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Identification of Threats to Economic Security Subjects of the Tariff Regulation System Commodity Markets of Natural Monopolies

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ABSTRACT
The article substantiates the proposition that the state's economic security in commodity markets of basic industries primarily consists of effectively implementing two functions: tariff regulation, which ensures fair pricing and sustainable development of the industry, and ongoing effective control and high-quality supervision aimed at the timely identification and elimination of potential violations of established norms and standards that guarantee stable market functioning. A comparative analysis of key provisions of regulatory legal acts governing strategic planning processes in the constituent entities of the Volga Federal District, directly affecting the organization and implementation of tariff regulation, was conducted. This analysis allowed us to identify and examine in detail the main potential risks and existing threats that could negatively impact the economic security of individual regions in the crucial area of tariff regulation of basic economic sectors. Based on an analysis of the development of the institution of tariff (antimonopoly) regulation, the list of previously identified negative consequences of the concentration of powers within a single mega-regulator – the Federal Antimonopoly Service of Russia – has been expanded. Judicial practice in considering disputes involving the mega-regulator regarding the invalidation of orders issued by the Federal Antimonopoly Service in the constituent entities of Russia based on unscheduled documentary audits conducted, for which court decisions were made from January 1, 2023 to July 1, 2025. Measures to mitigate threats are proposed concentration of powers in the area of tariff (antimonopoly) regulation within the framework of one mega-regulator. Based on the conducted research, essential conditions that must be taken into account when improving tariff regulation in the regions of the Volga Federal District were identified.
Keywords: *Tariff regulation, economic security, markets of basic industries, balance of interests, economic security, alternative boiler room, heat supply, energy strategy, risks, threats, mega-regulator*

INTRODUCTION

The relevance of the study of the identification of threats to the economic security of commodity markets in basic industries is determined by a number of factors characteristic of the current stage of socio-economic development in Russia.

First of all, tariff regulation is based on key economic sectors such as energy, housing and utilities, transportation, and communications, which directly impact the quality of life of citizens and the competitiveness of industry. Inappropriate tariffs lead to increased business costs and a worsening consumer situation.

Secondly, in A number of basic industries are dominated by large monopolistic players or oligopolistic markets. Control and regulation, on the one hand, reduce tariffs and improve resource efficiency; on the other, if excessive, they can hinder the implementation of innovative technologies and infrastructure modernization, reducing the long-term prospects for technological progress and productivity growth. Ewe bypass the search for a balance of interests in their implementation.

Thirdly, Global integration trends are increasing the need to harmonize national regulatory standards with international norms, which further complicates the FAS's interactions with businesses and consumers.

Consequently, an in-depth study of tariff regulation in basic industries and an analysis of the associated negative effects make it possible to identify key barriers and develop measures to improve the institutional regulatory framework that ensures balanced economic development and improved welfare for citizens.

The purpose of this study is to systematize the risks and identify threats to the economic security of the state as a subject of commodity markets in basic industries based on the analysis of regional legislation in the field of tariff regulation using the example of the regions of the Volga Federal District, regulations and judicial practice in the consideration of disputes in which the mega-regulator of tariff (antimonopoly) regulation – the Federal Antimonopoly Service – is a participant.

Tariff regulation issues for basic industries are relevant worldwide. Moreover, the historically established operating conditions of these industries are interrelated with the choice of tariff-setting methods, which

in turn influences the development of economic security threats in various countries.

The search for solutions to the problem of greenhouse gas emissions in the district heating sector in Norway, aimed at achieving zero emissions, requires a gradual transition to renewable energy sources. The maximum tariff for district heating is determined by comparing it with alternative options, such as the average monthly wholesale price of electricity [1]. It should be noted that the pricing methodology itself is not established by Norwegian law; only the upper tariff limit is defined, which does not take into account the costs of the utility.

In the UK, the Office for Gas and Electricity Markets (Ofgem), being the government regulator of the electricity markets and subsequent supplies of natural gas, proposes to regulate the tariff cap using the following factors: “wholesale electricity prices, energy network costs, costs associated with government social and environmental programs to save energy, reduce emissions and encourage the use of renewable energy sources, operating costs, a payment method surcharge, a reserve surcharge, the return on investment of suppliers and VAT (a 5% tax added to the tariff level)” [2].

