B2. Types of Non-Renewable Energy

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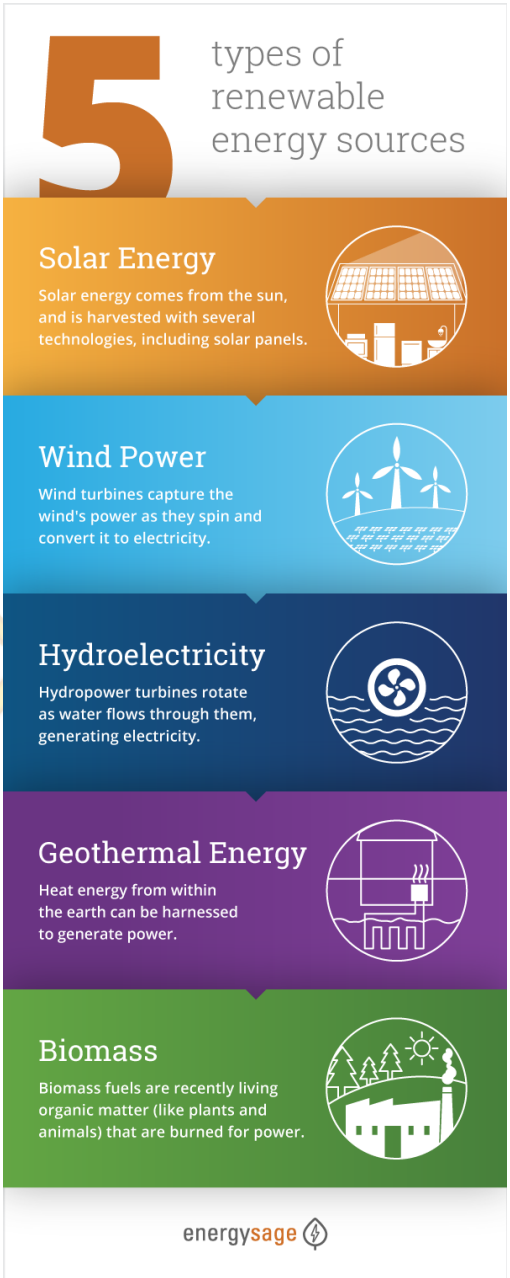
Energy is what makes things work and gives us the power to do all kinds of activities. There are two main types of energy: renewable and non-renewable. Non-renewable energy sources are resources that cannot be easily replaced or replenished in a short amount of time. These energy sources are formed over millions of years and once they are used up, they cannot be replaced. Let's learn about some common types of non-renewable energy.



Coal Energy
Coal is a black or brownish-black rock that is found deep underground. It is one of the most widely used sources of non-renewable energy. When coal is burned, it releases energy in the form of heat, which can be used to generate electricity. However, burning coal also produces a lot of pollution and greenhouse gases, which can harm the environment.

Oil Energy
Oil, also known as petroleum, is another major non-renewable energy source. It is a thick, dark liquid that is found deep beneath the Earth's surface. Oil is often refined into gasoline, diesel, and other fuels that power vehicles and machines. Like coal, burning oil releases energy but also contributes to air pollution and climate change.

Natural Gas Energy
Natural gas is a fossil fuel that is found alongside oil and coal deposits. It is a mixture of gases, mainly methane, and is used as a fuel for heating, cooking, and electricity generation. Natural gas is considered a cleaner-burning fossil fuel compared to coal and oil, but it still releases greenhouse gases when burned.

Nuclear Energy
Nuclear energy is produced from the nucleus of an atom through a process called nuclear fission. In nuclear power plants, atoms of uranium or plutonium are split apart, releasing a tremendous amount of heat. This heat is used to produce steam, which drives turbines to generate electricity. Nuclear energy does not produce greenhouse gases, but it comes with its own set of safety and environmental concerns.

Fossil Fuels
Coal, oil, and natural gas are all considered fossil fuels because they were formed from the remains of plants and animals that lived millions of years ago. These fuels are found underground and are extracted through mining or drilling.

Formation of Non-Renewable Energy
Non-renewable energy sources take millions of years to form. For example, coal is formed from plant material that has been buried and subjected to heat and pressure for millions of years. Oil and natural gas are formed from the remains of tiny marine organisms that lived in ancient seas.

