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# INNOVATIVE TRANSFORMATION OF MARITIME SECTOR OF UKRAINE THROUGH PUBLIC-PRIVATE PARTNERSHIP

# ІННОВАЦІЙНА ТРАНСФОРМАЦІЯ МОРСЬКОЇ ГАЛУЗІ УКРАЇНИ ЧЕРЕЗ МЕХАНІЗМИ ПУБЛІЧНО-ПРИВАТНОГО ПАРТНЕРСТВА

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*Шлафман Н.Л., Зотєєв Р.Є., Михайленко В.І. Інноваційна трансформація морської галузі України через механізми публічно-приватного партнерства. Оглядова стаття.*

У статті розглянуті перспективи використання механізмів публічно-приватного партнерства з огляду на нещодавні зміни в регуляторній базі України. В умовах значного дефіциту держбюджету країни, на думку авторів, чи не єдиним засобом інноваційної трансформації морської галузі України, зокрема, морських портів, залишається механізм концесії. В роботі проаналізовано поточний стан та динаміку виконання концесійних проєктів в країні, в тому числі в портовій галузі, вказано на існуючі системні перешкоди, що гальмують їх реалізацію. На основі аналізу успішних кейсів в європейських портах наведено рекомендації щодо використання кращих практик втілення механізму концесій в портової галузі України.

*Ключові слова:* морський транспорт, морські порти, публічно-приватне партнерство, інновації, концесії, повоєнне відновлення

*Shlafman N.L., Zotieiev R.Ye., Mykhailenko V.I. Innovative Transformation of Maritime Sector of Ukraine Through Public-Private Partnership. Review article.*

This article considers the prospects for usage of public-private partnership mechanisms in connection with recent changes in the regulatory framework of Ukraine. By the authors' opinion, bearing in mind a significant deficit of the country's national budget, mechanism of concession remains almost the only mean for innovative transformation of the maritime industry of Ukraine and, in particular, seaports. The paper analyzes the current state and dynamics of the implementation of concession projects in the country (including port industry), and indicates the existing systemic obstacles that hinder their implementation. Basing on the analysis of successful cases in European ports, recommendations are given for implementing the concession mechanism in the port industry of Ukraine.

*Keywords*: maritime transport, seaports, public-private partnerships, innovation, concessions, postwar reconstruction

As noted in [1], by the end of the 20th century, Ukraine found itself among countries with developing markets and, as yet, dependent development: in economic, financial, scientific, and other respects, with an extreme weakness in innovation processes within the national economy. Full-scale war has only exacerbated these processes. As is well known [2], financing innovation requires long-term capital investment and is inherently risky. At the same time, Ukraine's 2026 state budget, adopted with a deficit of approximately 1.9 trillion hryvnias, is characterized by record expenditures (4.78 trillion hryvnias), half of which (2.81 trillion hryvnias) is allocated to defense. Total public debt is projected to exceed 10 trillion hryvnias (>101% of GDP), while external payments will account for a significant portion of the debt burden. Therefore, due to a lack of public funds, the only source of financing for innovative development is the attraction of private capital through public-private partnership mechanisms.

**Analysis of recent publications on the problem**

In recent years, publications by V.M. Geits, B.V. Burkinsky, O.I. Dmitrieva, K.V. Stepanova, V.Yu. Dudchenko, N.L. Tarakanova, and others have been devoted to the issue of seeking extra-budgetary sources of financing for Ukraine's economic development through the improvement of public-

private partnerships. The role of the concession mechanism in the development of the global seaport industry has been examined in articles by Chlomoudis C. et al., Notteboom T., and in publications by the World Bank and the European Commission.

The legal regulation of concessions in Ukraine is based on a comprehensive legal framework (as of February 2026, according to a search of the Verkhovna Rada's legislative database, there are 96 documents whose titles include the word "concession"). The key ones among them are: the Law of Ukraine "On Concessions", which defines the legal, economic, and organizational foundations for granting concessions for state and municipal property; the Civil Code of Ukraine, which contains general provisions on contractual relations; the Law of Ukraine "On Public-Private Partnership" No. 4510-IX; and the Law of Ukraine "On Public Procurement", which establishes procedures for conducting tenders.

