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Public-private Partnership in the Utility and Energy Sector: Achieved Results, Problems and Challenges

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Abstract. The inefficiency of the functioning of the utility and energy sector of Russia, accompanied by limited funds of the state (municipal) budget, actualizes the issues of the use of public-private partnership (hereinafter — PPP) in this area. The purpose of the article is to study the Russian practice of using PPP in the utility and energy sector in the context of evaluating the results achieved, identifying current problems and challenges. The methodological basis of the study was the basic provisions of the dialectical method of cognition. The author defines and systematizes the achieved results of the use of PPP in the utility and energy sector of Russia, starting in 2016 and up to the present. This made it possible to identify problems and challenges related to this process of a legal, organizational, economic, financial, industrial and informational nature. The materials of the conducted research can be used in the development and decision-making to ensure the effective development of the utility and energy sector on the basis of PPP.

Keywords: utility and energy sector, PPP, concession agreement, project, partner

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Introduction

The issues of ensuring the quality and uninterrupted functioning of the utility and energy sector affect the interests of every person, as they have a significant impact on the quality of life. In modern conditions, such an impact in some cases has a negative character, largely due to the unsatisfactory state of the municipal energy infrastructure. This is confirmed by the following facts: the level of wear in the utility and energy sector of our country is more than 50 %, which requires the replacement of 31 % of heating networks, 44 % of water pipes, 46 % of sewer networks and almost every fifth elevator. The need for annual replacement of pipes of heat and water supply facilities is at least 5 % of the total number of such pipes with high wear, which is 3 percentage points lower than the actual number of replaced pipes. The consequence of the critical deterioration of housing and communal services funds is the provision of drinking water to the population of abnormal quality and in insufficient volume, as well as frequent accidents. Due to the increased pollution of water sources, traditionally used water treatment technologies become ineffective and in forty cases out of a hundred do not provide drinking water that meets sanitary rules and regulations. In 2020–2021, there were more than 7.3 thousand network failures due to their high degree of wear [1].

One of the main reasons for the high risk of a large-scale disaster in the utility and energy sector is its chronic underfunding, the size of which is approaching 5 trillion rubles. This, combined with an insufficient level of managerial, technical and other competencies, leads to the provision of substandard utility and energy services, in some cases causing serious danger to the life and health of the population. For example, in 2013–2020, 230 people were injured and 79 people died from boiling water spills [2].

In the current situation, the importance of PPP is increasing, which allows, in conditions of limited funds from the state (municipal) budget, lack of experience and competencies in the utility and energy sector, to successfully implement investment projects in this area by attracting financial, material, labor and other resources from a private partner, sharing risks and responsibilities between partners on mutually beneficial terms. To confirm the success of the implementation of PPP projects in the utility and energy sector, we present the following data from the Ministry of Construction of the Russian Federation: with the active use of PPP, accidents in the utility and energy sector are reduced by 47 %, and losses in networks by 18 % [3].

The above together predetermined the purpose of the article — the study of the Russian practice of using PPP in the utility and energy sector in the context of evaluating the results achieved, identifying current problems and challenges.

Methods and materials

The methodological basis of the study was the basic provisions of the dialectical method of cognition. As part of the methods used, we will highlight the following: observation and description (allowed us to obtain and consolidate knowledge about the specifics of the use of PPP in the utility and energy sector), synthesis (provided a study of Russian trends in the development of PPP in the utility and energy sector in integrity, unity and interconnection), analysis (contributed to the identification and study of the results achieved and actual problems of application PPP in the utility and energy sector), historical and logical methods (contributed to the establishment of the changes that have occurred in the development of PPP in the utility and energy sector and the development of measures to achieve its best results, taking into account modern challenges).

Results

The main sources of information used in the study were analytical data from the Rosinfra platform for the period starting in 2016 and ending in June 2023 [4]. The study of these data allowed us to draw the following conclusions about the achieved results of the use of PPP in the public utilities and energy sector of Russia.

