

RENEWABLE ENERGY SOURCES AND THEIR POSSIBILITIES

Mark Shulyhin

*Educational and Research Institute of Nuclear and Heat Power Engineering,
National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”*

A renewable resource is a resource that can be refilled naturally gradually. Appropriately, it is imperishable despite its exhaustion by humankind. They include biomass energy (such as ethanol), solar energy, hydropower, wind energy, and geothermal power. Biomass refers to organic materials from plants and animals. This includes wood, sewage, and ethanol (which comes from corn or other plants).

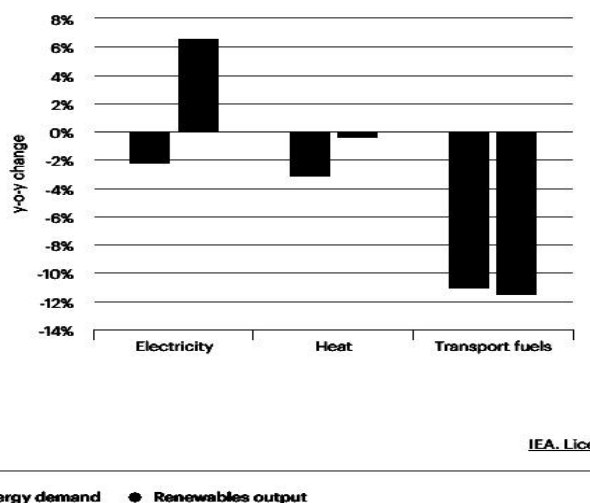
When most of our planet's resources are exhausted, we need to find a way to deal with this problem and renovate them before the energy crisis occurs. Therefore, I want to touch the topic about some ways of getting energy from renewable sources. Above all, we need to mention geothermal power. Geothermal power is a form of

renewable energy created by powering electrical generators with the heat of the Earth and naturally occurring subterranean hot water reservoirs. In the case of the durability of the Earth's core, which is responsible for producing the biggest part of the heat used by electrical generators. As well, we can remind about wind energy that is assembled by turning wind turbines and hydropower, which is one of the oldest renewable resources; it uses the flow of rivers and streams to turn a turbine to power a generator and manufacture electricity. Radiation that comes to us from the Sun can also be used as renewable energy.

It is important to touch the topic of what needs to be done to find and use alternative or renewable resources and here are a couple of reasons why. Up front, it reduces global warming. Humankind is actively overloading our planet with extra CO₂ that is causing a harmful impact on our ecology. Moreover, this environmental impact can improve public health. Extra pollution in the air and water wreaks not only to the Earth but also to the health of all planet inhabitants. I cannot help but mention an inexhaustible energy that can cause no more need for fabrics that exhaust resources. In addition, it has some job and economic benefits. For example, to install each solar panel in each spot, we need more people than for some electric factories where work has already been atomized by robots. The main way it can improve our economy is stable energy prices. There is no longer any need to be addicted to the government, global corporations, or unexpected problems. Using more renewable energy can lower the prices and demand for natural gas and coal by increasing competition and diversifying our energy supplies. Moreover, an increased reliance on renewable energy can help protect consumers when fossil fuel prices spike.

Before COVID pandemic started in our world, every country was focused on producing and equally using nonrenewable energy (fabrics and fuel). After pandemic in 2019, the level of using energy was reduced and in addition, the level of producing green energy was increased.

Change in energy demand and renewables output in electricity, heat and transport, 2019 to 2020



Due to these consequences now, we have time to save the rest of produced energy and use it during next years without problem of causing energy crisis what is healthy for our ecology and economic.

In conclusion, the last topic that I want to touch is how to incorporate renewable energy sources in whole world. As a matter of fact, the

changeover to 100% renewable energy around the world would cost for us approximately \$62 trillion. However, according to forecast, it will pay off just in 6 years. There is no information about how much it would be priced to do a changeover only in one country but still just imagine how this switch can act on world situation. Actually, using of these technologies can have a healthy influence on each country economics over time. We will not be addicted to thermal power plant anymore. In addition, even if some troubles happened to them, we would always have a big mount of reserve energy sources that as well do not have any negative affect on Earth ecology.

Afore I mentioned a lot about different types and advantages of using renewable energy, however let`s talk about disadvantages. First of all, these sources are strongly dependent on the weather conditions. For example, solar cells are useless in the winter due to the luck of sun. Moreover, specifically now the efficiency of renewable technologies is low. Even if people want to changeover to renewable sources, it is really close to impossible due to needs in an extremely huge amount of technique.

In conclusion, I guess that the main point of this changeover on green energy is awesome and idea to make our energy produce, economy and ecology situation much more stable is extremely well. However, due to crisis in different countries and war

our world is not ready now to afford this breakthrough. Moreover, even if we might have enough money to realize this innovation, it will take way too much of other resources to create all stuff that we need. In addition, I am not sure is renewable energy sources as environmentally friendly as we think. During the process of manufacturing the technique, we will need to use different facilities that will continue to pollute and destroy our nature and atmosphere. In my point of view, we are not ready to go on renewable energy sources now and for us will be much better hold some time till scientists will improve these technologies and make them much easier going.

References:

- Benefits of Renewable Energy Use. (wrote in 2008, updated 20.05.2017). Retrieved from <https://www.ucsusa.org/resources/benefits-renewable-energy-use>
- Hanley, S. (2022, 06 September). *Switching The World To Renewable Energy Will Cost \$62 Trillion, But The Payback Would Take Just 6 Years*. Retrieved from <https://cleantechnica.com/2022/09/06/switching-the-world-to-renewable-energy-will-cost-62-trillion-but-the-payback-would-take-just-6-years/>
- Lakeh, H. K. (2022, 22 May). *What Are the Advantages and Disadvantages of Renewable Energy?* Retrieved from <https://www.greenmatch.co.uk/blog/2021/09/advantages-and-disadvantages-of-renewable-energy>
- National Geographic Society. (2022, 20 May). *Renewable resources are an energy source that cannot be depleted and are able to supply a continuous source of clean energy.* Retrieved from <https://education.nationalgeographic.org/resource/renewable-resources>
- The resilience of renewables is driven by the electricity sector. (November 2020). Retrieved from <https://www.iea.org/fuels-and-technologies/renewables>