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OAJI (USA) = 0.350

SOI: [1.1/TAS](#) DOI: [10.15863/TAS](#)

## International Scientific Journal Theoretical & Applied Science

p-ISSN: 2308-4944 (print) e-ISSN: 2409-0085 (online)

Year: 2021 Issue: 08 Volume: 100

Published: 30.08.2021 <http://T-Science.org>

QR – Issue



QR – Article



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## RELEVANCE OF TEACHING PHYSICS IN THE ENERGY SPHERE HIGHER EDUCATION

**Abstract:** *The world around us is full of endless sources of energy. Currently, some of them, such as solar energy, energy generated by the interaction of the Earth and the Moon, thermonuclear fusion energy, global warming energy, are not fully used. The difference between the growing demand for energy and the efficiency of scientific research is huge. A person can devote a significant part of his life to rest, study, creative activity, and as a result, he now lives a long life. The role of the engineer is very important in modern society. Engineers can apply the achievements of science directly to the production of society, using it to improve the quality and productivity of products.*

**Key words:** *Higher Education, Energy, Energy Consumption, Efficiency Improvement, Production Improvement, Savings Achievement, Complete Energy Supply Worldwide. Energy in the education system of Uzbekistan. Requirements for specialists in the field of energy.*

**Language:** English

**Citation:** Goibova, N. Z. (2021). Relevance of teaching physics in the energy sphere higher education. *ISJ Theoretical & Applied Science*, 08 (100), 389-391.

**Soi:** <http://s-o-i.org/1.1/TAS-08-100-73> **Doi:**  <https://dx.doi.org/10.15863/TAS.2021.08.100.73>

**Scopus ASCC:** 3304.

### Introduction

Electricity, which is a leading factor in modern development, is a tool for the development of all sectors of the economy. In evolution, he used the energy stored by nature for thousands of years. Along with this process, energy use methods are constantly being improved to get the most out of it. I closely related all human activities to energy consumption. The world is full of endless sources of energy. Currently, some of them, such as solar energy, energy generated by the interaction of the Earth and the Moon, thermonuclear fusion energy, and global warming energy, are not fully used. There is an intrinsic relationship between performance and energy consumption. The level of energy development reflects the level of development of the productive forces of society, the possibilities of scientific and technological progress and the standard of living of the population. Unfortunately, most of the energy consumed by humans is wasted because of the low efficiency of using available energy resources. Of the 7,500 Mt of annual energy consumption in the world, 2,200 Mt are wasted and, the rest is as heat.

However, even with an efficiency of 2200/7500 Mt, humanity cannot boast, because the energy radiated from the Sun to the Earth and amounting to 10,000,000 Mt per year is not taken into account here. Various scientific studies are being carried out to improve the efficiency of energy saving and the use of solar energy, and this shows their effectiveness. An example of this is the various mixed solar cells and the scientific work being done on them. However, the growth in energy consumption is surprisingly high and in high demand. The difference is huge when you compare the growing demand for energy and the efficiency of scientific research. A person can devote a significant part of his life to rest, study, creative activity, and as a result, he now lives a long life. When we look at energy needs, these examples can be divided into three main groups:

a) Food energy. It is more expensive than other types of energy: wheat is more expensive than coal when converted to the joule. The heat that feeds the body with food provides energy for its movement, mental and physical labor;

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b) Energy as heat for heating houses and cooking, which allows you to live in different climatic conditions and feed a person in different ways;

c) The energy that sustains the life of society. This energy is necessary to maintain the ability of goods and services, the personal movement of people and goods in space, the functioning of all communication systems (communications, communication). This energy consumption per capita is significantly higher than the energy used for food production. Energy or energy system means a unit of natural and artificial (manufactured) systems designed to receive, change, distribute and use many energy sources in the national economy. Energy plays an important role in human life. Its level of development determines the level of social productive forces and scientific and technological progress. The role of energy today is unique, and modern life is difficult to imagine without energy. Enormous forces that humanity uses the energy potential of the universe characterize the technical aspect of energy. For example, the power plants existing in the world have a capacity of 2 billion. kW. The total capacity of the power plants is 10 billion. KW. To provide this energy, humanity needs 40-50 billion tons of natural resources annually. Tons of fuel equivalent. However, the efficiency of natural energy sources does not exceed 0.2%. This is where one of the key energy problems arises - reducing losses when converting energy from one type to another. This requires the improvement of equipment and the rational use of the energy received, which should go beyond technology and be considered from a social point of view. Stimulating the reduction of energy losses due to the accumulation of heat in residential and industrial buildings, the development of accurate prices for electricity, low energy consumption with the maximum supplied consumption, lead to the solution of socio-economic issues. The rapid growth of the world's energy resources should be approached not only from a technical point of view but also from the point of view of the impact of energy equipment and fuel production on the environment. A general technical and environmental question arises: will the rapid development of the energy sector lead to the depletion of fuel reserves, and will this not happen, before humankind acquires new sources of thermonuclear energy? In any case, it is safe to say that fossil fuels will last for hundreds of years. For example, coal is enough for about 600-700 years. This does not necessarily mean that fuel economy is not an issue. Fuel consumption should be considered not only from a technical and biosphere point of view but also from a more socio-political point of view. 30% of the world's population uses 90% of the world's energy for their own needs, 70% of the population, mainly in developing countries, has 10% of the energy. Moreover, industrial development, living standards, and cultural development are inextricably linked to the