1. The utility and energy sector accounts for the largest number of PPP projects — on average about 80.0 %. From the analysis of the dynamics of the number of such projects, the period from 2015 to 2017 is characterized by higher growth rates compared to previous years. The main reason for this is related to the entry into force of the Federal Law "On Amendments to the Federal Law 'On Concession Agreements' and Certain Legislative Acts of the Russian Federation" dated 05.07.2013 No. 103-FZ (hereinafter referred to as the Law on Concession), according to which public legal entities are obliged to transfer heat, water supply and sanitation facilities according to concession agreements. In turn, this led to the transformation of concluded lease agreements with investment obligations into concession agreements, the termination/invalidation of such lease agreements and the subsequent conclusion of concession agreements [5]. It should also be said about the direct connection between the number of PPP projects in the utility and energy sector with the maximum infrastructure gap: this area, on the one hand, is less resource-intensive compared, for example, with the transport sector, and, on the other hand, the urgency of its infrastructural renewal is higher than in other areas, since a significant number of utilities-energy facilities were built during the Soviet period and currently do not meet modern requirements in terms of their technical and operational characteristics.
2. The leading positions in the total number of public utility and energy PPP projects are occupied by the sectors of heat supply, water supply and sanitation. At the same time, more than half of all these projects are implemented in the heat

supply industry, followed by the water supply and sanitation industries, which are approaching the heat supply industry in terms of the number of projects being implemented. The gas and electricity supply industries are significantly inferior to the above-mentioned industries in terms of quantitative indicators of the implementation of PPP projects.

3. The volume of funds invested in public utility and energy PPP projects occupies the second position after PPP transport projects — on average more than 20 % of the total volume of investments in the PPP market. More than 90 % of public utility and energy PPP projects are funded by a private partner and are characterized by low capital intensity. More than 85 % of PPP projects in housing and communal services have an investment volume of no more than 250 million rubles. At the same time, there are projects with investments of more than 10 billion rubles. One of these projects that went through commercial closure in 2021 is the concession agreement for the Lyubertsy and Kuryanovsky wastewater treatment plants in Moscow with a total private investment of about 27 billion rubles.
4. Public utility and energy PPP projects, as a rule, are concluded in the form of a concession agreement at the municipal level, which is due to the following. In comparison with other forms of PPP, the concession agreement has a number of advantages (protection of investor risks; simplicity and clarity of interaction between partners; the existence of a Law on concession regulating the preparation, conclusion and execution of the concession agreement, the established law enforcement and judicial practice of applying the concession agreement at the federal, regional and local levels). Municipal authorities, whose powers are closely related to the functioning of the municipal energy sector, in the absence of opportunities to ensure the construction, modernization, reconstruction and operation of its facilities on their own, are interested in concluding a concession agreement that allows maintaining municipal energy facilities in municipal ownership and exercising municipal control over their use by private partners [6; 7; 8].

Along with the concession agreement, PPP projects in the utility and energy sector are implemented in other forms (an energy service contract for electricity and heat supply facilities; a lease agreement with investment obligations for heat, water supply, sanitation facilities in cases provided for by law, etc.).

5. The Volga, Central, Siberian and Far Eastern Federal Districts occupy the leading positions in quantitative terms in terms of the implementation of PPP projects in the utility and energy sector, and in monetary terms — the Central, Southern, Volga and Ural Federal Districts.

At the present stage of PPP development in the utility and energy sector, it is under the influence of many risks, primarily due to an increase in the cost of resources, a decrease in the payment discipline of consumers of utility and energy

services, the search for analogues to imported equipment, and problems of a legal, organizational, economic and financial nature. Let's look at these problems in more detail.

The legal problems are mainly related to the imperfection of the regulatory framework for PPP in the utility and energy sector. There are low entry barriers for market participants of such a partnership, manifested, firstly, in the absence of legislative criteria for the selection of potential concessionaires and activities in investment programs not directly related to the construction and modernization of public utilities; secondly, in the participation of unitary enterprises and budgetary institutions on the side of concessionaires; Thirdly, the low quality of the technical examination by public partners and the non-reimbursement of concessionaires' costs for technical examination when submitting private concession initiatives. Because of this, it is required:

- establishment of reasonable qualification requirements for potential concessionaires in order to reduce the risk of their failure to comply with the terms of concession agreements and mandatory reimbursement of technical inspection costs by persons who applied for a concession agreement in order to increase the interest of private investors in participating in PPP projects in the utility and energy sector;
- a ban on the conclusion of concession agreements with unitary enterprises and budgetary institutions as concessionaires to ensure the inflow of private investment in the utility and energy sector;
- expanding the list of investment measures included in the investment programs of resource-supplying organizations to reduce the risk of a shortage of financial resources for concessionaires necessary to fulfill obligations under the concession agreement.

Organizational and economic problems are manifested, firstly, in the choice of a suboptimal legal structure of PPP projects in the utility and energy sector and their irrational management, and, secondly, in the lack of measures to ensure comprehensive and comprehensive support for such projects at all stages of their life cycle.