Due to martial law and the shortcomings of current legislation, the effectiveness of agreement implementation remained extremely low [5] – as of 2025, only 11% of signed PPP contracts were actually being implemented (22 out of 200).

A landmark event in the field of investment regulation was the entry into force on October 31, 2025, of the Law of Ukraine "On Public-Private Partnership" No. 4510-IX. This law replaced Law No. 2404-VI, which had been in effect since 2010, and carried out a systematic modernization of the legislation with the aim of attracting private investment for post-war reconstruction, the development of critical infrastructure, and the modernization of the social sector.

From a legal perspective, the authors [17] highlight the following key provisions of Law No. 4510-IX:

— The transition from the concept of "state-private partnership" (SPP) to "public-private partnership" (PPP), replacing the term "state partner" with "public partner".
— Harmonization of national legislation with EU law and Ukraine's international obligations, particularly regarding compliance with Directive 2014/23/EU.
— Expansion of the scope of PPPs: from transportation and energy to social housing, healthcare, tourism, and digital infrastructure.
— Introduction of guarantees of legislative stability: throughout the entire term of the PPP agreement, the legislation in force on the date of the agreement's conclusion shall apply to it.
— The possibility of concluding agreements regarding facilities to be built or restored after the end of hostilities.
— Definition of grants as a form of state support and introduction of a demand guarantee mechanism (compensation for the difference).
— Requirement for mandatory residency of the concessionaire: only a legal entity that is a resident of Ukraine may be a concessionaire, which requires foreign investors to register a legal entity in Ukraine.

The law also provides for a new dispute resolution mechanism – the parties are now free to choose between mediation, national or international commercial or investment arbitration, including arbitration abroad. This serves as a significant safeguard for foreign investors. In addition, state support for the concessionaire is now permitted in the form of: availability payments; the concession grantor's purchase of a certain volume of goods or services; the supply of necessary goods; and the construction of ancillary infrastructure.

**Identification of previously unresolved parts of the general problem**

Despite a significant number of literature on public-private partnerships and the concession mechanism in Ukraine, researchers have overlooked questions regarding the practical effectiveness of implementing concession agreements in the maritime sector under martial law, as well as a comparative analysis of domestic practices with contemporary European concession cases from 2020–2025. In addition, the prospects for applying the updated Law of Ukraine "On Public-Private Partnerships" No. 4510-IX (which entered into force in October 2025) for innovative development have not been sufficiently explored.

**Formulation of research objectives (task setting)**

To analyze international experience in the use of concession mechanisms in the maritime sector and compare it with Ukrainian practice, as well as to identify opportunities for further improving the regulatory framework with a view to promoting investment and innovation in Ukraine's maritime sector.

**Materials and methods**

The information base of the study comprises: statistical data from the Ministry of Economy of Ukraine; Ukrainian regulatory acts, including the Law of Ukraine "On Concessions" No. 155-IX (2019) and the Law of Ukraine "On Public-Private Partnership" No. 4510-IX (2025); European Commission reports on the EU concessions market (COM/2023/0460); publications by the World Bank and PPIAF; annual reports of leading EU port authorities; and academic publications by domestic and international researchers in the fields of PPP and maritime economics. The study employs a combination of general scientific (generalization and systematization) and specialised methods (statistical analysis, comparative analysis and the case study method).

**Presentation of main results and their justification**

Within the Ukrainian legal framework for the maritime sector, two key forms of attracting private investment stand out: concessions and cooperative business activity. Despite their shared goal of modernizing infrastructure, these mechanisms differ fundamentally in terms of the nature of risk transfer, the scope of obligations, and the level of legal protection afforded to the parties.

As is well known, a concession grants the concessionaire the right to develop, construct, and operate a facility (such as a port) over a long period of time. The concessionaire assumes most of the risks, invests its own funds, and pays concession fees to the state, in return receiving the right to income from the operation of the facility. The law provides for the possibility of differentiating the concession fee and grants the parties the right to set it:

— as a fixed amount;
— as a percentage of the value of the facility granted under the concession based on its appraisal;
— as a share (in percentage terms) of the net income from concession activities received by the concessionaire;
— in the form of transferring to the grantor's ownership property owned by the concessionaire and acquired by the concessionaire in accordance with the terms of the concession agreement;
— by combining various types of concession payments.