Limited Supply
One of the biggest drawbacks of non-renewable energy sources is that they have a limited supply. Once we use up all the coal, oil, and natural gas deposits, we won't have any left. This is why scientists and engineers are working on finding alternative sources of energy that can be replenished naturally.

Environmental Impact
Another issue with non-renewable energy sources is their impact on the environment. Burning fossil fuels releases carbon dioxide and other pollutants into the atmosphere, contributing to global warming and air pollution.

Importance of Conservation
Given the limited supply and environmental impact of non-renewable energy sources, it is crucial to conserve energy and find ways to use it more efficiently. Conserving energy means using less of it and finding ways to reduce waste.

Transition to Renewable Energy
To address the challenges posed by non-renewable energy sources, many countries are transitioning to renewable energy sources like solar, wind, and hydroelectric power. These sources of energy are abundant and do not produce greenhouse gases, making them more sustainable for the future.

1. What are non-renewable energy sources?
    A) Energy sources that can be easily replaced
    B) Energy sources that are formed over millions of years
    C) Energy sources that are found above the ground
    D) Energy sources that are replenished quickly

2. What is coal used for?
    A) To power vehicles and machines
    B) To generate electricity
    C) To cook food
    D) To produce nuclear energy

3. Which non-renewable energy source is a thick, dark liquid?
    A) Natural gas

B) Coal
C) Oil
D) Nuclear energy

4. What is the main component of natural gas?
   A) Methane
   B) Carbon dioxide
   C) Uranium
   D) Plutonium

5. What is the process called when atoms of uranium or plutonium are split apart to release energy?
   A) Fossilization
   B) Combustion
   C) Nuclear fission
   D) Nuclear fusion

6. Why are coal, oil, and natural gas called fossil fuels?
   A) Because they are formed from the remains of ancient plants and animals
   B) Because they are found on the ocean floor
   C) Because they are formed from rocks deep underground
   D) Because they are found in the Arctic region

7. What is one of the biggest drawbacks of non-renewable energy sources?
   A) They are expensive to extract
   B) They have a limited supply
   C) They are difficult to transport
   D) They are not efficient

8. What impact do burning fossil fuels have on the environment?
   A) They release oxygen into the atmosphere
   B) They contribute to global warming and air pollution
   C) They create more land for farming
   D) They increase the number of trees on Earth

9. What is the importance of conserving energy?
   A) To reduce the need for fossil fuels
   B) To increase pollution
   C) To deplete non-renewable resources faster
   D) To waste energy

10. What are some examples of renewable energy sources?
    A) Coal and oil
    B) Natural gas and nuclear energy
    C) Solar and wind power
    D) Fossil fuels and hydroelectric power

ANSWERS & EXPLANATIONS

1. B - Energy sources that are formed over millions of years.
    - Non-renewable energy sources are formed over millions of years and cannot be easily replaced in a short amount of time.

2. B - To generate electricity.
    - Coal is burned to produce heat, which is used to generate electricity.

3. C - Oil.
    - Oil is a thick, dark liquid that is found underground and is commonly used as a fuel for vehicles and machines.

4. A - Methane.
    - Methane is the main component of natural gas.

5. C - Nuclear fission.
    - Nuclear fission is the process of splitting atoms of uranium or plutonium to release energy in nuclear power plants.

6. A - Because they are formed from the remains of ancient plants and animals.
    - Coal, oil, and natural gas are called fossil fuels because they were formed from the remains of plants and animals that lived millions of years ago.

7. B - They have a limited supply.
    - One of the biggest drawbacks of non-renewable energy sources is that they have a limited supply, which means they will eventually run out.

8. B - They contribute to global warming and air pollution.
    - Burning fossil fuels releases carbon dioxide and other pollutants into the atmosphere, contributing to global warming and air pollution.

9. A - To reduce the need for fossil fuels.
    - Conserving energy helps reduce the demand for non-renewable fossil fuels.

10. C - Solar and wind power.
    - Solar and wind power are examples of renewable energy sources that can be replenished naturally and do not produce greenhouse gases.