields.

12.                       Natural processes can only **absorb** about half of that amount.

13.                       The burning of [fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) produces around 21.3 billion ton of **carbon dioxide** per year.

14.                       The production and use of [fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) raise **environmental** concerns.

15.                       This **biogenic** theory was first introduced by Georg Agricola in 1556 and later by Mikhail Lomonosov in the 18th century.

16.                       World energy **consumption** was growing about 2.3% per year.

## 5. Put the verb into appropriate form:

## to be, to exceed, to contain, to range, to include, to take, to raise, to produce, to enhance, to contribute, to cause

1.    Carbon dioxide **will cause** major adverse effects.

2.  Carbon dioxide **enhances** radioactive forcing.

3.  Carbon dioxide contributes to global warming.

4.  [Fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) **take** millions of years to form.

5.  [Fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) **are**  non-renewable resources.

6.  [Fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) **contain** a high percentage of carbon and hydrocarbons.

7.  [Fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) **range** from volatile materials to nonvolatile materials.

8.  [Fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) or gas fuels **are** fuels formed by natural resources.

9.  In 2007 primary sources of energy **consisted** petroleum 36.0%, coal 27.4%, natural gas 23.0%.

10.                    It **causes** the average surface temperature of the Earth to rise in response

11.                    Non-fossil sources in 2006 **included** hydroelectric 6.3%, nuclear 8.5%, and others (geothermal, solar, tide, wind, wood, waste) amounting 0.9 percent.

12.                    Sometimes it **exceeds** 650 million years.

13.                    The age of the organisms and their resulting [fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) **is** typically millions of years.

14.                    The burning of [fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) **produces** around 21.3 billion ton of carbon dioxide per year.

15.                    The production and use of [fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) **raise** environmental concerns.

16.                    There **is**  a net increase of atmospheric carbon dioxide per year.

## 6. Make the following sentences interrogative and negative:

1.    [*Fossil fuels*](https://lms.kgeu.ru/mod/resource/view.php?id=82809) or *gas fuels* are fuels formed by natural resources.

[***Fossil fuels***](https://lms.kgeu.ru/mod/resource/view.php?id=82809)**or *gas fuels* are not fuels formed by natural resources.**

***Are*** [***fossil fuels***](https://lms.kgeu.ru/mod/resource/view.php?id=82809)**or *gas fuels* fuels formed by natural resources?**

2.  The age of the buried dead organisms and their resulting is typically millions of years.

**The age of the buried dead organisms and their resulting is not typically millions of years.**

**Is the age of the buried dead organisms and their resulting typically millions of years?**

3.  It sometimes exceeds 650 million years.

**It sometimes does`t exceed 650 million years.**

**Does it sometimes exceed 650 million years?**

4.  These fuels contain a high percentage of carbon and hydrocarbons.

**These fuels don`t contain a high percentage of carbon and hydrocarbons.**

**Do these fuels contain a high percentage of carbon and hydrocarbons?**

5.  [Fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) range from volatile materials to nonvolatile materials.

[**Fossil fuels**](https://lms.kgeu.ru/mod/resource/view.php?id=82809)**don`t range from volatile materials to nonvolatile materials.**

**Do** [**Fossil fuels**](https://lms.kgeu.ru/mod/resource/view.php?id=82809)**range from volatile materials to nonvolatile materials?**

6.  Nonvolatile materials are composed of almost pure carbon.

**Nonvolatile materials are not composed of almost pure carbon.**

**Are Nonvolatile materials composed of almost pure carbon?**

7.  In 2007 primary sources of energy consisted of petroleum 36.0%, coal 27.4%, and natural gas 23.0%.

**In 2007 primary sources of energy didn`t consist of petroleum 36.0%, coal 27.4%, and natural gas 23.0%.**

**Did In 2007 primary sources of energy consist of petroleum 36.0%, coal 27.4%, and natural gas 23.0%?**

8.  It amounted to an 86.4% share for [fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) in primary energy consumption in the world.

**It did not amount to an 86.4% share for**[**fossil fuels**](https://lms.kgeu.ru/mod/resource/view.php?id=82809)**in primary energy consumption in the world.**

**Did It amount to an 86.4% share for**[**fossil fuels**](https://lms.kgeu.ru/mod/resource/view.php?id=82809)**in primary energy consumption in the world?**

9.  Non-fossil sources in 2006 included hydroelectric 6.3%, nuclear 8.5%, and (geothermal, solar, tide, wind, wood, waste) that amounted 0.9 percent.

**Non-fossil sources in 2006 didn`t include hydroelectric 6.3%, nuclear 8.5%, and (geothermal, solar, tide, wind, wood, waste) that amounted 0.9 percent.**

**Did non-fossil sources in 2006 included hydroelectric 6.3%, nuclear 8.5%, and (geothermal, solar, tide, wind, wood, waste) that amounted 0.9 percent?**

10.                    World energy consumption was growing about 2.3% per year.

**World energy consumption wasn`t growing about 2.3% per year.**

**Was world energy consumption growing about 2.3% per year?**

11.                    [Fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) are non-renewable resources.

[**Fossil fuels**](https://lms.kgeu.ru/mod/resource/view.php?id=82809)**aren`t non-renewable resources.**

**Are** [**fossil fuels**](https://lms.kgeu.ru/mod/resource/view.php?id=82809) **non-renewable resources?**

12.                    They take millions of years to form.

**They don`t take millions of years to form.**

**Do they take millions of years to form?**

13.                    [Fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) reserves are being depleted much faster than new ones are being formed.

[**Fossil fuels**](https://lms.kgeu.ru/mod/resource/view.php?id=82809)**reserves aren`t being depleted much faster than new ones are being formed.**

**Are f**[**ossil fuels**](https://lms.kgeu.ru/mod/resource/view.php?id=82809)**reserves being depleted much faster than new ones are being formed?**

14.                    The production and use of [fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) raise environmental concerns.

**The production and use of**[**fossil fuels**](https://lms.kgeu.ru/mod/resource/view.php?id=82809)**don`t raise environmental concerns.**

**Do the production and use of**[**fossil fuels**](https://lms.kgeu.ru/mod/resource/view.php?id=82809)**raise environmental concerns?**

15.                    The burning of [fossil fuels](https://lms.kgeu.ru/mod/resource/view.php?id=82809) produces a large amount of carbon dioxide per year.

**The burning of**[**fossil fuels**](https://lms.kgeu.ru/mod/resource/view.php?id=82809)**doesn`t produce a large amount of carbon dioxide per year.**

**Does the burning of**[**fossil fuels**](https://lms.kgeu.ru/mod/resource/view.php?id=82809)**produce a large amount of carbon dioxide per year?**

16.                    Natural processes can only absorb about half of that amount, so there is a net increase of atmospheric carbon dioxide per year.

Natural processes cann`t only absorb about half of that amount.

Can natural processes only absorb about half of that amount?

17.                    Carbon dioxide is one of the greenhouse gases that enhances radioactive forcing and contributes to global warming

**Carbon dioxide isn`t one of the greenhouse gases that enhances radioactive forcing and contributes to global warming**

**Is carbon dioxide one of the greenhouse gases that enhances radioactive forcing and contributes to global warming?**

18.                    Carbon dioxide causes the average surface temperature of the Earth to rise in response.

**Carbon dioxide doesn`t cause the average surface temperature of the Earth to rise in response.**

**Does carbon dioxide cause the average surface temperature of the Earth to rise in response?**

19.                    That will cause major adverse effects.

**That won`t cause major adverse effects.**

**Will that cause major adverse effects?**