



## Corporatization of Ukraine's Critical Infrastructure State Enterprises: Institutional Issues and International Lessons

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### ABSTRACT

The article is devoted to the study of the model of corporatization of state-owned enterprises of the critical infrastructure of Ukraine under martial law and post-war reconstruction. Based on the analysis of the cases of NPC Ukrenergo (scandal with 63 unfulfilled contracts for UAH 4.3 billion) and the restoration of water supply to Mykolaiv (corruption risks, delays of more than three years), systemic flaws were identified: political interference in the work of supervisory boards, low financial discipline, and lack of effective due diligence. The transitional provisions of Law No. 5593-d are considered, which retain the Cabinet of Ministers' control over the financial indicators of state-owned enterprises, which creates a conflict of interest. The positive experience of Costa Rica (state-owned company ICE under the solidarity model, 100% electricity coverage), Uruguay (horizontal integration of service agencies, constitutional ban on water privatization), and Indonesia (IMF fiscal monitoring tool – Health Check Tool) is involved. The recommendations are substantiated: introduction of mandatory due diligence for CI investment projects, development of regionally differentiated performance indicators, and strengthening the role of the public in monitoring corporatized structures.

### KEYWORDS

critical infrastructure, corporatization, public administration, supervisory board, due diligence, state-owned enterprise, fiscal risk.



## Корпоратизація державних підприємств критичної інфраструктури України: інституційні проблеми та міжнародні уроки

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### СТАТТЯ

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Статтю присвячено дослідженню моделі корпоратизації державних підприємств критичної інфраструктури України в умовах воєнного стану та повоєнного відновлення. На основі аналізу кейсів НЕК «Укренерго» (скандал із 63 невиконаними контрактами на 4,3 млрд грн) та відновлення водопостачання Миколаєва (корупційні ризики, затримки понад три роки) виявлено системні вади: політичне втручання в роботу наглядових рад, низьку фінансову дисципліну, відсутність дієвого due diligence. Розглянуто перехідні положення Закону № 5593-д, які зберігають контроль Кабінету Міністрів за фінансовими показниками держпідприємств, що створює конфлікт інтересів. Залучено позитивний досвід Коста-Рики (державна компанія ICE за моделлю солідарності, 100% покриття електроенергією), Уругваю (горизонтальна інтеграція сервісних агентств, конституційна заборона приватизації води) та Індонезії (інструмент фіскального моніторингу МВФ – Health Check Tool). Обґрунтовано рекомендації: запровадження обов'язкової належної перевірки (due diligence) для інвестиційних проектів КІ, розробка регіонально диференційованих показників ефективності, посилення ролі громадськості в моніторингу корпоратизованих структур.



### КЛЮЧОВІ СЛОВА

критична інфраструктура, корпоратизація, публічне управління, наглядова рада, due diligence, державне підприємство, фіскальний ризик.

## 1. Introduction

The full-scale Russian aggression caused colossal destruction to Ukraine's critical infrastructure (CI). According to the Kyiv School of Economics, as of November 2024, direct infrastructure losses reached \$169.8 billion. US [1]. The restoration of these facilities is entrusted mainly to state-owned enterprises (SOEs) and companies with state shares, which operate in the form of corporatized structures. World experience shows that corporatization (granting state-owned enterprises autonomy in management while maintaining state ownership) can increase efficiency, but in Ukrainian realities, it is accompanied by deep institutional dysfunctions: political pressure, corruption, low accountability. The purpose of the article is to identify systemic problems of corporatization of state-owned CI enterprises in Ukraine, analyze resonant cases (NEC "Ukrenergo", restoration of Mykolaiv) and suggest ways to improve based on positive foreign experience.

## 2. Literature Review

The theoretical basis of the study is based on the work of MacDonald [11], who argues that the success of corporatization is influenced not by the legal form, but by the actual distribution of powers between the state and the administration. This decision directly resonates with the Ukrainian reality, where the provisions on labor market presence in Law No. 5593-d create a gap between formal OECD standards and actual state supervision. The Latin American case studied by Chavez [3] on the Costa Rican ICE offers a counterargument: a state-owned enterprise achieved almost 100% electrification by investing in economically unviable regions, which actually contradicts the inevitability of inefficiency of state monopolies. At the same time, as Chavez notes, such a model requires strong social consensus and insulation from political interference – a condition that is absent in Ukraine.