International Energy Agency (IEA)[3]indicates rising energy prices in Europe. Factors contributing to this include the climate situation, low investment, and disruption of supply chains (sanctions against Russia, including those caused by the start of a special military operation). This leads to a decline in the quality of life of the population and a decline in production volumes, which, in turn, affects the slowdown of economic growth, and some countries are on the brink of recession. These facts influence the research of pricing models in commodity markets by foreign scientists, taking into account the main trend toward decarbonization, which includes energy conservation, supply diversification, and clean energy production. Thus, tariffs Heat supply prices in the European Union countries depend primarily on the price of the underlying fuel (natural gas, solar energy, industrial waste heat, heat pumps, geothermal energy, biomass and biofuels, non-renewable waste, oil, coal and peat) [4]. Many researchers note the differences between heat supply and other commodity markets due to the pricing models used there and its local nature, which imposes certain limitations on price formation, since it is impossible to use market equilibrium. Whereas for the electric power industry, prices can be set as a result of exchange trading and the establishment of a market equilibrium between supply and demand. As noted by Lapteva S., Mottaeva A., Kopytina Yu. and Kochetkov I., in Austria, "electricity trading is most often carried out through a system of futures for deliveries in the coming years, when the volumes of energy production from various sources, especially alternative ones, are unknown in advance." The use of such a model presupposes a strong differentiation between tariffs [5] for individuals and legal entities. Moreover, the latter receive electricity at higher prices, which leads to the search for and use of alternative energy sources. In addition, tariff regulation issues were studied by: Ahmed T., Sipra H., Zahir M., Ahmad A., & Ahmed M. [6]; Amador M., Bagwell K. [7]; Baron D., Myerson R. [8]; Whittington D. & Nauges C. [9], Xenarios S., Edwards EY & Buurman J. [10].

It should be noted that Russian researchers are primarily focused on addressing issues such as the impact of heat supply models on tariffs, finding methods for financing heat supply network modernization, and identifying various aspects of the alternative boiler system approach. The authors view the alternative boiler system as an effective solution to existing heat supply problems. Particular attention is paid to calculating and comparing the economic impact of various heat supply pricing methods.

Tariff setting in the electricity industry has received considerable attention in the scientific literature. This is due to the fact that tariff-setting models are quite complex mechanisms that require precise tuning and ensuring a balance between the interests of market participants.

Despite the importance of separating such public administration functions as control (supervision) and regulation in the area of tariff regulation, this aspect has received insufficient attention in modern academic literature. In our opinion, to improve the effectiveness of the tariff regulation system, it is necessary to separate control (supervision) and regulation functions, eliminating their concentration within a single entity, such as the FAS Russia. This approach will ensure the objectivity and transparency of the tariff-setting process and balance the interests of all market participants in the core industries.

MATERIALS AND METHODS

Based on the composition of the entities regulating and operating in the commodity markets of basic industries, the economic security of the entities in the commodity markets of basic industries, in our opinion, should be understood as such a state of commodity markets, the regional economy and personal finances that ensures the sustainable development of a group of interconnected entities participating

directly or indirectly in the process of creating, supporting and developing a competitive environment to a level that guarantees a balance of interests between them.

The architectonics of economic security of subjects developed by uscommodity markets of basic industries(Figure 1) Based on the conceptual model of antitrust regulation proposed in K.A. Kudryavtsev's dissertation, it represents a combination of three components: state economic security, consumer economic security, and economic security of business entities. This study will examine threats to state economic security in more detail.

