

MODERN ENERGY

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Energy is one of pivotal factor of our civilization. Its multifaceted nature covers a wild range of resources, technology and applications, which contribute to society nowadays. This article delves into the complexities of modern-day electricity, analyzing its historical evolution, contemporary challenges and destiny potentialities. An energy source is a natural source or resource from which we obtain the energy we need to run our lives. This power can be used to light our homes, move our cars, heat water or charge our electronic devices and household appliances [1].

In last centuries energy has been a driving force behind technological progress. From the harnessing of hearth in prehistoric instances to the advent of fossil fuels at some stage in the Industrial Revolution, the quest for dependable and efficient energy sources has fashioned the direction of human development. This ancient trajectory has witnessed a slow shift from traditional biomass and fossil fuels towards renewable and sustainable power sources.

Currently the sources of electricity are the following:

1. Fossil Fuels. Their three major types (coal, oil, and natural gas) are non-renewable energy sources that were formed from ancient plants and organisms millions of years ago. They are also the largest carbon dioxide emitters and greenhouse gas contributors, which lead to climate change, air pollution and global warming.

2. Renewable Energy Sources include: Solar power. It is generated by converting the energy of the Sun directly into electricity due to photovoltaic effect; Wind energy. The latter is produced by turning the kinetic energy of moving air into electricity; Hydropower, including tidal energy, is generated by the energy of flowing water; Geothermal energy. It is produced by using heat energy from the Earth; Biomass (organic matter burned as a fuel) is a clean, renewable source of energy that comes from

the Sun, plants, algae and organic materials, such as wooden, vegetation and animal waste, via approaches along with combustion, gasification and anaerobic digestion [1].

3. Nuclear Energy. It is generated by means of harnessing the power launched from nuclear reactions. Nuclear power plants use nuclear fission to provide heat, which is exploited to produce steam that spins turbines. Nuclear energy is a low-carbon power supply, but it additionally increases concerns about nuclear waste disposal and environment protection from them. Despite considerable improvements in energy production and distribution, modern-day society faces a myriad of demanding situations related to power.

This includes:

1. Depletion reserves of fossil fuels;
2. Environmental degradation due to fossil fuels use;
3. Intermittency and variability of renewable power sources;
4. Increasing global electricity demand;
5. Energy poverty in developing regions.

The addressing of those challenges calls for a multifaceted method that encompasses technological innovation, reforms in some spheres and global cooperation. Combining energy and Artificial Intelligence (AI) opens up new opportunities for the energy industry. But what is most important — its implementation can solve existing problems and allow control of consumption.

Now about 60% of all generated electricity energy is wasted. But wasted energy represents billions of dollars spent on generated energy that we have not consumed.

AI can monitor the entire chain and identify potential problems that need optimization. However, the conclusion of a sustainable and equitable electricity future depends on the collective efforts of governments, industries and people.

In conclusion, by embracing innovation, we hope that in near future we will be able to harness this electrical energy to create a sustainable and rich destiny for generations to come back.

References

1. The World's Energy Resources [Electronic resource] – Mode of access: <https://medium.com/be-a-hero-save-the-world/the-worlds-energy-resources-d6a84844add7>. – Date of access: 13.03.2024.