At the same time, cooperative business activity is based on the pooling of the parties' contributions (in the form of assets, capital, or intellectual property) without the creation of a new legal entity. In seaports, Cooperative Business Activity (for example, in the Odessa Commercial Seaport) has historically been used as an intermediate stage of development; however, it is characterized by higher corruption risks, lower legal stability, and a less transparent reporting system compared to a concession.

Despite legislative progress, the actual effectiveness of implementing these agreements remains extremely low. As of August 2025, according to data from the Ministry of Economy of Ukraine, only 22 (11%) of the 200 PPP contracts signed are actually being implemented. At the same time, 114 contracts are not being implemented, 53 have been terminated or have expired, and 11 have been suspended due to armed aggression [5]. By comparison, in Turkey alone, 250 PPP projects have been actively implemented over the past 30 years, and construction is ongoing on another 20 [6].

Legal scholars [16–20] identify the following as the main systemic obstacles hindering the implementation of concession projects in Ukraine:

— Legislative: a lengthy, regulated procedure – preparing tender documentation under the old law could take up to three years, which undermines the project's investment appeal.
— Organizational: unformed tender commissions, the formation of which can take more than six months; lack of experience among civil servants.
— Financial: absence of a system of insurance guarantees and the reluctance of government authorities to provide guarantees to creditors.
— Reputational: low awareness among potential private.

An analysis of the major concession projects in Ukraine's offshore sector is provided below (Table 1).

Table 1. Analysis of the Implementation of Key Maritime Concessions in Ukraine

| Project | Investment commitments | Financial liabilities | Status as of 2026 |
|---|---|---|---|
| Specialised Port "Olvia" (Mykolayiv) | UAH 3.4 billion (first 5 years); term – 35 years | UAH 82 million per year (fixed payment) | The assets were transferred in December 2021. A memo-randum of understanding was signed with QTerminals of Qatar to resume the project (August 2025) |
| "Kherson" Commercial Sea Port | UAH 216 million (3.5 years) + UAH 62 million (10 years); term: 35 years | UAH 12 million per year + 7% of net income | Under negotiations regarding contract amendments due to force majeure (partial occupation and destruction) |
| The First and Container Terminals of "Chornomorsk" Commercial Sea Port | >US$100 million; ensure a container throughput of up to 250,000 TEU per year | This will be determined based on the results of the competition | Applications are being accepted until 22 March 2026; over 40 international applicants |

*Source: elaborated by the author based on [5, 11]*

The global market for maritime concessions is based primarily on the Landlord Port model, in which the government retains ownership of the land and receives 30–40% of the revenue from fixed rent, while the private sector invests in technology and operational efficiency [8]. In the EU total value of concessions covered by the Directive 2014/23/EU and awarded between 2016 and 2021 is estimated at EUR 377.5 billion [10]. This amount represents 12% of the yearly overall public procurement market covered by the three public procurement Directives combined. The Directive applies to concessions with a value equal or greater than EUR 5 382 0007.

According to the European Commission's 2023 Report on the implementation of the Concessions Directive (COM/2023/0460), concession contracts amount to an average value of EUR 63 billion per year across the EU, underpinning partnerships between the public sector and private companies in key strategic sectors – notably ports and airports, toll roads, and energy infrastructure [3]. In 2024, the Europe Port Infrastructure Market was estimated at approximately USD 163.4 billion globally, with the European segment expected to add over USD 11 billion in new capacity from 2024 to 2029. The sea port segment alone is projected to reach USD 145.1

billion by 2030, growing at a compound annual rate of 4.7%.

In terms of geographic distribution, Spain, France, and Italy collectively account for the largest share of awarded port concessions within the EU, reflecting both the scale of their coastlines and the maturity of their landlord port governance models. As of 2024, over 82 million TEUs were handled along Mediterranean routes compared with 61 million in North Sea ports – a shift that is driving intensified concession activity in Southern European ports. In the Baltic Sea region, Poland's "Polish Sea" national programme has mobilised investments in Gdynia and Szczecin-Świnoujście, including channel deepening to 12.5 m, container terminal expansion, and LNG infrastructure – all structured as long-term concession or PPP agreements with private operators. As part of the Connecting Europe Facility (CEF) 2021–2027, the EU has allocated EUR 25.8 billion for TEN-T transport grants, a significant share of which supports port hinterland connectivity and green port infrastructure co-financed alongside private concessionaires.