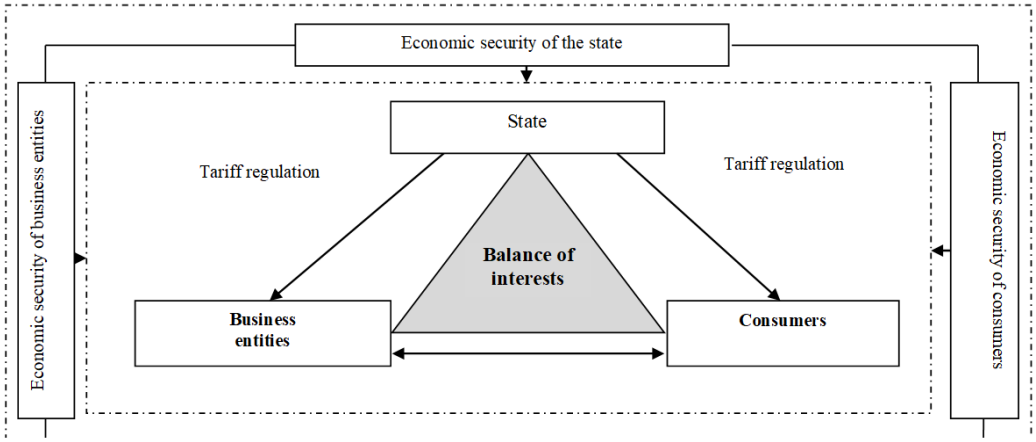

Fig. 1. Economic security of the main participants in the commodity markets of basic industries

The duality of the state's economic security category in commodity markets in key industries primarily consists of effectively implementing two functions: tariff regulation and control (supervision). Tariff regulation implemented in the constituent entities of the Russian Federation directly impacts the region's economic security. The results of control (supervision) exercised by the state, represented by the FAS mega-regulator, allow us to identify the risks posed by service providers and the risks posed by the FAS's operations, whose orders are subsequently challenged in court. These economic security risks for constituent entities of the Russian Federation will be identified using the legislation of the regions of the Volga Federal District as an example, while the risks posed by the FAS and service providers in commodity markets will be analyzed based on FAS orders and established judicial practice.

RESULTS AND DISCUSSION

The need to improve the legal framework for natural monopolies and to develop effective tariff regulation mechanisms is enshrined in the "Strategy for the Development of Competition and Antimonopoly Regulation in the Russian Federation through 2030." Specific provisions on tariff regulation are also contained in other strategic planning documents. According to the "Strategy for Spatial Development of the Russian Federation through 2030 with a Forecast to 2036," one of the principles for the development of the housing and utilities sector is "ensuring a balanced tariff regulation model in the housing and utilities sector." The "Strategy for the Development of the Construction Industry and Housing and Utilities of the Russian Federation through 2030 with a Forecast to 2035" notes "a wide range of prices and tariffs, which is due in some cases to regional specifics of the formation of energy and utility systems, in others to strict regulation, and in still others to the low efficiency of housing and utilities organizations." An analysis of regional legislation containing specific tariff regulation provisions revealed that these regulations primarily relate to regional socioeconomic development strategies. A systematization of the provisions of these documents, using the Volga Federal District (hereinafter referred to as the VFD) as an example, is provided in Table 1.

Table 1. The main provisions of the regulatory legal acts on strategic planning of the subjects of the Volga Federal District, containing issues of tariff regulation

Subject of the Volga Federal District	Regulatory legal act	Basic provisions in the field of tariff regulation
Kirov Oblast	Order of the Government of the Kirov Region dated November 25, 2024 No. 301 "On approval of the	To achieve Objective 5, "Fair" Tariffs for Energy and Housing and Utilities, it is planned to implement the "Creating an