Uruguayan studies [4; 17] add two key features to the already established framework: a constitutional ban on the privatization of water supply (a world first) and horizontal coordination between different service agencies, which has led to a reduction in redundancy. Spronk, Crespo and Olivera [17] rightly point out that even in Uruguay, modernization has encountered resistance from trade unions – the fact that such tensions may arise in the Ukrainian context should be borne in mind. Regarding fiscal monitoring, El Reyes et al. (IMF) [7] propose a specific tool – the State of Affairs Check Tool (a set of financial ratios for early detection of risks), tested in Indonesia. But crucially, this tool was developed based on stable economies and will now need to be adapted to the conditions of a war situation.

The quantitative basis is provided by the KSE [1] and World Bank reports [2; 18; 19; 21], which record direct energy losses at \$14.6 billion and total recovery needs at \$524 billion. However, these estimates focus on physical destruction rather than managerial dysfunction. The domestic study by Magomedov [9; 10] summarizes European approaches to sustainable development of corporate infrastructure, but does not address the issue of corporate governance. Therefore, a full-scale theoretical application of the dispute between the transitional provisions of Law No. 5593-d and the autonomy of supervisory boards, as well as a direct comparison of Ukrainian cases with Latin American models and IMF instruments, is absent in the literature – this article aims to fill this gap.

## 3. Problem Statement

Despite Ukraine's formal adoption of OECD corporate governance standards (Law No. 5593-d), state-owned enterprises of critical infrastructure in wartime are chronically inefficient, riddled with corruption schemes (Ukrenergo failed to fulfill 63 contracts worth UAH 4.3 billion), and critical projects remain unfinished (the restoration of water supply in Mykolaiv has been ongoing for over three years). The transitional provisions of the aforementioned law maintain the Cabinet of Ministers' control over the financial performance of SOEs, which creates a conflict of interest, paves the way for political pressure on the boards of directors of state-owned enterprises, and nullifies the entire idea of corporatization. Thus, a scientific and practical problem arises – how to reconcile the need to maintain state control over strategic CI facilities with the requirements of autonomy, transparency, and accountability of corporatized bodies, especially against the backdrop of massive destruction and

limited financial resources. Solving the problem requires identifying systemic institutional dysfunctions and adapting positive international experiences.

#### 4. Methods and Materials

The methodological basis of the study is a set of approaches, including the case study method, which involves a detailed analysis of two crises – the scandal at NPP Ukrenergo (2023–2024) and the protracted restoration of water supply to Mykolaiv (since 2022) [1; 8; 9]; institutional analysis aimed at assessing the Law of Ukraine “On Critical Infrastructure” [13], the National Plan for Critical Infrastructure Protection [14; 22], the Categorization Methodology [15] and Law No. 5593-d on Corporate Governance [1]; comparative analysis, which involves studying corporatization models in Costa Rica (ICE) [3], Uruguay (OSE, UTE, AFE, ANTEL) [4; 17] and Indonesia (IMF fiscal monitoring tool – Health Check Tool) [7]; as well as secondary data analysis based on the use of reports from the Kyiv School of Economics [1], the World Bank [19; 21], and expert interviews [8; 9].

#### 5. Results and Discussion

##### *5.1. Case 1. NEC Ukrenergo: corruption and political interference*

NEC Ukrenergo is a system operator for electricity transmission, one of the most critical enterprises in the energy sector. In August 2024, the Supreme Commander-in-Chief initiated the dismissal of the Chairman of the Board, Volodymyr Kudrytsky, officially due to unfinished protective structures on high-voltage networks [1]. However, data from the Prozorro public procurement system showed that in the fall of 2023, Ukrenergo concluded 63 similar contracts for the installation of protective structures for transformers with a total value of UAH 4.3 billion ( $\approx$  UAH 69 million each) without a tender. As of September 2024, not a single contract had been completed, the deadline (February 22, 2024) was repeatedly extended, and there were no reports on the implementation in the system [1].

Additionally, the Supreme Anti-Corruption Court ordered the NABU to open criminal proceedings against Kudrytsky for causing losses to the state of UAH 716 million (the first months of the war) [1]. The Chairman of the Supervisory Board of Ukrenergo, Daniel Dobbeni, called the dismissal political and resigned, which undermined the independence of the supervisory boards of state-owned companies in general. The Director of the Center for Energy Research, Oleksandr Kharchenko, noted: “After this, the independence of the supervisory boards in Ukrainian state-owned companies can be forgotten” [1].