In both global and European practice, the scope of investments made by private concessionaires in port infrastructure can be systematically classified into the following categories. Each type has a distinct risk profile, and the allocation between the public grantor and the private operator varies accordingly (Table 2).

Table 2. Typology of Port Infrastructure Investments in EU Concession Practice

| Investment Category | Typical Components | Responsible Party under Landlord Port Model |
|---|---|---|
| 1. Basic Port Infrastructure | Port land, waterways, navigation channels, quay walls, berths, breakwaters, dredging | Public Port Authority (grantor) |
| 2. Terminal Superstructure | Container yards, warehouses, office buildings, cargo sorting areas, ro-ro ramps | Private Concessionaire |
| 3. Equipment and Cargo Handling | Ship-to-shore gantry cranes, automated guided vehicles (AGVs), straddle carriers, conveyor systems, forklifts | Private Concessionaire |
| 4. Intermodal Connectivity | On-dock rail connections, inland container depots, road gates, dry ports; rail access cuts transit times by 30%+ (ASCE, 2025) | Shared (Public Authority + Concessionaire) |
| 5. Digital and IT Infrastructure | Terminal operating systems, IoT sensors, AI-based berth allocation, digital twins, cybersecurity, 5G networks, port community systems | Private Concessionaire (increasingly mandatory in EU agreements) |
| 6. Green / Energy Infrastructure | Onshore Power Supply (OPS), LNG bunkering, hydrogen pipelines, solar/wind generation, electric cargo equipment; 44 EU ports across 15 Member States had OPS-enabled berths by 2025 (EU Blue Economy Observatory) | Shared (Public Authority + Concessionaire, co-financed via CEF) |
| 7. Logistics and Value-Added Zones | Free trade zones, distribution parks (distriparks), bonded warehouses, ship repair facilities | Private Concessionaire |

*Source: elaborated by the author based on [21-24]*

The typology above illustrates the fundamental principle of the EU Landlord Port model: the public authority retains ownership of basic infrastructure (Categories 1 and, partially, 4) and bears the associated investment risk, while the private concessionaire finances, builds, and operates all productive superstructure and equipment (Categories 2, 3, 5, and 7). Category 6 – green and energy infrastructure – is increasingly funded through a co-financing arrangement, combining concessionaire obligations stipulated in the agreement with EU grants under the Connecting Europe Facility (CEF) and national environmental programmes. This model ensures that each EUR of public investment into basic infrastructure leverages 3 to 5 EUR in additional private and commercial investment – a multiplier effect well documented in port economics literature [6].

The vast majority of successful European concession projects involve investments in the development of container terminals [16]. Let's list a few of them.

The Port of Antwerp-Bruges (Belgium): In 2024, it posted an 8.1% increase – the best performance among the top three EU ports. This success is due to the efficient operation of private terminals under the Landlord Port model and the successful integration of terminals operated by MSC/TIL and CMA CGM, which ensured a stable cargo flow even amid market volatility.

Port of Rotterdam (Netherlands): The Maasvlakte-2 concession remains an international benchmark. Renewed agreements with operators Hutchison Ports and APM Terminals (2022–2023) have enabled the port to maintain its leadership position with a transshipment volume of 14.5 million TEU. The new terms of the agreements include a commitment to build infrastructure for shore-based power supply (Onshore Power Supply) to ships, which is an important environmental standard [13].

Port of Valencia (Spain): In 2024, it received €1.6 billion in investment from TIL (Mediterranean Shipping Company) to build a new, fully automated northern terminal. As a result, the port surpassed Piraeus, Greece, and became the fourth-largest in the EU – demonstrating the transformative potential of concession agreements.

Port of Le Havre (France) – HAROPA: In 2024, it led the growth in container capacity among major EU ports (+18.7%). This success was driven by new

concession agreements for the modernization of container terminals.

Port of Gdańsk (Poland) – Baltic Hub: Thanks to a successful concession agreement with PSA International, the port has achieved double-digit growth (>10%) even while terminal expansion work was in full swing, establishing itself as a key hub in the Baltic Sea.