	Strategy for the socio-economic development of the Kirov Region for the period up to 2036"	Effective Tariff Regulation System" program. This program will enhance the efficiency of tariff setting for regulated activities and the monitoring (supervision) of tariff formation and application. Effective tariff setting is defined as a justified tariff increase with a sufficient investment component to ensure the implementation of measures to improve the efficiency of resource provision to consumers (individuals, organizations, and individual entrepreneurs). At the same time, increases in utility bills for individuals must not be allowed beyond the established maximum indices for changes in utility bills.
Nizhny Novgorod Oblast	Resolution of the Government of the Nizhny Novgorod Region dated December 21, 2018 No. 889 "On approval of the Strategy for the socio-economic development of the Nizhny Novgorod Region until 2035" (with amendments and additions)	High electricity rates are observed. A project to optimize tariff payments for housing and communal services is being implemented.
Orenburg region	Resolution of the Government of the Orenburg Region dated August 20, 2010 No. 551-pp "On the strategy for the socio-economic development of the Orenburg Region until 2030" (with amendments and additions)	To reduce losses of electrical and thermal energy in networks, it is necessary to implement highly efficient equipment, which is possible with the implementation of an effective tariff policy.
Penza Oblast	Law of the Penza Region of May 15, 2019 No. 3323-ZPO "On the Strategy for the Socio-Economic Development of the Penza Region for the Period up to 2035" (with amendments and additions)	The main problems of industrial development in the region include the growth of tariffs for natural monopolies.
Perm Krai	Law of Perm Krai dated July 12, 2024 No. 329-PK "On the Strategy for the Socioeconomic Development of Perm Krai until 2035"	The need for energy transition and climate regulation is noted.
Republic of Bashkortostan	Resolution of the Government of the Republic of Bashkortostan of December 20, 2018 No. 624 "On the Strategy for the Socio-Economic Development of the Republic of Bashkortostan for the Period up to 2030" (with amendments and additions)	The region operates the program "State regulation of tariffs (prices) in the Republic of Bashkortostan," which includes the subprogram "ensuring balance and long-term stability of regulated markets for goods and services in the Republic of Bashkortostan."
Republic of Mari El	Resolution of the Government of the Republic of Mari El dated January 17, 2018 No. 12 "On approval of the Strategy for the	Increasing tariffs for natural monopolies is one of the threats to regional development in general and small and medium-sized businesses in particular.

	socio-economic development of the Republic of Mari El for the period up to 2030" (with amendments and additions)	
Republic of Mordovia	Law of the Republic of Mordovia of October 1, 2008 No. 94-Z "On the Strategy for the Socio-Economic Development of the Republic of Mordovia until 2025" (with amendments and additions)	High electricity tariffs are noted.
Republic of Tatarstan	Order of the State Tariff Committee of the Republic of Tatarstan dated June 2, 2022 No. Pr-464/2022 "On approval of the Strategy for the development of tariff regulation in the Republic of Tatarstan for 2023-2025"	Indicators for the development of electric power, heat supply, water supply and sanitation, and other areas have been established.
Samara Oblast	Draft strategy for the socio-economic development of the Samara region for the period up to 2036 (Samara - 450)"	It is aligned with national development goals. Key objectives include increasing energy and resource efficiency in the housing and utilities sector.
	Resolution of the Government of the Samara Region dated July 12, 2017 No. 441 "On the Strategy for the Socio-Economic Development of the Samara Region for the Period up to 2030" (with amendments and additions)	The strategic development of the electric power industry consists of ensuring "competitive relations in retail electricity markets, ensuring the economic justification of prices and tariffs for relevant goods and services."
Saratov Oblast	Resolution of the Government of the Saratov Region of June 30, 2016 No. 321-P "On approval of the Strategy for the socio-economic development of the Saratov Region until 2030 and for the future until 2036" (with amendments and additions)	Does not address tariff regulation issues. A threat to the energy sector is highlighted: the limited service life of the existing power units at the Balakovo Nuclear Power Plant.
Udmurt Republic	Law of the Udmurt Republic of October 9, 2009 No. 40-RZ "On the Strategy for the Socio-Economic Development of the Udmurt Republic for the Period up to 2025" (with amendments and additions)	The Udmurt Republic suffers from energy shortages. Improving the reliability of power supply and meeting increased demand will primarily require the reconstruction of existing networks and the construction of new ones with a capacity of 500-35 kV.
Ulyanovsk Oblast	Resolution of the Government of the Ulyanovsk Region dated July 13, 2015 No. 16/319-P "On approval of the Strategy for the socio-economic development of the Ulyanovsk Region until 2030" (with amendments and additions)	The growth of private equity programs will lead to improved service quality. Long-term tariffs are needed.
Chuvash Republic	Resolution of the Cabinet of Ministers of the Chuvash Republic dated April 26, 2023 No. 275 "On approval of the Strategy for the Development of the Electric Power	Scenario conditions for the development priorities of the region's electric power industry have been determined.