This case illustrates two key problems. First, it is systemic corruption in procurement, which manifests itself in the conclusion of direct contracts without holding competitions and in the subsequent failure to fulfill contracts. Second, it is political pressure on management, which nullifies the very idea of corporatization, since instead of autonomous management of a state-owned enterprise, there is direct government intervention in operational activities.

##### *5.2. Case 2. Restoration of water supply in Mykolaiv: corruption at the local level*

Since April 2022 (after the deliberate disruption of the Dnipro-Mykolaiv water pipeline by Russian troops) and after the explosion of the Kakhovka hydroelectric power station (June 2023), the city of Mykolaiv has been left without a centralized supply of drinking water – residents use technical water or imported water [8; 9]. Hundreds of millions of hryvnias have been allocated for the reconstruction of the water pipeline, but its implementation is accompanied by corruption scandals. The head of the working group for the restoration of Mykolaiv, Serhiy Korenyev, is on trial for embezzling UAH 27 million during the reconstruction of Sobornaya Square. The contractors (LLC Mykolaivmiskbud, Odesaspetsenergo, Gazvodmontazh) have a dubious reputation; the latter was involved in criminal proceedings for tax evasion [1].

According to the mayor of Mykolaiv, 200–300 million euros are needed to fully address the problem, but international donors (Denmark) are only willing to provide a portion due to the lack of effective management and transparent procedures [1]. This case demonstrates that decentralization without proper accountability and control leads to waste and delays in critical projects.

### **5.3. Institutional framework: Law No. 5593-d and transitional provisions**

On February 22, 2024, the Verkhovna Rada adopted Law No. 5593-d, which was supposed to bring the corporate governance of state-owned enterprises up to OECD standards. Key innovations: the exclusive competence of supervisory boards to appoint managers and approve strategic plans; the impossibility of arbitrarily dismissing members of supervisory boards; mandatory assessment of their activities at least once every three years [1]. However, the transitional provisions of the law effectively nullify these achievements for the period of martial law and 12 months after its end (but not longer than three years). During this period, the Ministry of Finance and the Cabinet of Ministers retain the authority to approve financial indicators of plans (budgets, indicative indicators) for the most important state-owned enterprises [1]. As a result, a chronic conflict of interest arises: the supervisory board is formally responsible for the strategy, but key financial parameters are determined by the government, which creates opportunities for political pressure and corruption. It is this gap that became the basis for the scandal at Ukrenergo.

### **5.4. Foreign experience: successful models of corporatization**

The problems of Ukrainian corporatization are not unique – there are proven practices in the world that can be adapted.

In particular, in Costa Rica, the state-owned energy company ICE has been operating on the principle of the “solidarity model” (modelo solidario) since 1949: it is not focused exclusively on profit, but has a mandate to ensure universal access to electricity, thanks to which almost 100% coverage has been achieved, in particular through investments in socially significant but economically unprofitable projects (for example, expanding networks to remote areas). Costa Rican citizens resist attempts at privatization, perceiving ICE as a national asset [3].

In Uruguay, following the 2004 reforms of the Frente Amplio coalition, public service agencies (OSE water, UTE electricity, AFE railways, ANTEL telecommunications) introduced regular management meetings and horizontal coordination; a 2004 constitutional amendment banned the privatization of water, a first in the world. The result was almost universal access to basic services at affordable prices and one of the highest living standards in Latin America [4; 17].

In Indonesia, in October 2022, the IMF Fiscal Affairs Department, together with the Ministry of Finance, held a workshop on fiscal risks of public investment through state-owned corporations and introduced the Health Check Tool, a set of financial ratios to assess the profitability, stability, and liquidity of state-owned enterprises, which allows for early detection of risks and minimize the likelihood of losses [7].

The examples given show that successful corporatization is possible under three conditions: first, a clear separation of powers between the state and management; second, the presence of social consensus on non-commercial goals; third, effective instruments of financial control and transparency.

