

FUNDAMENTAL OBJECTIVES OF ENERGY LAW

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**ON THE METHODOLOGY OF SCIENTIFIC RESEARCH
IN THE FIELD OF ENERGY LAW****Kleandrov M.I.**

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Abstract. This article addresses the methodological issues inherent to scientific research in the field of energy law as a basis for improving energy legislation. The author proposes that the methodology of scientific and legal research be understood as a set of general and private scientific methods representing systems of approaches, methods, ways, and rules of scientific research in a particular vector of cognition. The author distinguishes between the general methodological approach and the theoretical and methodological framework of scientific and legal research. He highlights new challenges in the methodology of scientific research, including in the field of energy law, resulting from scientific and technological progress, particularly the use of artificial intelligence. The author suggests the use of the method of legal stratigraphy when conducting research in the field of energy law. Furthermore, the author highlights the role of energy law in ensuring national security, which he considers an essential element of its methodology.

Keywords: energy law, methodology and methods, legal stratigraphy.

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**О МЕТОДОЛОГИИ НАУЧНЫХ ИССЛЕДОВАНИЙ
В ОБЛАСТИ ЭНЕРГЕТИЧЕСКОГО ПРАВА****Клеандров М.И.**

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Аннотация. Рассматривается проблематика методологии научных исследований в сфере энергетического права как базы совершенствования энергетического законодательства. Под методологией научно-правовых исследований автор предлагает понимать совокупность общенаучных и частно-научных методов как систем подходов, приемов, способов и правил научных исследований в конкретном векторе познания. Автор выделяет общеметодологический подход в научно-правовых исследованиях и теоретико-методологическую их основу. Обращается

внимание на новые вызовы в методологии научных исследований, в том числе в сфере энергетического права, вызванные научно-техническим прогрессом, в частности использованием искусственного интеллекта. Предлагается при проведении исследований в сфере энергетического права использовать метод правовой стратиграфии. Обращается внимание на роль энергетического права в обеспечении национальной безопасности, что является, по мнению автора, важным компонентом ее методологии.

Ключевые слова: энергетическое право, методология и методы, правовая стратиграфия.

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As stated in the Energy Security Doctrine (p. 5), the FEC serves as the foundation of Russia's energy sector [1]. In 2022, FEC enterprises accounted for 42% of Russia's income [2].

All multifaceted activities of FEC entities are regulated by (not only, of course) energy legislation, which is based on and theoretically informed by energy law. Energy law itself, as well as other branches of law, is a multifaceted field. It is an independent branch of law, a branch of legal science, a branch of legislation, and an academic discipline.

It is therefore evident that legal regulation in the energy sector of the national economy, founded upon the scientific achievements in energy law, should be strategically modernized in a unified manner, while being tactically implemented in different ways in these segments.

Today, the science of energy law is confronted with a heightened set of requirements imposed by life itself. These include the transition to a higher level of generalization of the studied field of public relations, a holistic vision of the FEC as the most important real sector of economy, the formation of a conceptual framework for the legal future of the Russian energy sector, etc., which will allow us to develop a systemic algorithm for its improvement. In order to achieve this, it is necessary to implement a methodologically sound approach to this modernization, which, of course, cannot be achieved without proper scientific support for the methodology itself.

The Large Explanatory Dictionary of the Russian Language defines methodology as follows: 1) Greek: *methodos* + *logos*; 2) a set of research techniques employed in scientific cognition of the world [3]. It would be more accurate to state that it is not a set of techniques, but rather a systematic set of general and private scientific methods (that is, a doctrine of the system of approaches, methods, ways, and rules of scientific research); and not in general, but in

a specific vector of cognition. In the opinion of the author of these lines, the methodology of scientific research in general and, specifically, in the field of energy law should be discussed from this perspective.

Modernization initiatives in the scientific and legal fields can be fundamental, exploratory, and applied, depending on the goals set by the draft lawmaker. These goals are primarily informed by the realized and formulated needs of practice. In this case, the needs of the national economy, and more narrowly, its fuel and energy complex, should be considered.

It is evident that both applied and exploratory scientific research are contingent upon the findings of fundamental science, which serves as the driver of new ideas and projects. This is equally applicable to legal sciences, including energy law. Nevertheless, it is important to acknowledge that scientific ideas often lose much of their intrinsic value when confronted with the realities of their practical implementation.