	Industry of the Chuvash Republic for the period up to 2035"	

An analysis of the basic strategic planning documents for the purpose of ensuring the economic security of the region in terms of tariff regulation provisions allowed us to identify the following risks and threats to the economic security of the Volga Federal District regions in the area of tariff regulation:

Rising tariffs are a significant threat to the economic security of the region and small and medium-sized businesses.

On the one hand, increasing tariffs for natural monopolies leads to increased costs for small and medium-sized businesses, which increases the cost of their products. If tariffs are lower in nearby regions and similar products are produced there, then products in regions with high tariffs become less competitive, all other things being equal.

It should be noted that the strategy for developing a tariff regulation system at the level of the constituent entities of the Russian Federation has been adopted only in the Republic of Tatarstan.

The high level of deterioration of the infrastructure requires the search for effective methods to overcome it.

We believe that attracting investment to the industry is possible, including through investment tax incentives. Furthermore, positive public-private partnership practices should be expanded: in Kirov (Concessionaire – JSC Kirovskaya Teplosnabzhayushchaya Kompaniya); Voronezh (PJSC Quadra – Generating Company); Dzerzhinsk (PJSC T Plus), and elsewhere.

The threat of ineffective regulation

It is necessary to create a separate strategy for the development of the tariff regulation system at the level of the constituent entities of the Russian Federation, taking into account regional characteristics, as well as an implementation plan that will contain specific actions to achieve the indicators.

Lack of a modern strategy for the socio-economic development of the district

It should be noted that, unlike other districts (the Siberian Federal District, the North Caucasus Federal District, and the Far Eastern Federal District), the Volga Federal District (as well as the Central Federal District, the Southern Federal District, the Ural Federal District, and the Northwestern Federal District) does not have a strategy for socio-economic development until 2035; its previous version was approved until 2020.

Threat to the economic security of the FAS in connection with concentration of powers within one mega regulator

For the analysis, a sample of cases was selected on the invalidation of FAS orders in the constituent entities of the Russian Federation, based on unscheduled documentary audits conducted, for which court decisions were made from January 1, 2023 to July 1, 2025, as well as FAS orders for 2024 in the field of heat supply and electricity transmission.

Systematization of the investigated violations revealed the following risks: violation of pricing principles in the heat supply sector and violation of pricing principles in the electricity transmission sector. Let's examine these in more detail.

Regulation of prices (tariffs) in the heat supply sector is carried out in accordance with the rules approved by the resolution. Government of the Russian Federation No. 1075 of October 22, 2012. This document, among other things, requires that the expert opinion must include an analysis of the economic justification of costs and benefits; no template for such an opinion has been approved. An analysis of arbitration practice shows that the majority of cases in which the FAS is the defendant in the heat supply sector primarily relate to the justification of expenses and the exclusion of a portion of them from gross revenue, for example, Expenses on purchased heat energy; expenses on payments under loan and credit agreements, including interest thereon; expenses under the cost items "depreciation charges" and "standard profit", which are the source of financing the investment program; incorrect accounting of expenses on capital investments; expenses under the cost item "Reserve for doubtful debts" based on the actual written-off of consumer receivables; cost savings from reduced fuel consumption.

The FAS classifies the following as unjustified expenses in the field of electricity transmission: interest on loans; Costs of using unified information settlement centers; depreciation charges, which are the source of the investment program; part of the costs of forming a reserve for doubtful debts; costs of "procurement services", "supply services", "t-services", "services for checking the economic security of transactions".

Due to the exclusion of economically unjustified expenses (according to the mega-regulator) from the required gross revenue, amounting to over 23 billion rubles based on the 2023 audits and over 29 billion

rubles based on the 2024 audits, the FAS Russia itself is becoming a threat to economic security in commodity markets in core industries. Therefore, in our opinion, the following measures must be taken:

1. Develop clear criteria for the justification of expenses - establish clear rules for classifying certain expense items as justified or unjustified.

2. Strengthen communication and explanation of FAS decisions – expand the information campaign aimed at providing detailed explanations of decisions made. Detailed explanations will increase trust in the FAS's actions and reduce the number of litigations.