cost of the energy used. The world's energy resources are unevenly distributed. This is 500 million in different countries. Comparison of the number of wells required to produce a ton of oil. This will require 500,000 wells in the US, 50,000 in Russia, 600 in Iran, 300 in Saudi Arabia, and 100 in Kuwait. Many countries use imported energy sources. Japan, for example, imports over 80 percent of its energy (main oil) from the Gulf states. European countries also get about 20% of their energy from here. Energy devices created by human hands with their enormous power have a tremendous impact on the natural processes taking place in the biosphere. These effects often have negative consequences, and they all need to be considered from an environmental point of view. Energy has the following negative impacts on the environment:

- 1) mechanical pollution of air, water and land;
- 2) chemical pollution of air, water and land;
- 3) radioactive contamination of air, water and land;
- 4) thermal pollution;
- 5) ionization pollution;
- 6) high frequency and low frequency electromagnetic pollution;
- 7) noisy pollution;
- 8) consumption of air (oxygen);
- 9) land use;
- 10) water consumption.

These effects have a unique effect on the weather, changing the atmosphere. The types and meanings of these effects vary from one part of the world to another. We study the properties and interaction of energy flows from the point of view of their socio-economic, scientific, technical and environmental impact on human society. He is also engaged in obtaining energy sources for the national economy, creating devices that generate, transform and consume various types of energy, as well as the study of processes and laws.

In close contact with electrical, thermal, hydraulic and many other scientific disciplines, energy science requires the application of mathematics, physics, automation and cybernetics. The role of the engineer is very important in modern society. Engineers can apply the achievements of science directly to the production of society, using it to improve the quality and productivity of products. Consequently, they must be able to solve a wide range of problems of human society at a high scientific and technical level. According to the Law on Education adopted in the Republic of Uzbekistan, the national training program for highly qualified personnel has been transferred to a two-stage education system. According to this system, the training of highly qualified specialists at the 1st stage provides for the training of bachelors at the 2nd stage. Such a training system requires the introduction of modern training systems and technologies into the educational process.

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Many leading European technical universities now widely use modern teaching methods in addition to modern computer technologies connected to the global information systems of the Internet. Such textbooks allow displaying not only special visual aids on science, but also radio and video materials working on the Internet and in specially prepared programs, directly on a large screen using an overhead projector.

Such teaching methods are used in prestigious universities of the Republic of Uzbekistan. Our universities have introduced modern programs that cover a wide range of tasks in accordance with international standards for structure and teaching methods. Because energy management is an important tool for saving energy and reducing its environmental impact. We know that today the world produces electricity (up to 80%) mainly in thermal power plants that use energy as fuel.

Decreasing fuel stocks and rising operating costs are driving fuel growth. In addition, thermal power plants cause great damage to the environment. These losses are mainly manifested in the form of low-grade heat, nitrogen and sulfur oxides, and micron-sized powders. The goals of saving and more efficient use

of fuels and protecting the environment are being achieved through new energy production technologies, as well as increased use of non-traditional energy sources. The use of unconventional energy technologies and weapons in developed countries in our country will not only reduce energy costs, but also allow them to be wisely used and saved. Practical exercises will include the study of energy equipment, audit, the use of devices and equipment manufactured in European countries, as well as the introduction of energy management systems at enterprises and various buildings under construction and operation in Tashkent. One of the goals of these courses is to acquaint the audience with energy efficient technologies in industrial construction and utilities, which fully comply with modern requirements used abroad, and to introduce them in the country. Training in 3 areas: energy management in the energy sector. , rational use and conservation of energy in industry, transport, construction, housing, utilities and consumer services, as well as unconventional energy sources and energy waste. Ways of using disposal methods.

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