In 2006, a concession agreement signed in Barcelona between the port authority and Hutchison Port Holdings provided for a total investment of €500 million – a testament to the scale Ukraine could achieve.

Modern concession agreements in the EU have evolved from purely economic models to strategic partnerships. In summary, the following key trends for 2020–2025 can be identified:

— Environmental commitments: The agreements include mandatory provisions regarding the use of sustainable fuels (hydrogen, ammonia), charging stations for electric vessels, and carbon offsetting.
— Protection against foreign influence: The European Commission has tightened controls on investments, particularly from Chinese companies, requiring mutual market access.
— "Green corridors": Multilateral agreements on zero-emission corridors between ports are being signed—this is becoming part of concession terms.
— Indexation of payments: All modern agreements include provisions for indexation based on the Consumer Price Index, which became critical in 2022–2023 due to inflation in the Eurozone.
— Force Majeure: Following the COVID-19 pandemic and the Suez Canal blockage, agreements now include flexible mechanisms for revising minimum volumes.

Generalizing this experience, it is possible to formulate a set of criteria used to assess the success of concession projects in the EU port sector (Table 3).

Table 3. Project Assessment Key Success Criterion

| Assessment Category | Key Success Criterion |
|---|---|
| 1. Contractual | Precision of agreement subject, clear allocation of responsibilities, risk sharing |
| 2. Financial | Economic viability, sound financial package, minimum guaranteed throughput |
| 3. Operational | Throughput KPIs, penalty/bonus mechanisms, land utilization |
| 4. Environmental | Green KPIs, Onshore Power Supply (OPS) obligations, carbon reduction targets |
| 5. Governance and Transparency | Transparent procurement, strong private consortium, political stability |
| 6. Strategic (EU specific) | Foreign ownership control, dual-use infrastructure security |

*Source: authors' own elaboration*

It should be noted that currently in Ukrainian practice, the concept of PPP is understood somewhat narrowly, as a partnership primarily between the state and the private sector, leaving out municipal and regional management bodies. At the same time, in EU ports an important role is played by partnership at the municipal and regional level. For example, Port of Rotterdam, Netherlands, is managed by the joint-stock company Port of Rotterdam Authority (PoR). It is a non-public joint-stock company in which 75% of the shares belong to the municipality of Rotterdam, and 25% to the state of the Netherlands. In this partnership, port administration is responsible for the development of public infrastructure, management of berthing areas and new port territories, while the municipality of Rotterdam is interested in controlling how the Port Authority disposes of land plots and in which infrastructure (shore power supply, hydrogen pipelines) funds are invested. Strategic planning of the development of the port is carried out jointly by the city council, the province of Zeeland-Holland and the federal government – within the framework of the so-called project "Port Vision", which is approved by the city council of Rotterdam.

**Conclusions and prospects for further research**

The implementation of concessions in the maritime sector is becoming critical for Ukraine given the projected 2026 state budget deficit of approximately 1.9 trillion UAH. With revenues of UAH 2.92 trillion and expenditures of UAH 4.78 trillion (27.2% of GDP allocated to defense), the state is unable to finance infrastructure modernization on its own. Total public debt is projected to exceed 10.47 trillion UAH (101.6% of GDP), of which ~80% is external debt.

Under these circumstances, a concession is not only a mechanism for attracting investment but also a tool for reducing the state's debt burden – since the private partner finances the development of infrastructure projects without increasing public debt. At the same time, the need for innovative development in the maritime sector is dictated by the task of restoring infrastructure destroyed as a result of hostilities, but on a new technological basis.

The adoption of Law No. 4510-IX significantly improves the legal environment; however, structural challenges remain: bureaucratic barriers, a lack of insurance guarantees, and a shortage of qualified personnel within the civil service to prepare and manage concession projects. At the same time, there are potential obstacles due to the limited application of the Public-Private Partnership (PPP) framework [14] to research and innovation infrastructure projects, in particular the unjustified restriction on the establishment of innovative enterprises exclusively within educational institutions. In our view, this approach narrows the potential for engaging the private sector in the development of scientific and research infrastructure.

