

## **O 143. THE IMPORTANCE OF RENEWABLE ENERGY SOURCES FOR THE ENVIRONMENT**

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**ABSTRACT:** All energy sources have positive and negative effects on the environment. These effects occur in different ways at every stage from the acquisition of energy resources to the consumption. It is possible to solve the energy need which has become the world's biggest problem without harming the environment with renewable energy sources and clean energy sources. In this article, positive environmental effects of renewable energy sources and negative effects of fossil fuels are discussed.

*Keywords: Renewable energy, environment, fossil fuels*

### **1. INTRODUCTION**

In the first stages of energy production, the environment was thought to be human-centered and the “anthropocentric” approach based on the idea that the environment should be in the service of humanity was exhibited (Özerkmen, 2002).

18. Economic growth starting after the century and about 2 centuries in the process of economic growth and environmental conflict, which is considered as priority, in natural life and with environmental degradation approaching the irreversible point, economic growth policies will also take care of Environment and natural life in the perspective of sustainable development. (Vina, Hoff and Derose, 2002)

Increasing energy demand causes rapid population growth, traffic intensity, urbanization and industrialization to increase the environmental problems. Most of the pollutants and greenhouse gases in the atmosphere are due to the energy sector. (Çukurçayır and Sağır, 2018).

Energy savings are required for a strong economy and a reduced pollution level. Considering that it is limited to environmental problems arising from the use of fossil resources, we can say that renewable energy sources are more environmentally friendly and economical. Renewable energy will be at the forefront of the use of fossil resources for the environment and the damage it has caused to this time will be reduced.

### **2. RENEWABLE ENERGY SOURCES**

It is defined by the ability to renew itself at the same rate as the energy from the source, or faster than the rate of depletion of the source. Renewable energy sources and fossil fuels are the characteristics that distinguish between fossil fuels once they are used and can not be converted again. Renewable energy sources can be converted to energy at an unlimited level, and can be thought of as free fuel. It is a clean type of energy, although it leads to reasonable levels of damage during manufacturing and installation phases, it exhibits an environmentally sensitive, non-polluting structure in the energy production phase. Most of the greenhouse gases in the world are due to energy production and consumption. To reduce greenhouse gases, investments in renewable energy technologies need to be increased. Renewable energy sources security of energy supply is important in terms of reducing dependence on foreign energy, reducing carbon emissions and creating jobs (Çoban and Kılınç, 2016). It is important to reduce emissions in the fight against greenhouse effect reduction. (Yakıncı and Kök, 2017). Acid rain and global warming are among the most worrying environmental problems lately.

Renewable energy refers to the “energy source within the evolution of nature, which can be the same as the next day” (Yılmaz and Kösem, 2011). In addition, renewable energy sources such as hydraulic, wind, current energy and tides, hydrogen, which are present in nature, which are mostly supplied on Earth and nature without needing any production process, which is not fossil-source (coal, oil and carbon-

derivative), which occurs at a low level while generating electrical energy, which has a much lower impact on (Seydoğulları, 2013).

Renewable energy sources (hydraulic, geothermal, solar, wind, biomass, wave, etc.), the countries' domestic resources within energy policies, contributing to energy supply security, being clean, contributing to the elimination of environmental concerns and the economic value-carrying characteristics within the framework of the Kyoto Protocol 5 are of great importance. Investing in renewable and clean technologies in developing countries has been facilitated even more because of the funding source created by the financial flexibility mechanisms of the Kyoto Protocol (Bayraç, 2011).

With 79% of the world's final energy production, fossil fuels rank first. This is followed by renewable energy sources with 18% share and nuclear energy with 3% share. While most of the share of renewable energy is traditional biomass, it is followed by large hydraulic, hot water/heating, power generation and biofuels respectively. Renewable energy sources such as electricity generation, water heating, greenhouse heating, drying, lighting, heating, chemical processes are used in many areas. The use of these resources in electricity generation is very important. The share of renewable resources in the world's electricity production is 18%. While the largest share of electricity produced from these sources is 16%, it is biomass and wind, solar, geothermal and so on. sources are monitoring. (GEKA, 2011). The "edible" energy source is only the "multiplier" energy source as much as it is consumed.

