

**A REVIEW OF THE MONOGRAPH BY YU. BILAN, O. CHYGRYN, S. KOLOSOK
“ENVIRONMENTAL AND ECONOMIC IMPACTS OF ENERGY
TRANSFORMATION: CONCEPTS INNOVATION AND BUSINESS MODELS”**

Radosław Miśkiewicz

Abstract. In recent decades, there have been dramatic changes in the energy sector, which significantly influence other areas of activity. It is widely believed that traditional energy sources are the leading cause of air pollution, although they play the most prominent role in electricity generation. Such dependence on fossil energy sources is a significant challenge on the path to sustainable development. The introduction of sustainable business models and innovative concepts in the energy sector is a tool for transitioning from traditional to "green" energy to reduce the negative impact on the environment. Therefore, it is essential to estimate the effects of energy transformations and identify the environmental and economic effects of the deployment of such solutions. Sustainable business models can solve environmental problems associated with harmful emissions from the energy sector. These models are more environmentally friendly and are part of "green" growth. They ensure the creation and maintenance of the organizations' values and provide competitive advantages in the industry. Although moving to sustainable business models is quite complex, they contain alternative solutions to avoid a global collapse due to energy shortages and climate change. In this regard, the priorities are to improve regulatory policy in the energy sector, the formation of environmentally friendly competitive advantages of energy companies, the description of opportunities to deploy smart energy networks, development of sustainable business models for energy sector transformation, optimization of energy financing.

Keywords: ecology, energy, model, SDG

JEL Classification: O13, Q43, Q48

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The modern trends in the development of the domestic energy sector in terms of reducing the final consumption of energy resources, the share of energy consumption from alternative sources, the rate of reduction of carbon emissions in energy are significantly inferior to those in the European Union. Relevant trends are due to the systemic transformation of European energy policy in the context of building smart energy networks and their integrated fusion with the European energy system. In this perspective, it is important to determine the mechanisms and tools for creating an environmentally friendly model of energy development, the introduction of smart transformations. In view of this, the monograph on the formation of innovative concepts and business models of environmental and economic transformation of the energy sector is, of course, relevant and timely.

The authors pay considerable attention to the specific features of the sustainable and carbon-neutral approach to economic development. They analyse certain features of forming transparent and innovative principles of state regulation of energy supply. Today Ukraine has already declared its European integration vector of development, which should include synchronization of national energy policy to follow the directions of the European action in this area. The study investigates the best practices in tackling environmental issues as a prerequisite for successful Ukrainian policy. The authors investigate theoretical and methodological fundamentals of improving regulatory policy in the energy supply system. The monograph contains a sufficient number of data, analytical material and information from legislative documents, which in general allows the reader to navigate well in the scientific topics of the study.

It is noteworthy that the monograph focuses on analysing organizational and economic principles of state regulation of the energy sector.

The monograph offers a theoretical principle for identifying patterns in framing the smart grid concept development, which differ from existing ones using bibliometric (VOSviewer v. 1.6.13) analysis, which allowed describing the dominant retrospective evolutionary-temporal trends in the smart grid theory in interrelation with the concepts of sustainable development, greening of the energy sector, green economy, etc. Attention is paid to informing the general public and the scientific community about the importance of smart transformation of energy sector, reducing carbon emissions, achieving ecologically neutral economic stability, and shifting to renewable energy implementation. It should be noted that the authors are not limited to reviewing only Ukrainian scientific sources, but also explore the development of sustainable energy measures and the introduction of tools in foreign publications.

The proposed monograph "Environmental and Economic Impacts of Energy Transformation: Concepts Innovation and Business Models" is a fundamental study that is relevant and has a scientific value. First, the publication gives a holistic view of the strategic vector of the modern development of the European energy policy. The paper suggests that the priority in implementing a smart transformation and carbon-neutral approach in the national economy development is to ensure high levels of public health and a sufficient standard of living and

the development of economic entities. Given the conceptual notions of a carbon-neutral approach and the environmental competitive development in the scientific literature, it is valuable in this peer-reviewed monograph that researchers thoroughly hypothesize that the European Green Deal is linked to the tenets of the European cohesion policy.

The authors' empirical research on the development of sustainable business models for the transformation of the energy sector, proposed models of sustainable distributed energy generation and storage and analysed models of integration of renewable energy sources are of great practical significance. Also, the authors conclude the positive dynamics of changes in Ukraine's energy intensity since 2010, although it is not sufficient for a fuller implementation of the European approaches to implementing the state regulatory policy. The importance of introducing innovative energy technologies, which can be a crucial tool for overcoming the adverse effects of climate change, is emphasized. According to the authors, this will contribute to devising new scenarios for the sustainable energy development and support the energy security of the national economy.

At the same time, introducing smart energy technologies can be a crucial tool for overcoming the adverse effects of climate change and anthropogenic pressure. In addition, it will help create new scenarios for the sustainable energy development of the country.

In general, this work is a completed scientific study that contains valuable analytical material, calculation-based author's conclusions and can serve as a successful basis for further findings in this scientific and practical field of research. Given many advantages, this monograph could be recommended to be published in the author's version. The peer-reviewed scientific work has a theoretical significance and can be recommended to scientists, graduates, energy workers and managers in the field of environmental policy implementation in Ukraine.