Based on the analysis carried out, the following recommendations can be formulated:

— Introduce a "Minimum Guaranteed Throughput" mechanism modelled on the Rotterdam system – to stabilize state budget revenues from concessions and reduce financial risks for private partners.
— Include "green transition" conditions in new concession agreements: obligations regarding shore-side power supply (OPS) for vessels and requirements for the supply of alternative fuels. This is in line with EU strategy and will enhance the attractiveness of Ukrainian ports for Euro-Atlantic operators.
— Step up the practical application of the guarantees of legislative stability provided for in Law No. 4510-IX by drafting model PPP contracts containing the relevant provisions and having them ratified by the Verkhovna Rada.
— Reduce the time taken to prepare tender documentation to 6–12 months by introducing an electronic system for preparing PPP/P3 projects, modelled on the Polish and Turkish experiences.
— Develop an institutional mechanism for War Risk Insurance for existing projects under martial law, involving international guarantee funds (MIGA, EBRD).
— Adopt a sectoral strategy for the development of Ukraine's seaports for 2026–2035, which will identify priority assets for concession, taking into account post-war reconstruction and European integration requirements.
— To specify the rules governing PPPs in the scientific and technical sector in specific laws (the "Law on Science Parks", the "Law on Industrial Parks", etc.) or to draft a general provision on the specific features of PPPs in the field of science and research in Chapter VIII of the Law of Ukraine "On Public-Private Partnership".

In our view, all abovementioned actions will help to bring about innovations aimed at rebuilding and developing of the port sector of Ukraine based on the latest technology achievements.

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**Abstract**

Topicality. Ukraine's maritime industry faces a critical financing gap amid the ongoing war: the 2026 state budget carries a deficit of ~UAH 1.9 trillion, with total public debt exceeding 101% of GDP. Under these conditions, concession-based public-private partnership (PPP) mechanisms represent virtually the only viable instrument for innovative transformation and post-war reconstruction of the country's seaport infrastructure.

Aim and tasks. The study aims to analyze European experience in implementing port concessions, compare it with Ukrainian practice, identify systemic obstacles, and formulate evidence-based policy recommendations for improving Ukraine's regulatory framework.

Methods. The study applies regulatory analysis of Ukraine's evolving legislative framework, including the newly enacted Law No. 4510-IX on PPP (October 2025); statistical analysis of existing PPP agreement performance (Ministry of Economy of Ukraine, 2025); and comparative case study analysis of concession practices at leading EU ports – Rotterdam, Antwerp-Bruges, Valencia, Le Havre, and Gdańsk.

Results and conclusions. As of 2025, only 11% of concluded PPP agreements in Ukraine are actively implemented, reflecting structural deficiencies: prolonged tender procedures, absence of risk insurance mechanisms, and shortage of qualified civil servants. The newly enacted Law No. 4510-IX substantially improves the legal environment by harmonizing Ukrainian legislation with EU Directive 2014/23/EU and introducing legislative stability guarantees. Drawing on European best practices, the authors recommend introducing minimum guaranteed throughput mechanisms, incorporating green KPIs and Onshore Power Supply (OPS) obligations into concession agreements, establishing war risk insurance instruments (MIGA, EBRD), and adopting a sectoral port development strategy for 2026–2035.

**References:**

1. Heiets, V. M. (2009). Society, state, economy: Phenomenology of interaction and development. Institute for Economics and Forecasting, NAS of Ukraine.
2. Dmytriieva, O. I. (2020). State regulation of innovative development of transport infrastructure: Theory, methodology, practice. Kharkiv National Automobile and Highway University.
3. European Commission. (2023). Report on the implementation of the Concessions Directive (COM/2023/0460 final). Publications Office of the European Union. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52023DC0460
4. Verkhovna Rada of Ukraine. (2025). Law of Ukraine "On public-private partnership" No. 4510-IX of June 19, 2025. https://zakon.rada.gov.ua/laws/show/4510-20

