

## ASSESSMENT OF THE FINANCIAL STATE OF CRITICAL INFRASTRUCTURE IN WARTIME CONDITIONS

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**Abstract.** *The work is devoted to the analysis of the financial condition of critical infrastructure in the conditions of a military conflict. The influence of military actions on the financial condition and the efficiency of critical infrastructure management was studied, it was found that the war period can lead to dynamic changes in the state of infrastructure objects, which requires adequate notification of the population.*

**Key words:** *financial condition, critical infrastructure, wartime, financial stability, resource provision, management efficiency.*

**JEL:** H56, O13

**Introduction.** In the conditions of a military conflict, ensuring the functioning of critical infrastructure, in particular energy supply, becomes important for the stability and survival of the country. Civilian infrastructure objects, such as energy networks and transport systems, become strategically important in the context of military operations, affecting the quality of life and safety of citizens. Researching the impact of military conflict on the financial condition of critical infrastructure and ways to increase its stability is an urgent and practically important task for governmental and non-governmental organizations. Analysis of financial reports, vertical and horizontal analysis, financial ratios, analysis of financial reports are used as research methods.

**Main part.** The conditions of a military conflict can cause changes in the mode of operation of state institutions, banks, enterprises, etc., which can worsen the planning of working hours. Legislation aimed at protecting critical infrastructure, such as energy, transport, information technology and other strategically important sectors, is also an important element (table 1).

**Table 1. Main legislative acts regulating the protection of critical infrastructure of Ukraine[1]**

№	Name	Date
1	Law of Ukraine "On Critical Infrastructure"	October 18, 2022 № 2684
2	Resolution of the Cabinet of Ministers of Ukraine on "Certain issues of critical infrastructure facilities"	October 9, 2020 № 1109 (as amended as of December 16, 2022 № 1384)
3	Resolution of the Cabinet of Ministers of Ukraine "On Approval of the Procedure for Monitoring the Security Level of Critical Infrastructure Objects"	July 22, 2022 № 821
4	Resolution of the Cabinet of Ministers of Ukraine "On approval of the Regulation on the exchange of information between subjects of the national system of critical infrastructure protection"	October 14, 2022 № 1174
5	Resolution of the Cabinet of Ministers of Ukraine "Some issues of information submission in the field of critical infrastructure protection"	October 14, 2022 № 1175
6	Order of the Administration of the State Service for Special Communications and Information Protection of Ukraine "On Approval of Methodological Recommendations for Categorization of Critical Infrastructure Objects"	January 15, 2021 № 23

According to the Law of Ukraine "On Critical Infrastructure", the classification of objects as critical infrastructure is carried out according to a set of criteria that determine their social, political, economic, ecological significance for ensuring the defense of the country, the safety of citizens, society, the state and law and order [2].

The conditions of a full-scale Russian invasion create difficult and dangerous situations for critical infrastructure workers, affecting their work and lives. Workers must take responsibility for their own safety by following strict safety precautions and evacuation plans. Constant shelling and security threats make it difficult to secure essential resources such as electricity and water, which are necessary for normal functioning, and create psychological stress for workers. Regional power supply facilities, such as Vinnytsyaoblenergo, have an important mission of ensuring reliable power supply to critical facilities and services that depend on electricity for the preservation of life and safety of citizens. Monitoring financial condition, especially liquidity and solvency, is key in management decision-making, especially in wartime. This analysis is necessary to ensure continuous operation of energy supply systems and support the functioning of enterprises and the population of the region.

The analysis of the financial situation for 2020-2023 shows that a number of indicators are not sufficiently high, which makes it financially difficult to ensure the further stable operation of the critical infrastructure object(table2).

**Table 2. Analysis of the main indicators of the financial condition of JSC "Vinnytsyaoblenergo"[3]**

№	Indicators	01.01.2020	01.01.2022	01.01.2023
1	Non-current assets, UAH million	1 245,6	1 634,2	1 822,8
2	Current assets, UAH million	201,5	413,5	913,8
3	Equity, million UAH	1 135,7	1 536,6	1 742,6
4	Long-term liabilities UAH million.	35,9	48,8	40,2
5	Current liabilities, UAH million.	275,5	462,3	953,8
6	Currency of the balance sheet, UAH million	1 447,1	2 047,7	2 736,6
7	Working capital, UAH million.	-74,0	-48,8	-40,0
8	Total coverage ratio	0,73	0,89	0,96
9	Coefficient of autonomy	0,78	0,75	0,64
10	Coefficient of financial dependence	2,55	2,67	2,82
11	Reliability coefficient	4,12	3,32	1,83
12	Financial risk factor	0,24	0,30	0,55
13	Debt ratio	0,22	0,25	0,36
14	Maneuverability coefficient	-0,07	-0,03	-0,02
15	Coverage with own working capital	-0,37	-0,12	-0,04

