

## Green energy and environmental protection: problems of state regulation in Ukraine and EU experience

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The problems of state regulation in the field of green energy have been examined in the paper. In particular, a comparison of management principles in the field of green energy in Ukraine and in the European Union has been carried out. It has been emphasized that in Ukraine, in contrast to the European Union countries, management in the field of green energy is carried out exclusively by the state. Measures for the reformation of the Ukraine's green energy have been analyzed. It has been also noted that the development of a set of measures to bring the Ukrainian energy market closer to the European one was completed. In addition, Ukraine joined the International Energy Charter, which, in turn, provides an opportunity to successfully meet the current and future challenges of global energy industry with the support of other countries.

**Keywords:** state regulation, the field of green energy, problems, principles of management, the complex of measures.

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### Introduction

In fact, to improve the field of green energy, Ukraine has begun to implement energy efficiency policies and formation of the necessary legal framework for its implementation. In particular, regulations on energy saving, the use of alternative energy sources and the development of the green energy sector in general were developed and implemented, which, in turn, should have contributed to its development. However, the economic crisis in the second half of the 1990s, the instability of the political situation, the lack of the necessary financial resources and strict administrative management methods prevented the implementation of appropriate reforms (Darkoh, 1996; Grossman, Krueger, 1994).

The problems of state regulation in the field of green energy have been discussed by Drozhzhyn (2012), Suchodolya (2006), Taukeshev (2015), Schreurs (2018), Smith (2020), Soria-Rodríguez (2020), Tanil and Jurek (2020), Taukesheva (2015), York et al. (2003).

However, considering that effective state regulation of green energy is of great importance for Ukrainian development and has high potential to intensify the integration processes of infrastructure development of green energy and joining European energy systems, the issues of state regulation in green energy demand in-depth study (Buonamo, Nugent, 2013; Directive, 2009, 2012, 2018; Eder et al., 2017a, 2017b).

**The research aim was** to study the problems of state regulation in the field of green energy in Ukraine. We also planned to compare the principles of management in the field of green energy in Ukraine and in the European Union and to analyze measures concerning reformation of Ukraine's green energy.

### Results

The power security is an essential component of modern civil protection technologies for population and territories. Power security provides the foundation for industrial societies and economies. Modern economies cannot function fully without continuous power supply. Their vulnerability to regional and interregional systemic accidents increases with the increasing number of linkages between different economies (Renewed, 2006; Soria-Rodríguez, 2020; Tanil, Jurek, 2020). The consequences for economics and ecology can be difficult. Accidents, lasting several days, can lead to disruption of communications, transport and heating systems. They can threaten water supply and sanitation systems, can cause production interruption and trade processes, as well as forced transition hospitals for backup meals. In short, system accidents lead to a violation of stability of entire regions. Recent data show that climate change is leading to an increase in the number of extreme natural cataclysms, increasing the likelihood of a negative impact on the electricity infrastructure, which, in turn, may cause a system accident. We analysed the management principles in the field of green energy in Ukraine and European Union (Table 1).

**Table 1.** Comparative characteristics of the management principles in the field of green energy in Ukraine and in the European Union (from Suchodolya, 2006; Drozhzhyn, 2012)

Ukraine	European Union
Natural monopolies	Free competition
Public administration	State regulation
Planning at the centralized level	Expanding the freedom of economic actions of economic entities in the field of green energy, exemption from strict state restrictions (liberalization)
State-owned property	Private property

A number of measures have already been implemented to reform Ukraine's green energy during the years of Ukraine's independence. Thus, within the framework of the Technical Assistance for the Commonwealth of Independent States (TACIS) Program, a set of measures was developed to maximize the advance of the Ukrainian electric power market to the European one (Smith, 2020; Soria-Rodríguez, 2020; Tanil, Jurek, 2020).

It should be noted that the European Bank for Reconstruction and Development has stated that it is ready to support and create favourable conditions for the implementation of the electric power sector reforms aimed at reducing cross-subsidization of different categories of electricity consumers and introducing economically reasonable tariffs in order to attract investment funds and to increase the overall level of energy efficiency (Suchodolya, 2006; Taukesheva, 2015).

In January 1993, in order to improve the quality of activities in the electrical power sector of Ukraine, State Foreign Trade Company (hereinafter – SFTC) Ukrinterenergo was organised. Its creation was caused by the need to move to the market economy principles of the state electrical power sector. Besides, with the participation of SFTC Ukrinterenergo the rehabilitation and modernization of the capacity of the “Thak Ba” hydroelectric power plant is being carried out with power augmentation from 108 to 120 MW.

SFTC Ukrinterenergo supplies electricity to European countries in accordance with the direct consortium agreements with foreign energy companies based on the provisions of the International Quality Management System ISO 9001: 2008. In addition, in 2010 Ukraine joined the European Energy Charter and signed an agreement, which plays a key role in creating a legal framework for energy security at the global level through the creation of open markets that operate in accordance with the principle of free competition. The main requirements of the European Charter for Ukraine were to ensure liberalization and the organization of free non-discriminatory access to the main power lines (Renewed, 2006; Schreurs, 2018; Taukesheva, 2015; York et al., 2003).

However, considering the fact that the previous European Energy Charter Treaty needed significant modernization, and taking into account the general changes in the world electrical power market and current needs in electricity, Ukraine signed the final document of the International Conference (The Hague II) on the International Energy Charter (May 21, 2015). The key task facing the countries-signatories today is to ensure energy security and the long-term sustainable development of the global energy market, taking into account its current needs. For Ukraine, such accession to the International Energy Charter is a strategically important goal, as it provides an opportunity to successfully meet the current and future challenges of global energy with the support of countries that adhere to similar principles in the field of green energy (Drozhzhyn, 2012; Taukesheva, 2015).

## Conclusions

The comparison of the management principles in the field of green energy in Ukraine and in the countries of the European Union has been carried out. It has been emphasized that the following principles are used in the countries of the European Union: free competition, state regulation, expansion of freedom of economic entities' economic actions in the field of green energy, exemption from strict state restrictions (liberalization), private property. As for Ukraine, the following principles were applied: natural monopolies, public administration, planning at the centralized level, state-owned property. In fact, in Ukraine, in contrast to the countries of the European Union, management in the field of green energy is carried out exclusively by the state.

The development of measures set to bring the Ukrainian electrical power market closer to the European one has been completed. In addition, Ukraine joined the International Energy Charter, which, in turn, provides an opportunity to answer the current and future challenges of global energy with the support of other countries.

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