5. Ministry of Economy of Ukraine. (2025). State of public-private partnership implementation in Ukraine.https://me.gov.ua/Documents/Detail?lang=uk-UA&id=9fc90c5e-2f7b-44b2-8bf1-1ffb7ee1be26
6. Daily Sabah. (2023, November 19). Türkiye makes nearly $100B investment via public-private partnership. https://www.dailysabah.com/business/economy/turkiye-makes-nearly-100b-investment-via-public-private-partnership
7. National Institute for Strategic Studies. (2020). Concession of seaports as a modernisation mechanism. https://niss.gov.ua/sites/ default/files/2020-08/kontsesiya-mor-portiv_0.pdf
8. Chlomoudis, C., Kostagiolas, P., Pallis, P., & Platias, C. (2024). Advancing port sustainability: Essentials for a model concession agreement framework. Journal of Infrastructure, Policy and Development, 8(5), Article 3535. https://doi.org/10.24294/jipd.v8i5.3535
9. World Bank & PPIAF. (2022). Toolkit for public-private partnerships in ports and shipping. World Bank Group. https://ppp.worldbank.org/keyword/ports
10. European Commission. (2021). The EU concessions market: Analysis and trends 2016–2021. https://euagenda.eu/publications/download/588397
11. U-LEAD with Europe Programme. (2017). Public-private partnership as a mechanism for implementing the new regional policy. https://rdpa.regionet.org.ua/images/129/PPP_report_U-LEAD_30_10_2017.pdf
12. Forbes Ukraine. (2026, February 6). The tender committee has extended the deadline for submitting bids for the concession tender regarding two terminals at the Port of Chornomorsk. https://forbes.ua/ru/news/konkursna-komisiya-prodovzhila-stroki-podannya-zayavok-na-kontsesiyniy-konkurs-dlya-dvokh-terminaliv-portu-chornomorsk-06022026-36137
13. Verkhovna Rada of Ukraine. (2019). Law of Ukraine "On concession" No. 155-IX of October 3, 2019. https://zakon.rada.gov.ua/laws/show/155-20
14. Port of Rotterdam Authority. (2023). Annual report 2023: Sustainability and concession strategy.
15. Mamayev, I. O. (2025). Adaptation of legal regulation of public-private partnership to the needs of science. Pravo ta innovatsii, 3(51), 19–24. https://doi.org/10.37772/2518-1718-2025-3(51)-8
16. Notteboom, T. (2025). Top-15 EU container ports in 2024: Strong growth despite geopolitical tensions. PortEconomics. https://www.porteconomics.eu/top-15-europen-union-container-ports-in-2024
17. Pozychaniuk, K., & Zhytynskyi, O. Public-private partnership as a model for rebuilding Ukraine's infrastructure. Ligazakon Biz. https://biz.ligazakon.net/analitycs/241858_publchno-privatne-partnerstvo-yak-model-vdbudovi-nfrastrukturi-ukrani
18. Umantsiv, H. V. (2025). Development of the concession institution in Ukraine. Akademichni vizii, (47). https://academy-vision.org/index.php/av/article/view/2328. https://doi.org/10.5281/zenodo.17533347
19. Brailovskyi, I. A. (2025). Models of public-private partnership. Akademichni vizii, (50). https://www.academy-vision.org/index.php/av/article/view/2724. https://doi.org/10.5281/zenodo.18487093
20. Dudchenko, V., Shcherbachenko, V., Lebid, V., Piven, V., & Parkhomenko, D. (2025). Managing post-war reconstruction of Ukraine based on public-private partnership: European experience. Tavriiskyi naukovyi visnyk. Seriia: Ekonomika, (24), 78–92. https://doi.org/10.32782/2708-0366/2025.24.8
21. European Commission, Directorate-General for Maritime Affairs and Fisheries & Joint Research Centre. (2025). The EU Blue Economy Report 2025. https://op.europa.eu/webpub/mare/eu-blue-economy-report-2025/index.html
22. Bonafide Research. (2024). Europe port infrastructure market outlook, 2029. https://www.bonafideresearch.com/product/240459683/europe-port-infrastructure-market
23. Research and Markets. (2025). Port infrastructure – Global strategic business report 2025–2030. https://www.researchandmarkets.com/r/k49yaz
24. American Society of Civil Engineers. (2025). 2025 report card for America’s infrastructure: Ports. https://infrastructurereportcard.org/cat-item/ports-infrastructure
25. de Langen, P. W. (2023). Advancing public interests through state ownership: the case of Port of Rotterdam. GeoJournal, 88, 6507–6521. https://doi.org/10.1007/s10708-023-10981-9



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