It should be noted that the downside of implementing the regulations as a result of the monitoring activities was a reduction in heat supply tariffs in the Arkhangelsk Region by 34.2%, in the Republic of Ingushetia by 23%, and in the Republic of Dagestan by 19%, as unjustified funds in the amount of more than 3 billion rubles were excluded from gross revenue.

Based on the conducted research, we have identified features that must be taken into account when improving tariff regulation in the Volga Federal District regions:

High tariffs in the electricity sector do not facilitate the deployment of mining farms

Since January 1, 2025, "mining farms," a registry maintained by the Federal Tax Service, have been legalized. As of June 2025, "130 data centers, 1,000 companies and individual entrepreneurs, and 2,000 individuals with small mining operations" have been registered. These facts prompt regional government authorities to consider differentiated tariff regulation of electricity consumption. This is due to the fact that industrial-scale mining poses the risk of electricity shortages due to the increased consumption of energy-intensive computing. In our opinion, the following economic security threats can be identified for low-tariff regions: a threat to uninterrupted power supply, the threat of growth of the shadow economy (due to miners), and the threat of inefficient budget spending (forced subsidization of miners). For the Volga Federal District regions, the main threat is the unaccounted electricity consumption of unregistered miners. For example, a criminal case involving unmetered electricity consumption totaling over 2 million rubles on the premises of the Kolos gardening non-profit partnership in Nizhny Novgorod. The issue of differentiated electricity rates for private individual miners, in our opinion, is debatable and requires further research.

Possibility of using the "alternative" boiler method in the heat supply sector

Currently, the "alternative" boiler system is used in 46 municipalities in 21 constituent entities of the Russian Federation, accounting for 10% of the country's total population. In the Volga Federal District, the method is used in Samara, Orenburg, Novokuibyshevsk, Penza, Cheboksary, Novocheboksarsk, Tolyatti, Saransk, Perm, Tchaikovsky, and Izhevsk. It allows for the modernization of heating networks, increasing their reliability and efficiency. Despite the fact that this method was introduced in 2012 and a gradual transition is enshrined in the Energy Strategy of the Russian Federation through 2035, regions have not actively implemented it, although they are considering it (Irkutsk Oblast). However, not all regions share this opinion. For example, in the Lipetsk region, the introduction of an alternative boiler system seems impractical, as its implementation would lead to an increase in tariffs, while the current pricing system allows for one of the lowest tariffs in the Central Federal District.

Finding a balance between tariff growth and tariff limitation

The desire to achieve an optimal balance between increasing and moderating tariffs helps ensure the affordability of services for consumers, the financial stability of suppliers in commodity markets in basic industries, the efficient use of budgetary funds, and environmental improvements in the region.

CONCLUSION

Based on the results of the study, the following conclusions can be drawn. The analysis identified key risks and threats to regional economic security related to tariff regulation in key industries, such as heat supply and electricity transmission. Tariff increases pose a serious threat to the economic security of the region and small and medium-sized enterprises. Increasing tariffs for natural monopolies leads to higher prices for local producers, making them less competitive compared to products from neighboring regions with lower tariffs.

Furthermore, the high deterioration of infrastructure creates additional challenges, requiring significant investment for restoration and modernization. One solution to this problem could be attracting private investors through tax incentives and the development of public-private partnership models.

It has also been established that insufficient attention is being paid to creating an effective tariff regulation system at the regional level. Only a few regions, such as the Republic of Tatarstan, have their own tariff regulation development strategy. Other regions lack regulations and plans aimed at mitigating the risk of ineffective

regulation.

A serious threat associated with the concentration of powers within the Federal Antimonopoly Service has been identified in the form of a lack of a template. The expert opinion of regional regulators, which must contain an analysis of the economic feasibility of the resource supply organization's costs and profits, leads to the adoption of economically unjustified tariffs for monopolists' services, followed by the issuance of unfounded orders by the mega-regulator, which are challenged in court by the regions. Thus, the FAS Russia itself becomes a threat to economic security at both the national and regional levels, as well as individual natural monopolies.

Conflict of interest

The authors declare that there is no known conflict of interest associated with this publication.

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