### **3. ENERGY, ENVIRONMENT AND SUSTAINABLE DEVELOPMENT**

The concept of "sustainable" was first used in the Brundtland report in the 1980s and refers to "the use of our existing resources enough for future generations" (Seydoğulları, 2013). Meaning, today, live without blocking tomorrow (Tıraş, 2011). The main characteristic of the concept used in different areas is that it takes the subject of the human future and contains the protection of the resources of the area it is used for. (Tıraş, 2011) According to Gilman (1992), sustainability continues to function until an uncertain future without depleting the main resources of society, the ecosystem or any ongoing system (Özmehmet, 2010) With these explanations, the economy, society and the environment, which are the three main components of sustainability, are emerging (Seydoğulları, 2013).

There are four conditions for sustainable energy production:

1. "Ensuring that the supply of energy is sufficient to meet human needs (i.e., to ensure that per capita income growth is at least 3%);
2. To implement energy efficiency and conservation measures and to minimize loss of energy resources;
3. Protection of Public Health by knowing the security hazards and consequences of energy sources
4. Protecting the biosafety, preventing more local pollution." (Gürsoy, 2004)

Today, energy, which plays an important role in economic growth in all countries of the world, is an indispensable element of development programs and development. Energy policies, especially in developing countries, are an integral part of development plans. Energy is the most strategic sector, so Turkey should use the energy effectively. Furthermore, it is a fundamental obligation to meet all kinds of energy needs at safe, adequate, continuous, Reasonable Prices and environment friendly conditions. (Kılıç, 2013).

For Example ;

#### **a. Energy Production in WORLD**

Today, where the destruction of nature and environmental costs have reached enormous levels, the state is the main actor of a very delicate balance between nature and economic development. (Keles et al. 2009) point out, the state is obliged to facilitate the inclusion of natural resources in the economic cycle and to prevent the misuse of these resources as a requirement of its position. The most important means of the state to ensure that a social welfare loss does not occur are fiscal policies, which will be elaborated later. The fact that the energy sector has a much higher share in the formation of environmental problems with 70 percent of all other sectors makes it essential that the measures to be taken and implemented within the framework of solving these problems are realized in this sector. From this point of view, the article focuses on environmental problems caused by traditional energy sources and how these problems can be solved.

**b. Environmental-economic benefits that can be obtained from the use of clean energy resources in literature of fossil fuels**

Fossil fuels are consumable resources such as oil, natural gas and coal that cannot be regenerated in a short period of time. Fossil fuels, which are not renewable and have limited reserves, create a continuous risk for the environment and they cause global environmental disasters such as toxic gases, global warming, climate change and acid rain during the use of these fuels (Özey, 2001). In addition to the damages caused by these resources to the environment, it has been shown in detail in many studies that it imposes significant costs on societies in the economic sense.<sup>3</sup> Energy is an indispensable importance for economic growth and being dependent on the outside constitutes a serious risk for growth. Therefore, reducing dependence on foreign energy is a strategic priority. For this reason, many countries are conducting important researches and making big investments in energy production in order to ensure sufficient, continuous, reliable, economic and environmental impacts of the energy they need (Karaca, 2011). The availability of heavily used fossil fuels in a limited number of countries raises questions about the sustainability and safety of energy. However, the renewable energy resources of almost every country are not subject to any price increase and are not affected by political and political instability. According to the relationship accepted in the literature, the increase in the production and use of renewable energy can directly reduce the import costs arising from oil and natural gas, prevent instability problems that may arise as a result of energy dependence, and additional added value can be obtained from domestic energy production.<sup>4</sup> It is frequently discussed in the literature that the production volume in this field will expand with the support given to the Turkish market and that with this expansion a significant amount of income can be obtained in the export.<sup>5</sup> Therefore, the factors such as its contribution to the national economy, the fact that it is a domestic resource and the capital remain within the country are of great importance. bears. Some of the important benefits of using renewable energies instead of fossil fuels for a country's economy are discussed below (Karaca and Erdoğan, 2005)

**c. Energy Efficient Building**

Today, as environmental problems gain momentum and increase in the amount of energy we consume as a technology society, construction activities it is the important emergence of these global problems, which concern the future generations as well as today. The search for solutions that enable buildings to have less environmental impact leads the architectural design towards ecological and energy efficient approaches. Energy efficient design is the most economical way to prevent air pollution both indoors and outdoors and to meet our future energy needs. Energy efficient buildings are designed in a way that will not harm the ecosystem during the design phase, construction phase, usage phase, post-use and demolition phases. In energy efficient building design; location, structure, building intervals, climatic data, water and material conservation, building shell parameters are taken into consideration. In addition to the combination of these design parameters with appropriate values, the integration of the use of 15 renewable energy sources defines the energy efficient building. The tendency towards energy efficient buildings is a natural and contemporary result of solving environmental problems. With this approach, architecture plays an important role in conveying sustainable environmental awareness to the society. (Uslusoy, 2004)

