

МЕДИЦИНА, ПЕДАГОГИКА И ТЕХНОЛОГИЯ: ТЕОРИЯ И ПРАКТИКА

Researchbib Impact factor: 11.79/2023

SJIF 2024 = 5.444

Том 2, Выпуск 9, 30 Сентябрь

Alternative energy sources and their use
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ANNOSTATION.

In this article, we will focus on the types, advantages, limitations and current status of alternative energy sources. are energy sources that do not require resources. Alternative energy sources reduce emissions, which emit as many pollutants as conventional fuels and increase the risk of global warming. The use of domestic energy sources can reduce countries' dependence on energy imports.

Keywords:hydraulic energy. Solar panels, wind turbines, biomass.

Enter.

Today, interest and investment in alternative energy sources is increasing. Many countries are developing alternative energy sources to diversify their energy mix and ensure environmental sustainability. Advances in innovative technologies, energy storage and energy efficiency will help increase the competitiveness of alternative energy sources.

LITERATURE ANALYSIS AND METHODOLOGY.

The role of alternative energy sources is expected to increase in the future. As a result, there can be positive changes in the energy production and consumption systems, which will help to solve global warming and other environmental problems. A wider understanding of alternative energy sources and the development of effective strategies, in the future, sustainable and It is important to ensure the supply of clean energy. Alternative energy sources occupy an important place in the world energy system, and their importance is manifested in several main directions. Solar energy is energy that reaches the earth's surface through sunlight. Using solar panels and solar thermal collectors, this energy can be converted into electricity or heat. Among the advantages of

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solar energy are unlimited and renewable, less damage to the ecosystem and lower costs of energy production. Solar energy is a renewable resource because the sun continuously produces energy. This allows it to be used as an inexhaustible natural resource. Solar energy production does not emit carbon dioxide or other pollutants, which reduces air pollution and helps prevent global warming. Once installed, solar panels are relatively inexpensive to operate. They provide long-term service and require low energy production costs. The use of solar energy provides independence of energy sources to countries and regions. This is especially important for energy importing countries. Technologies based on solar energy, such as solar panels and solar thermal systems, promote high-tech and innovative industries, which contribute to new jobs and economic growth. Solar energy diversifies the energy mix and has multiple energy sources, which increases overall energy security. Solar energy can be used in a variety of settings, including homes, industrial facilities, and agriculture. This allows the energy source to be adapted to different needs. Solar panels can work efficiently for a long time. They can typically produce energy for 25-30 years or more.

Wind turbines use the kinetic energy of the wind. Wind energy is a clean and renewable energy source that reduces emissions during energy production. However, the efficiency of wind energy depends on the wind resources of the place. Wind power plants (or wind power plants) are structures that generate electricity using wind turbines. These stations convert the kinetic energy of the wind into electrical energy. A wind turbine transmits the movement of the wind through rotors to a generator that rotates, which produces electricity. Wind energy has the following advantages. Wind energy is an inexhaustible resource that is always available in nature. The energy produced by wind turbines is clean and does not emit gases or dust. Once built, wind farms have relatively low operating costs. However, wind farms also have some disadvantages. Wind speed and direction can change constantly, which can make it difficult to maintain power generation. A large area is required for the placement of wind farms, and in some areas there are restrictions on compatibility with urban infrastructure. The development of wind energy is very fast in the world, and many countries are making large investments in this field. For example, countries such as Denmark, Germany and the USA are the leading exporters of wind energy. Hydraulic power uses the kinetic energy of water flow.

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Electricity generated by floods or reservoirs can be economically efficient, but has environmental impacts, such as altering aquatic ecosystems. Hydropower is a method of generating electricity using the movement or pressure of a fluid. Usually, these energy systems are called hydroelectric plants (HPP). In the production of hydraulic energy, the liquid is mainly transferred through rivers or artificial reservoirs and their potential energy is converted into electrical energy. Water flowing down from a height converts potential energy into kinetic energy. When the water pressure goes from top to bottom, it rotates the rotors, which produces electricity through a generator. Water flows through turbines. Turbines convert the movement of water into rotating mechanical energy. The rotating parts of the turbine turn the generator, which produces electricity. Water resources are naturally renewable and inexhaustible. Waste and pollution are very low during hydropower generation. Reservoirs provide energy storage because water can be stored and released when needed. Continuous availability of water flows helps to stabilize the energy supply. The construction of large reservoirs can significantly affect the natural environment, for example, fauna and flora, migration, etc. Hydroelectric stations are only effective in certain locations, such as near large rivers or mountains. Changes in water resources or drought conditions can affect energy production. Hydropower has a long history of production worldwide, and it is the main source of renewable energy in many countries. For example, countries such as China, Canada, and Brazil are the leading countries in the production of hydraulic energy. Biomass is energy produced from organic materials such as wood, agricultural waste and other organic waste. Biomass energy is used to generate heat and electricity, and it emits biogenic carbon dioxide, but it also allows the recycling of waste. Scientific and technological research in the field of alternative energy is leading to new innovations. This field will be enriched by new energy storage technologies, energy-efficient materials and new methods of energy production. Innovation and technological development make alternative energy more efficient and affordable. Alternative energy sources play an important role in combating global warming and climate change. By reducing the use of conventional energy sources, the emission of carbon dioxide and other gases that contribute to climate change can be reduced. At the same time, it helps to make energy production less damaging to the ecosystem. Alternative energy sources are important in ensuring environmental sustainability, increasing energy independence, increasing economic benefits, improving social health, and fighting global warming.

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In the future, these sources are expected to form the main part of the global energy system, and they will be an important factor for sustainable and clean energy supply. Alternative energy sources provide a number of important benefits in meeting human needs. Pollutants released during conventional energy production are present in the air, water and soil and can harm human health. Alternative energy sources, on the other hand, avoid these emissions and improve air quality. As a result, respiratory systems, cardiovascular systems and other health problems are reduced. Alternative energy sources can be economically beneficial. New technologies and energy storage methods create innovation and jobs. The long-term costs of energy production are lower because solar panels and wind turbines do not require long-term maintenance. Alternative energy sources allow the use of local resources, which reduces countries' dependence on energy imports. Energy independence increases economic stability and improves political security because geopolitical forces dependent on energy sources are reduced. Development of alternative energy technologies increases energy efficiency. For example, energy storage technologies and energy-efficient materials optimize energy consumption. It also ensures the stability of the energy supply and helps to reduce energy costs. It encourages the development of the infrastructure needed to install alternative energy sources, especially solar panels and wind turbines. This, in turn, helps improve local infrastructure and economic growth. Alternative energy sources can help preserve local culture and historical values. For example, wind turbines or solar panels located in rural areas are used as alternatives to traditional energy sources, which are important for local communities.

Summary.

Alternative energy sources provide a number of key benefits in meeting human needs, including sustainable and clean energy supply, environmental protection, health improvement, economic benefits, energy independence, energy efficiency, infrastructure development, and preservation of social and cultural values. Therefore, the transition to alternative energy sources is an important step to make the global energy system more sustainable and efficient. Alternative energy sources provide a number of key benefits in meeting human needs, including stable and clean energy supply, environmental protection, health Sustainable energy resources are energy

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sources that help to protect the environment, social and economic stability in energy production and are available indefinitely or for a long time. These resources are important for reducing ecological footprints, increasing energy security and stimulating economic development. Sustainable energy resources are important in protecting the environment, improving energy security and supporting economic development. Each of these resources has its own characteristics, advantages and limitations, so by using and integrating them effectively, the sustainability of the global energy system can be increased.

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