First of all, it is necessary to pay attention to indicators that ensure the possibility of work in the short and long term. Working capital (the availability of own working capital) has a negative value, which poses a threat to business continuity. As of January 1, 2020, non-current assets in the amount of UAH 74 million were covered by short-term liabilities. As of 01.01.2022 and 01.01.2023, this indicator was, respectively: UAH 48.8 million and UAH 40.0 million. For normal operation, at least 10% of current assets must be covered by equity. Accordingly, the total coverage ratio is less than 1, and the recommended value is 1.5-2. A positive point is the upward trend of this ratio and its approach to 1 (January 1, 2020: 0.73, January 1, 2023: 0.96). This growth is caused by an increase in equity during this period by UAH 606.9 million, or by 53%. Such growth fully meets the requirements of the basic concept of IFRS - the concept of equity preservation. Logically, the question arises about the factors of this growth, which requires further horizontal and vertical analysis, as provided by ISA 520 "Analytical procedures in auditing" [4].

**Table 3. Vertical analysis of equity capital[3]**

Indicators	01.01.2020		01.01.2022		01.01.2023	
	UAH million	%	UAH million	%	UAH million	%
Registered capital	31	2,7	31	2,0	31	1,8
Capital in additional assessments	209,3	18,5	184,4	12	172,3	10
Reserve capital	99,2	8,6	98,3	6,4	97,8	5,6
Additional capital	5,1	0,5	5,1	0,3	5,1	0,3
Retained earnings (uncovered loss)	791,1	69,7	1 217,8	79,3	1 436,4	82,5
Total	1 135,7	100,0	1 536,6	100,0	1 742,6	100,0

The results of the vertical analysis indicate a qualitative structure of equity capital: retained earnings increased from 69.7% on 01.01.2020 to 82.5% on 01.01.2023, which indicates the efficiency of operations. Net profit also increased from UAH 81.4 million in 2020 to UAH 333 million in 2022. This testifies to a successful dividend policy aimed at the maximum capitalization of profit.

A decrease in the relative value of the consumable part is also noted. The cost price of 1 hryvnia of sold products decreased from 0.96 in 2020 to 0.86 in 2022. This means that each hryvnia of production brings more gross profit, contributing to an increase in equity and a decrease in liabilities. This trend will contribute to the positive dynamics of working capital. [5, p. 151].

**Table 4. Analysis of return on assets of JSC Vinnytsiaoblenergo[3]**

№	Indicators	2022	2023	Deviation
1	Net sales revenue, UAH million	2 883,8	2 981,0	97,2
2	Total assets, UAH million	2 047,7	2 736,6	688,9
3	Long-term liabilities, UAH million.	264,2	595,1	330,9
4	Current liabilities, UAH million.	511,1	994	482,9
5	Return on assets ratio, %	1,41	1,09	-0,32
6	Accounts receivable ratio, %	0,09	0,20	0,11
7	Accounts payable ratio, %	0,18	0,33	0,15

Net income from sales increased by UAH 97.2 million, or by 3.4%, which is mainly due to an increase in tariffs as a result of inflationary processes. Attention should be paid to the significant growth of receivables and payables. Accounts receivable increased by UAH 330.9 million, or by 125.2%, payables increased by UAH 482.9 million, or by 94.5%. This is evidence of certain problems in the settlement system: the timeliness and completeness of fulfilling one's obligations. Based on this, it is necessary to strengthen the work in this direction for the further functioning of Vinnytsiaoblenergo JSC.

**Conclusion.** In wartime, ensuring the functioning of critical infrastructure, in particular the power industry, becomes crucial for the safety of society. The financial health of these infrastructures is a key factor affecting their ability to ensure safety and function. Effective management of resources and finances in these conditions is critical to the sustainability of critical infrastructures. Financial resource planning and risk management strategies can significantly increase the resilience of critical infrastructures during military conflicts.

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