

## **AUTOMATION OF POWER GRIDS IN THE CIS COUNTRIES**

Student Derkach B. S.

scientific supervisor – teacher Dzerhachova A. A.

Belarusian National University of Technology

Minsk, Belarus

Today, most of the developed and developing countries are striving to modernize various technologies in all possible industries. Just one of these key areas for improving technical processes has become automation. In the energetic sphere, as well as in other production areas, it can significantly increase the efficiency and speed of completing tasks, the stability and safety of equipment operation, as well as the quality of the working environment for employees. And, as a result, these benefits positively affect the living conditions of the population.

Such reasonableness in the use of modern technologies could not fail to be noticed by the governments of the CIS countries. In order to keep up with the times and keep up with other states in technical development even more, representatives of the Commonwealth are actively trying to promote various innovations in power supply systems to this day. In addition to the previously mentioned advantages of using automated power grids, countries such as Belarus, Russia, Kazakhstan, Ukraine and others note that such innovations also reduce the cost of maintenance, in addition to expanding the range of functions, from monitoring the state of the network to predictive analysis to simulate changes.

One of the successful examples of the implementation of an automated power grid can be considered the experience of Kazakhstan, which launched the Smart Energy project and thus indicated the vector of development in the energy sector. As a result, "KazTransOil" has added new digital solutions to the energy

system they have. Innovations included: diagnostics and monitoring of the electrical network, due to which the company has improved management processes throughout the territory of the Republic of Kazakhstan and increased reliability with the stability of power transmission.

Particularly relevant are projects to develop autonomous systems in Russia. In remote and less populated regions, such as Siberia and the Far East, the introduction of the latest technologies is especially important. For example, many projects (for example "ERMS") involve the deployment of multiple digital control devices, such as controllers or sensors, to constantly monitor the state of the power grid and respond quickly in case of accidents, failures and other network problems.

Belarus is also trying to keep up with technological progress, stating that the modernization of technology is one of the directions in the program to improve the production of the energy sector. Thus, "Belenergo" is actively discussing and taking actions to solve problems with the throughput, wear rate and reliability of power supply to power grids. In conclusion, it becomes obvious that in the modern world, automation is a natural step in the development of technologies for almost any industry, including energy. As a result, the CIS countries are actively trying to introduce new technologies to improve the stability of energy systems and resistance to loads, reduce the cost of their maintenance, promptly track and troubleshoot, and improve the economic development of the regions. Moreover, with current trends in the development of technologies that automate technical processes (for example artificial intelligence, controllers, various sensors, etc.), the desire for such modernization will only grow.