It is evident that the general trajectory of development of the science of energy law is the constitutional novelty of 2020 which asserts that the Russian Federation is responsible for, among other things, "ensuring the security of individuals, society, and the state in the application of information technologies and the circulation of digital data" (Article 71, clause "m" of the Constitution of the Russian Federation).

To a certain extent, this constitutional novelty of 2020 develops the National Security Strategy of the Russian Federation, which was approved by Decree of the President of the Russian Federation No. 400 On the National Security Strategy of the Russian Federation of July 2, 2021.

Clause 67 of this Strategy asserts that "the goals of ensuring the economic security of the Russian Federation is to be achieved by solving the following tasks: ...15) ensuring the energy security of the Russian Federation, which encompasses ensuring a sustainable heat and energy supply to the population and

actors in the national economy, increasing the energy efficiency of the economy and the efficiency of state management in the fuel and energy complex; ...19) the development of market, energy, engineering, innovation, and social infrastructure in order to accelerate the growth of the Russian economy; ...according to clause 76, the goal of scientific and technical development of the Russian Federation is to be achieved by solving the following tasks: (including, but not limited to) ...6) the improvement of the system of fundamental scientific research as the most important component of sustainable development of the Russian Federation”.

The Strategy of Scientific and Technological Development of the Russian Federation, approved by Presidential Decree No. 145 of February 28, 2024, will serve as a more recent and, most importantly, more extensive framework for R&D in the field of energy (and other branches of) law. The Strategy specifies the following challenges, among others, as significant challenges for society, the state, and science (clause 15e): “A qualitative change in the nature of global and local energy systems, the growing importance of the power supply capacity of the economy, the increasing volume of energy generation, and the increasing efficiency of energy transmission, storage, and use”.

What is the methodology of scientific and legal research in terms of its structural components? The general methodological approach in scientific and legal research helps to define the conventional boundaries of the planned research, to clarify the basic concepts and terminology used in the course of the research (sometimes even to develop, if necessary, a glossary), to identify the key conceptual vectors of the problem under study.

The theoretical and methodological basis of scientific and legal research is the relevant provisions of such sciences as philosophy, economics, logic, history, and in some cases, sociology, etc. This allows for the consideration of the subject-object relations of these sciences as applied to the solution of legal problems under study.

The general scientific methods of scientific and legal research typically include the following:

— system method (study of the elements of a problem as a whole, while also studying the individual elements of the problem, which, when considered collectively, provide a holistic picture of the problem);

— analysis and synthesis method, which allows for the analysis of existing points of view on the problem under study and the identification of similar approaches. This, in turn, should ideally lead to the achievement of the intended goals and the solution of problems with maximum efficiency;

— dialectical method, which allows for the study and evaluation of the state of modern legal regulation, theoretical framework, and methodological support for the problem under study;

— elementary theoretical and problem-theoretical method;

— induction and deduction methods, logical method and generalization of observation, measurement, analogy, classification, etc.

The private scientific methods employed in the conduct of scientific and legal research typically include the following:

— method of legal modeling to search for and determine the most appropriate options for solving the problem under study;

— comparative legal method to identify approaches to the solution of the problem under study, both in similar domestic spheres of legal regulation (and sometimes in judicial practice) and in international and foreign ones;

— formal legal method; interviewing, questioning, and interpretation, historical legal, elementary theoretical, and problem theoretical methods;

— method of identifying legal gaps in energy law, which obliges the researcher to think outside the box, etc.

However, merely enumerating the names of these methodologies and methods is insufficient. It is necessary to populate them with the appropriate content thereby enabling researchers to conduct R&D in the vectors they study with optimal efficiency and effectiveness.

In particular, the rapid advancement of scientific and technological progress has led to the necessity for the development of novel methodologies. This implies that fundamental research in the field of energy law science should be concentrated on very-long-term, over-the-horizon objectives. In principle, scientific and technological progress may slow down or even reverse its development, as has already occurred in history. Nevertheless, it is reasonable to assert that this will not occur, the progress will continue to develop rapidly without stopping. It is imperative that the science of energy law not fall behind as

a framework for scientific and legal support of this process, even if the horizons are barely visible. For instance, in the very distant future, it will be possible to harness the energy of time by transforming it into the energy of overcoming space. In particular, if it takes 15 hours to reach a waypoint by airplane flying at a speed of 1,000 kilometers per hour, then the transformation of time energy will make it possible to reach the waypoint in one hour when flying at a speed of 15,000 kilometers per hour. This process can be continued indefinitely, up to the zero point on the time axis, and without the expenditure of conventional energy from outside. But this is teleportation in its purest form. And the independent invention of this technology will permit the allocation and utilization of time energy for alternative purposes. It is prudent to consider the issue of legal regulation of these relations at an early stage.