**e. The use of renewable energy resources in accommodation industry and its economical effects towards tourism in terms of sustainability**

It is necessary to enable renewable energy resources in order to obtain the required energy to provide sustainability to the services at accommodation businesses in a less costly way. There is no need for raw materials in order to get renewable energy resources, the only cost is the first installation costs. Since it is redeemed in a short amount of time, it reveals that these kind of energy resources are budgetfriendly and necessary. In this direction, it is more advantageous for the businesses that operate in tourism industry, to invest in renewable energy resources so that they can actualize their activities in a more economical way. Because it will be possible to provide an economical environment by decreasing the service costs in tourism industry in terms of providing sustainability in energy by the use of renewable energy resources. The importance and necessity to increase and popularize the use of renewable energy resources, especially solar energy, were mentioned in this study. In this respect, it was aimed to evaluate the topic in an economical aspect by doing a situation assessment. Therefore the economical

contributions of solar energy investments amongst renewable energy resources to the sustainability of tourism were revealed in order to actualize one of the main goals of sustainable tourism that is providing efficient and low cost energy use. In this direction, a set of suggestions were made in terms of the economical contributions of solar energy if it is used in an effective way by the accommodation businesses (Gümüş and Örgev, 2013).

#### **4. DISCUSSION AND CONCLUSION**

It is possible to solve the energy need which has become the world's biggest problem without harming the environment with renewable energy sources and clean energy sources.( Convergence and Root, 2017). Energy use and environmental impacts are evaluated in terms of sustainable development when it is clear that there is a strong relationship between them. Energy production and consumption during the environmental problems that minimize the optimal planning of resources should be made economically and reliably(Selici, et al. 2007).

In the field of renewable energy resources Ar-Ge activities should be developed and supported. Energy consumption savings, energy use programs should be developed, public awareness and encouraged. Region plans, environmental layout planning and development plans, air pollution to residential areas and other areas requiring protection should be made to ensure that the negative impact is as little as possible. In the first nuclear power plant protocol, which is planned to be established due to insufficient industrial support and lack of experience in nuclear project management in our country, it should be stated that construction, operation and necessary technical personnel, supply of fuel to be used, transport, where wastes will be stored and with which technology. Coal used to be high calorific value and sulfur, humidity, volatile and ash rates should be low should be provided. The heater boilers used in heating and the stove should be provided full combustion and their burning devices should be trained and appropriate to the technique to be burned. On the other hand, heat insulation in buildings should be done to prevent heat losses (Kadioğlu and Telliöğlu, 1996).

Appropriate environmental technologies work should be focused on energy production and environmental pollution reduction should be targeted. However, in order to benefit from renewable energy resources, more research and development activities can be done, for this purpose, the creation of the 'renewable energy resources master plan', private sector investments to be made in this area subsidies, low interest credit, tax refund and exemption can also be useful to bring applications such as. However, investment, generation and consumption costs are barriers to greater consumption of renewable energy sources. For example, as long as there is not a high penalty for carbon dioxide emissions that occur when coal is burned, it will continue to be an important source of energy, especially given the abundance of developing countries. On the other hand, natural gas will it is important energy planning of many developing and heavily populated countries in the coming years. In spite of all these developments, it is a pleasure to take further steps in this direction with international cooperation in order to overcome the severe environmental problems we have experienced on a global scale, even if the renewable energy sources are not at the desired level to date.

The use of renewable energy is important in preventing environmental pollution. Therefore, in the name of sustainable development, renewable energy resources are the energy resources that should be used (Tuğrul, 2003). There are a number of disadvantages of alternative energy sources. Dams built to generate hydraulic energy damage biodiversity. Solar panels create image pollution. Wind energy is used to generate electricity from wind. High capital investments required during the installation of alternative energy sources are the most important obstacles to these energy sources. Renewable energy sources are more expensive than other sources, but are profitable for the national economy in the long run. The first step can be reduced costs with government support (Cukurcayır and Sağır, 2007).

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