One of the important places in solving the first organizational and economic problem is occupied by the Rosinfra platform, with the help of which it is possible to significantly reduce the launch time of PPP projects in the utility and energy sector and improve the quality of their structuring, as well as to carry out effective interaction between partners. Standardization of project management based on the digital project office of the Rosinfra platform is based on the use of uniform standards for structuring and managing PPP projects, a methodological approach, as well as the best standard solutions / documentation templates. The main effects of using this digital project office are a two- to three-fold increase in the number of PPP projects launched per year and a two-fold reduction in the time required

to prepare and launch PPP projects, ten times the cost of pre-structuring, twice the risks of termination of agreements and default of PPP projects [9].

To solve the second organizational and economic problem, it is necessary for the state to provide a guaranteed level of protection for investments of private partners of PPP projects in the public energy sector (for example, by fixing equal conditions for concessionaires and contractors working with public financing; imposing a moratorium on fines for failure to meet deadlines for commissioning public energy facilities and violation of other contractual conditions; granting the right to amend agreements on the implementation of PPP projects without additional approvals from the antimonopoly authority) [10].

Financial problems are associated with limited investor demand for the risks of project bonds and a lack of sources of financing investments in public utility and energy PPP projects. Stimulating investments in project bonds is possible by limiting government guarantees or guarantees from development institutions in order to create qualitatively structured issues of project bonds, which are based on the division of project risks between investors, the state and banks, which allows ensuring the sustainability of financing of public utility and energy PPP projects and the financial market as a whole. It is also important to note the need to use long-term savings of the population in order to stimulate new sources of financing investments in public utility and energy PPP projects. At the same time, issues of project finance bonds placed by special forms of SPV companies (specialized financial companies and special project finance companies with a high level of credit rating) can act as an optimal tool for investing public funds, which ensures the growth of liquidity of such bonds [11].

The above-mentioned problems require special attention, quick and high-quality solutions, as they represent clearly defined challenges in order to move forward in the development of the utility and energy sector based on PPP.

Conclusion

Despite the presence of various risks and problems faced by PPP participants in the utility and energy sector, in the future, the number of PPP projects in this area will continue to grow. One of the catalysts for this will be the provision of support for PPP initiatives (subsidies and loans from the Housing and Communal Services Fund, boxed solutions from banks for lending concession agreements, infrastructure bonds). At the same time, solidarity and coordination of actions of all PPP participants is equally important as an essential condition for ensuring the successful launch and effective implementation of public utility and energy PPP projects. At the same time, it is important that public partners timely and correctly understand the objective reasons for the difficulties associated with the launch and implementation of public utility and energy PPP projects, and also be able to compensate for the negative

consequences of such difficulties by using mechanisms provided for by industry, budget, tax and other legislation of the Russian Federation.

The further development of the Russian practice of implementing PPP projects in the utility and energy sector creates new challenges that present new opportunities in the development of this area based on partnership between the state and business. Such challenges include:

- ensuring the readiness of industrial enterprises to meet the demands of the utility and energy sector in terms of sufficient production volumes (including import-substituting) of materials, components, equipment, etc. necessary for the smooth functioning of this sphere;
- development of mechanisms for a comprehensive assessment of needs in the construction, reconstruction and modernization of utilities and energy facilities and expansion of areas of state (municipal) participation in the implementation of these processes;
- digital transformation of the utility and energy sector based on the use of domestic software solutions aimed at improving the efficiency of this sector, provided that the existing digital inequality is eliminated.

In conclusion, we note that accelerating the implementation and scaling up of public utility and energy PPP projects will provide a powerful synergistic effect for the economy of our country and improve the quality of life of the population.

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Государственно-частное партнерство в коммунально-энергетической сфере: достигнутые результаты, проблемы и вызовы

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Аннотация. Неэффективность функционирования коммунально-энергетической сферы России, сопровождающаяся ограниченностью средств государственного (муниципального) бюджета, актуализирует вопросы применения государственно-частного партнерства (далее — ГЧП) в этой сфере. Целью статьи является исследование российской практики применения ГЧП в коммунально-энергетической сфере в контексте оценки достигнутых результатов, выявления актуальных проблем и вызовов. Методологическую основу исследования составили базовые положения диалектического метода познания. Автором определены и систематизированы достигнутые результаты применения ГЧП в коммунально-энергетической сфере России, начиная с 2016 года и по настоящее время. Это позволило выявить связанные с этим процессом проблемы и вызовы правового, организационно-экономического, финансового, производственного и информационного характера. Материалы проведенного исследования могут быть использованы при разработке и принятии решений по обеспечению эффективного развития коммунально-энергетической сферы на основе ГЧП.

Ключевые слова: коммунально-энергетическая сфера, ГЧП, концессионное соглашение, проект, партнер

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