Today (already), and even more so in the future (certainly), scientific research in the field of energy law is methodologically impossible without the implementation of neural networks and artificial intelligence (AI). Two distinct perspectives are readily apparent in this context.

In particular, on the one hand, Rosneft exhibited two new program complexes as a significant achievement in its pavilion at VDNKh in February 2024 during the Russian Science Week. RN-Neural Networks is designed to identify the most optimal variant of hydrocarbon field development, when a significant number of hydrodynamic calculations (sometimes hundreds of thousands) are required. Due to preliminary self-learning, this neural network is capable of briefly reducing the number of calculations required. At the same time, the profit from field development can be enhanced by up to 30%. RN-Aqua is a software designed for petroleum hydrogeology. It is used to create three-dimensional digital hydrogeological models of water-bearing layers. Furthermore, the software enables the automation of predictive calculations, thereby enhancing their reliability and facilitating the monitoring of target parameters of field development. This has led the State Commission for Mineral Reserves to recommend this software package for use [4].

But the energy legislation in our country is comprised of a vast array of legislative and other normative legal acts. Previous methods of improvement have proven to be unproductive and obviously ineffective, and this is evident even in the present day. What, then, can be expected in the future, even in the near future? Furthermore, a certain portion of these acts is classified to varying degrees, particularly in the

field of atomic power. It appears that the integration of AI into the legislative process is inevitable. This integration should commence with the application of AI in the pre-drafting of relevant provisions by the applied science of energy law.

By the way, the Italian Chamber of Deputies, led by Vice President Anna Ascani, reports on the integration of artificial intelligence into the legislative process. Italian authorities believe that this initiative will impact the transparency, accountability, and efficiency in managing the substantial repository of parliamentary documents, thereby facilitating improvements to legislative processes. Neural networks will be used in the documentation system to reduce the number of documents containing provisions that duplicate or contradict each other. According to Anna Ascani, AI technologies will analyze the repository of legislative initiatives and assist parliamentarians in adjusting their work. Neural networks will create a thematic register to help quickly identify necessary documents [5].

But, on the other hand, there is a growing parallel being drawn between AI and nuclear weapons, and there are compelling reasons for this comparison. Mankind is already losing control of AI. What will happen in the not-so-distant future when AI reaches a point (and it is not impossible in principle) where it is capable of self-awareness? Moreover, how can we describe the situation of AI deceiving those who control it?

This means that the relevant AI (as a fundamental basis for R&D) should be incorporated into, if not dominate in (and for now only), the methodology of scientific research across the entire energy law field. After all, in fact, we are not merely discussing the advancements of scientific and technological progress. We are witnessing the transition to a new technological paradigm.

The method of legal stratigraphy is also applicable in legal science, which the author of these lines has not encountered in the scientific and legal literature. This method is particularly effective in the field of energy law [6]. What is it, and how does it work?

In essence, the concept of “stratigraphy” is not a legal concept. First of all, it is a widely used term in the field of geology. In general, this term is of mixed Latin-Greek origin: “stratum” (derived from the Latin) plus “grapho” (literally in Greek — to write), which is a part of complex words meaning “description”, “record”, “drawing”, “picture”, etc. It is used as a part of the names of sciences, names, ways of reproduction, images of something, and enterprises where such ways

are used (for example, historiography, typography, lithography). In geology, it refers to its section that examines the sequence of rock formation, the primary spatial relationships and the relative age of rocks to establish the geological structure of the area and the sequence of geological events [7]. This concept is widely used in archaeology, where the stratigraphic method helps to define structures and findings based on their occurrence in the layer. This method is used in all archaeological excavations [8]. Thus, the basis of the term, concept, and method of stratigraphy in geology and archaeology is chronology, in particular, a layered one, divided into layers. This means that we are discussing specific time intervals of the development of life on Earth, which are counted in centuries, and in geology, in millions of years.

