УДК 621.311

S. BOIKO, Candidate of technical sciences, Associate Professor,
National University «Zaporizhia Polytechnic»
I. KASATKINA, Candidate of technical sciences, Associate Professor,
Kryvyi Rih National University

PROBLEMS OF IMPLEMENTATION OF SOURCES OF DISTRIBUTED GENERATION IN THE ASPECT OF SMART GRID

Renewable energy is designed to contribute to solving, first of all, two important problems - energy efficiency and environmental safety. In the modern domestic market of energy resources, alternative sources of energy are just starting to gradually develop [1].

The Ukrainian economy remains the second most energy-intensive country in the world in terms of energy intensity. In the last 5-10 years, the energy problem has acquired particularly threatening features for the further development of the national economy of Ukraine, in connection with this, complex work has begun to be carried out to develop a vision and strategy for the development of the energy sector [1].

A new technological revolution is taking place in the world, which is unfolding on the basis of the integration of these technologies into almost all spheres of economy and social life. A new type of society is being formed (Society 5.0), whose production chains, logistics, and social infrastructure will be based on artificial intelligence (AI). Armed with intellectual technologies, the intensity and effectiveness of their implementation become a criterion for the development of national economies. Accordingly, the attractiveness of countries and regions, the concentration of skilled labor, high-tech production facilities, material and financial resources, educational institutions, infrastructure and cultural facilities in them will depend on the degree of implementation of AI [2].

Different countries see similar opportunities for the use of artificial intelligence. Their plans, concepts and strategies most often emphasize that healthcare, technology, agriculture and manufacturing are the sectors with the greatest potential for AI transformation. The governments of these countries take into account the potential of this technology to strengthen their competitive positions in the main areas of social development.

Risk prevention concepts are developed, attention is paid to creating a regulatory framework for AI systems, exploring their impact on social inequality and the need for increased transparency related to AI systems. These guiding documents emphasize the need to comply with the norms of international humanitarian law, ensure information security and confidential use of data related to the design, deployment and application of AI systems. The governments of these countries create conditions to support innovations in the field of AI [2].

For all the similarity of general tasks, principles and methods of achieving similar goals, foreign approaches cannot be effectively implemented in Ukraine.

The specifics of the current state and the unique conditions of our country determine the formation of alternative ways of AI development, taking into account the leading world practices.

The concept of the development of the field of artificial intelligence in Ukraine defines the purpose, basic principles and tasks of the development of artificial intelligence technologies in Ukraine as a priority direction in the field of scientific and technological research, taking into account modern trends and features of the development of Ukraine in the perspective of 2030.

The use and distribution of renewable energy sources in the smart grid system has already provided about 6% of new electricity connections worldwide between 2012 and 2016.

So, in the developed countries of the world, sources of distributed generation and Smart grid technologies play a key role in meeting the energy needs and ensuring the livelihood of millions of people living in rural and remote areas.

References

1. **Sinchuk O., Sinchuk I., Kozakevych I., Fedotov V., Serebrenikov V., Lokhman N., Beridze T., Boiko S., Pyrozhenko A., Yalova A.** – Development of the functional model to control the levels of electricity consumption by underground iron-ore enterprises. Eastern European journal of advanced technologies. – 2018. No. 6(3). – pp. 20-27.
2. **Buchholz B., Styczynski Z.** Smart Grids – Fundamentals and Technologies in Electricity Networks, Springer – 2014. – 396 p.