### **5.5. The scale of destruction as a challenge for corporate governance**

To understand the criticality of governance problems, it is worth turning to quantitative estimates. As can be seen from Table 4.1 (original dissertation), direct losses in the energy sector as of November 2024 are estimated at 14.6 billion USD, of which 9.0 billion are for generation, 2.2 billion for transmission, and 0.8 billion for distribution [1]. The oil and gas sector lost 1.2 billion USD, and the heat supply lost 1.0 billion USD. These figures indicate that state-owned operating enterprises (Ukrenergo, Naftogaz, oblenergos) have to spend billions of dollars each year on restoration. In these conditions, the lack of transparent corporate governance and effective control over costs leads to funds being embezzled or used inefficiently, as in the case of 63 Ukrenergo contracts.

Table 1 presents an estimate of direct energy losses (calculations as of November 2024).

The largest share of losses falls on electricity generation – \$9.0 billion (almost two-thirds of all energy losses). This means that it is the generating enterprises (thermal power plants, CHP, hydroelectric power plants, nuclear power plants) that require priority attention from supervisory boards and the government. At the same time, transmission losses (2.2 billion) and distribution losses (0.8 billion) are also significant, which requires coordination between different state-owned companies.

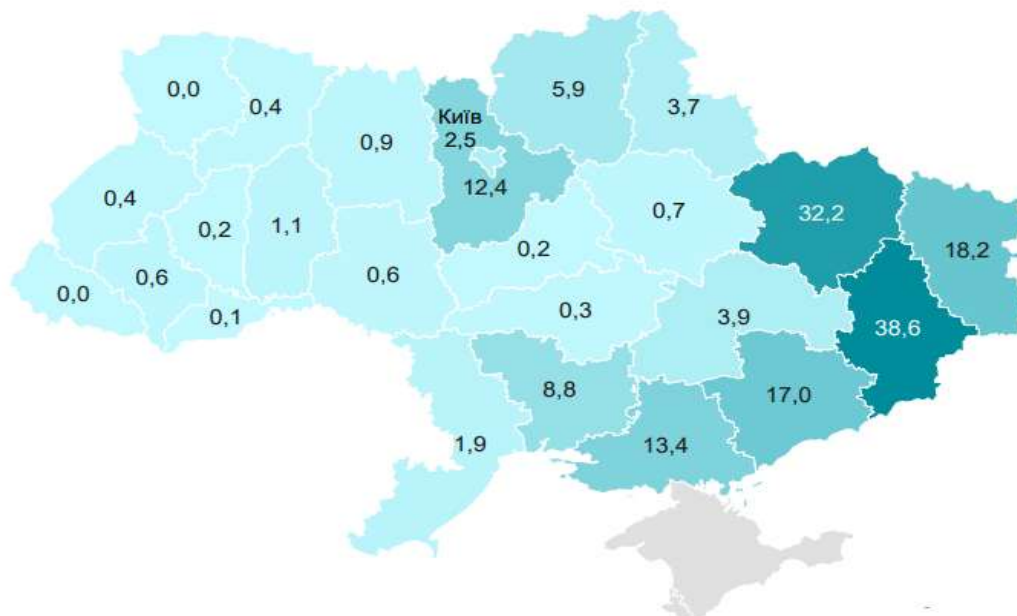
The geographical concentration of destruction (Figure 4.2) further complicates the task. More than 90% of the losses fall on ten front-line regions, where it is most difficult for state-owned enterprises to operate due to hostilities, but it is there that the fastest recovery is needed. The lack of regionally differentiated performance indicators (KPI), as noted earlier, does not stimulate local branches of state-

owned companies to take active action. Figure 1 shows a map of the distribution of direct losses by region, \$ billion. [9].

**Table 1. Estimation of direct losses in the energy sector (calculations as of November 2024)**

Types of losses	Estimated losses, billion USD
<b>Electricity, including:</b>	12,1
Electricity generation	9,0
Electricity transmission	2,2
Electricity distribution	0,8
<b>Oil and gas sector, including:</b>	1,2
Gas transportation	0,8
Gas distribution	0,2
Oil and petroleum products storage	0,3
Coal mining industry	0,4
Heating supply	1,0
<b>Total</b>	14,6

Source: Compiled by the author based on [1].



**Figure 1. Distribution of direct losses by region, \$ billion**

Source: Compiled by the author based on [1].