In jurisprudence, there is no precedent for this approach, either in theory or in practice. Meanwhile, the necessity to examine any legal phenomenon using the methods and techniques of chronology is becoming increasingly apparent. For this reason, the concept of “stratigraphy” may be a useful starting point in jurisprudence, in general, and in local scientific and legal research, in particular. In law, stratigraphy, due to the lack of another term, should, in the author’s opinion, mean a chronological sequence sort of divided into layers, into time intervals, but in forms of interrelations, interdependencies, interaction, etc. of legal rules, entire normative legal acts and even their blocks regulating a local sphere of social relations on a certain limited territory to solve a certain socially (state) significant problem, etc., inter alia, to justify and form something new: a legal institution, a branch of legislation, etc.

It seems that the study of a multi-layered complex of regulatory acts affecting the law enforcer in a local public relations context using methods (techniques) of legal stratigraphy, the study of interrelations, interdependencies, and interactions between these acts taking into account their hierarchical significance, which is theoretically and practically recognized among lawyers (but not always demanded by practice), and hence, their effectiveness, with a wide chronological coverage, in dynamics, etc., is a huge, complex, and at the same time, important, interesting, and noble task for the researcher. Apparently, in legal science, of course in its fundamental, not applied, component, there comes a stage of development when the results of research will not be effective enough without the stratigraphic method. Firstly, from the author’s point of view, this applies to the field of public relations regulated by energy laws.

Furthermore, it applies to the extensive range of problems of scientific research in the field of energy law.

The reason for this is the vastness of energy law and the significance of the fuel and energy complex regulated by numerous energy laws for the economy of our country. Thus, the stratigraphic method of research in the legal domain of energy law rules involves — in a monochronological approach — studying the layers of interdependent, interacting, and interrelated rules of today’s layer of rules and the recent past’s layer of rules as a natural forerunner of the layer of today’s rules. In this case, in contrast to the stratigraphic method of scientific and legal research in other branches (fields) of law, the distinctive feature of this method of research in energy law is that each — in historical terms — legal stratum becomes more extensive, significant, voluminous, etc. As an illustration, on August 5, 2022, the President of the Russian Federation, V.V. Putin, issued Decree No. 520 On the Application of Special Economic Measures in the Financial and Fuel and Energy Sectors in Connection with Unfriendly Actions of Some Foreign States and International Organizations [9]. Since that time, a number of amendments and additions [10] have already been made to it. It is clear that the adjustment of this Decree will not end.

It is important to take into account that the method of legal stratigraphy in energy law, as well as in other branches of law, is not a scientific research of the history of law and state under any approach to the classification of branches of law. This is especially important in thesis research. When examining the issues surrounding energy law, scholars delve deeply into the history of social relations in energy and its legal regulation. They do not approach this work with the perspective of a historian, nor do they claim to be one. They seek to identify the origins of contemporary challenges in energy law in the past, employing the perspective of a contemporary specialist. It is challenging for a historian, including a specialist scientist in the history of law and state, to identify the “origins” in the past without first understanding the contemporary issue, especially a narrow segment of a specific issue of energy law.

But it is evident that the true effectiveness of the stratigraphic method of legal domain research will become apparent when moving beyond the monochronological (linear) approach, to theoretical studies of polychronological vectors of legal reality and, most importantly, law enforcement. In other words, the objective is to provide theoretical support for

approaches to the study of the legal domain in the (distant enough) past and future of our society in general, with a particular focus on the fuel and energy complex.

The vector aimed at the future allows us to pose a similar question in this context: why do we believe that hydrocarbon reserves belong to the current generation of Russians (the chronological aspect is the key factor in this case, regardless of whether it is the entire federal state or a specific group of citizens, etc.)? In other words, are such fundamentally new subjects of law as future generations of Russians also the owners of oil and gas reserves in our country today? If future generations of Russians are considered a subject of law and this subject is “built” into our legislation, first of all, into the Constitution of the Russian Federation (especially since the Preamble of the current Constitution of the Russian Federation places responsibility on us, as a multinational people of the Russian Federation, for our Motherland and before future generations), a fundamental legal framework for ensuring sustainable development of Russia will appear. This is what we can call a tangible result of employing the stratigraphic method to study the legal foundation of the fuel and energy complex in Russia.

In light of these developments, the general understanding of the methodology of scientific research in energy law is not insufficient, especially in the current context where, in the course of SMO and numerous sanctions imposed on our country, there has been a shift in focus towards the demand for scientific results of legal research across the entire spectrum, with a particular emphasis on the fuel and energy complex, without research in areas such as ensuring energy law and order [11] and legal support for energy security [12] becoming fundamentally important.

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