The most affected regions are Donetsk, Luhansk, Kharkiv, Kherson, Zaporizhzhia and Kyiv. It is there that state-owned enterprises of critical infrastructure (energy, water utilities, road services, Ukrzaliznytsia) have to operate in extreme conditions. But due to centralized financing and bureaucratic procedures (transitional provisions of Law No. 5593-d), local units often do not receive sufficient funds or powers for an operational response.

Based on the analysis of cases and the institutional environment, three main blocks of problems can be identified.

The first is legal. The transitional provisions of Law No. 5593-d retain the government's leverage over the financial plans of state-owned enterprises, which creates the ground for political pressure. The Supervisory Board becomes a decorative body.

The second is organizational and financial. The lack of mandatory due diligence for large investment projects of the CI leads to the conclusion of contracts with unreliable contractors (as in Mykolaiv) or without a tender (as in Ukrenergo). Over 60% of direct losses in relative terms are concentrated in the energy sector and digital infrastructure [1], which emphasizes the riskiness of ineffective management.

The third is institutional. In Ukraine, there is no regional differentiation of performance indicators, taking into account the security situation. For example, in frontline regions (Donetsk, Luhansk, Kharkiv),

destruction reaches 95% of roads, but standard KPIs do not take into account this factor, which demotivates local authorities [1; 9].

To increase the efficiency of public management of the restoration of critical infrastructure, it is necessary to implement a set of measures.

First, mandatory due diligence should be introduced for all investment projects of the CI worth more than UAH 50 million, which should cover the financial condition of the contractor, the presence of criminal records, corruption risks, as well as an assessment of the regional security situation; it is advisable to conduct such a check jointly by NABU, SAPO and involved international agencies (such as IMF mechanisms in Indonesia) [7].

Secondly, it is necessary to revise the transitional provisions of Law No. 5593-d, reducing the period for maintaining government control over financial indicators to 12 months (instead of three years) and introducing automatic publication of all financial plans of state-owned enterprises.

Third, it is worth developing a regionally differentiated system of performance indicators (KPI) to assess the performance of state-owned enterprises of the ICE, taking into account the level of the current threat (frontline, rear, de-occupied zone), adapting the experience of Costa Rica, where ICE invested in economically unprofitable projects for the sake of a social goal [3].

Fourth, an annual public assessment of the activities of supervisory boards should be introduced with the participation of representatives of public organizations and donors; the Uruguayan practice of regular meetings between the heads of various service agencies indicates the high efficiency of horizontal coordination [4; 17].

Fifth, it is necessary to intensify the use of Prozorro tools, making it mandatory to publish all additional agreements (changes to contracts), indicating the reasons for the extension of terms and price changes, because the scandal with 63 Ukrenergo contracts became possible precisely because of the lack of proper control over changes [1].

## 6. Conclusions

The corporatization of state-owned enterprises of critical infrastructure in Ukraine, despite the formal adoption of OECD standards (Law No. 5593-d), is accompanied by deep dysfunctions: political interference (dismissal of the head of Ukrenergo contrary to the position of the supervisory board), corruption schemes (63 unfulfilled contracts for UAH 4.3 billion), chronic delays (water supply of Mykolaiv – over 3 years). The transitional provisions of the law, which maintain government control over financial indicators, are the main obstacle to the real autonomy of state-owned enterprises.

Positive international experience (Costa Rica – 100% electricity coverage under the solidarity model; Uruguay – horizontal integration and constitutional ban on water privatization; Indonesia – an IMF fiscal monitoring tool) proves that effective corporatization is possible provided there is a clear separation of powers, social consensus on non-commercial goals, and effective financial control.

To improve the efficiency of public management of the restoration of the CI, it is necessary to: immediately introduce mandatory due diligence for investment projects; shorten the period of transitional provisions of Law No. 5593-d; develop regionally differentiated KPIs; introduce an annual public assessment of supervisory boards; and strengthen control over changes to contracts in the Prozorro system. Only the comprehensive implementation of these measures will allow corporatization to become an effective tool for reconstruction, rather than a source of corruption risks. Prospects for further research include the adaptation of the IMF Health Check Tool fiscal monitoring tool to Ukrainian state-owned enterprises of critical infrastructure, the development of algorithms for automated monitoring of restoration projects based on the DREAM platform, as well as an analysis of the effectiveness of public-private partnerships in frontline regions.

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