LEGAL REGULATION OF THE USE OF ARTIFICIAL INTELLIGENCE

DOI: 10.61525/S231243500031369-3 Original Article / Оригинальная статья

LEGAL REGULATION OF ARTIFICIAL INTELLIGENCE AND ROBOTICS IN THE ENERGY INDUSTRY IN THE RUSSIAN FEDERATION: CHALLENGES AND OPPORTUNITIES

Kologermanskaya E.M.

PhD (Law), Legal Counsel at PromHim, LLC
E-mail: ekaterina.kologermanskaya@gmail.com

Abstract. The energy industry is one of the dynamically developing and investment-worthy areas where new technology is being actively introduced. The agenda is focused on digitalization and one of its most important products, artificial intelligence, as a popular and promising set of IT solutions applied in various areas, including the fuel and energy complex (FEC). The main risk of the full AI technology integration in the energy complex, as well as the creation of favorable investment conditions for its further development, is the imperfection of the legal and regulatory framework governing general and industrial aspects. This article analyzes the current state of legal regulation of AI and robotics in the energy industry of the Russian Federation, and also provides some examples of foreign legal experience on the topic under consideration. The jurisdictions of the European Union (with the subsequent implementation of legal norms into the national laws of the member States) and the United Kingdom were chosen as promising examples. It should be noted that in each of the selected states, a whole set of policy documents was adopted that consolidate the goals and objectives of AI development, as well as identify the main threats to the further integration of this technology into different economic realms, including energy. Besides, there are material differences in legislative approaches. The combination of the experience studied makes it possible to improve national laws on AI and robotics integration in the Russian FEC. It seems necessary to perform unification at the level of the federal law regulating the general provisions on AI. Besides, it is required to update special energy industry laws, including through the adoption of new energy security regulations at the substatutory level.

Keywords: energy law, fuel and energy complex, energy AI technology, energy security, robotics.

For citation: Kologermanskaya E.M. Legal Regulation of Artificial Intelligence and Robotics in the Energy Industry in the Russian Federation: Challenges and Opportunities. Energy Law Forum, 2024, iss. 2, pp. 29–38. DOI: 10.61525/S231243500031369-3

ПРАВОВОЕ РЕГУЛИРОВАНИЕ ТЕХНОЛОГИЙ ИСКУССТВЕННОГО ИНТЕЛЛЕКТА И РОБОТОТЕХНИКИ В СФЕРЕ ЭНЕРГЕТИКИ В РОССИЙСКОЙ ФЕДЕРАЦИИ: ПРОБЛЕМЫ И ПЕРСПЕКТИВЫ

Кологерманская Е.М.

Кандидат юридических наук, юрисконсульт ООО "ПромХим"
E-mail: ekaterina.kologermanskaya@gmail.com

Аннотация. Энергетическая отрасль экономики — одна из динамично развивающихся и инвестиционно выгодных сферы, куда активно внедряются новые технологии. На повестке дня стоит цифровизация и один из ее важнейших продуктов — искусственный интеллект (далее — ИИ) как популярный и перспективный комплекс технологических решений, применяемых в различных сферах, в том числе и ТЭК. В качестве основного риска полноценного внедрения технологий ИИ в энергетический комплекс, а также создания инвестиционно выгодных условий для их дальнейшего развития отмечают несовершенство нормативно-правовой базы, регулирующей общие и отраслевые аспекты. В представленной статье анализируется современное состояние правового регулирования технологий ИИ и робототехники в энергетической сфере Российской Федерации, а также приведены некоторые примеры зарубежного правового опыта по рассматриваемой теме. В качестве перспективных примеров были выбраны юрисдикции Европейского союза (с последующим внедрением правовых норм в национальное законодательство государств-членов) и Великобритании. Следует отметить, что в каждом из выбранных государств был принят целый комплекс программных документов, закрепляющих цели и задачи развития ИИ, а также определяющих основные угрозы дальнейшего внедрения данных технологий в различные сферы экономики, а том числе энергетическую. В то же время имеют место и существенные различия в законодательных подходах. Совокупность изученного опыта позволяет совершенствовать национальное законодательство в сфере внедрения технологий ИИ и робототехники в ТЭК РФ. Представляется необходимым проведение унификации на уровне федерального закона, регулирующего общие положения ИИ. Кроме того, требуется актуализация специального законодательства в области энергетики, в том числе путем принятия новых нормативно-правовых актов на уровне подзаконного регулирования, обеспечивающих энергетическую безопасность.

Ключевые слова: энергетическое право, топливно-энергетический комплекс, энергетическое технологии искусственного интеллекта, энергетическая безопасность, робототехника.

Для цитирования: Кологерманская Е.М. Правовое регулирование технологий искусственного интеллекта и робототехники в сфере энергетики в Российской Федерации: проблемы и перспективы // Правовой энергетический форум. 2024. № 2. С. 29–38. DOI: 10.61525/S231243500031369-3

INTRODUCTION

Energy industry is one of the leading industries, where the latest technologies are being actively integrated. Its innovativeness is justified both by the FEC complex nature, the consolidation of different industries, and by the rapid development of science and technology. Moreover, the development of the energy industry is influenced by current trends, for example, the integration of ideas for hydrogen and low-carbon energy, the development of green approaches, the renewable energy transition, etc.

Thus, among the numerous processes of Industry 4.0, digitalization and one of its most important products, artificial intelligence (hereinafter the "artificial intelligence", "AI") are on the agenda, as a popular and promising set of IT solutions

applied in different spheres of life and activities of the state and society.

The focus of the scientific and practical community is now on the possibility of integrating AI technology into the FEC. For the Russian Federation, this area is also of priority and investment-worthy, which is confirmed by statistical studies [1]:

1) in terms of the number of generative AI models, the Russian Federation ranks 4th in the world, and in terms of the total power of supercomputers, it is among the top 10 states;

2) by the end of 2022, the Russian AI market size exceeded ₽650 billion;

3) as of 2021, machine learning methods are most often applied in the electricity industry, at the level of 11%.

The main risk of the full AI technology integration in the FEC, as well as the creation of favorable investment conditions for its further development, is the imperfection of the legal and regulatory framework governing general and industrial aspects.

To this day, there are a large number of examples of the AI application by large energy companies. For example, ROSSETI Group applies AI integration approaches to control over the correct functioning of digital electrical grid protection and automation systems [2]. Moreover, AI-based robotic consultants provide customer service in the Unified Settlement and Information Center of RusHydro Group [3].

Thus, given the speed of the integration of new technology, there is a lag of law. There are areas that are not legally regulated, and the principle of timely lawmaking is not implemented. There is a risk that the legal and regulatory framework will not be flexible enough or will be otherwise unsuitable for realizing all the advantages of new technologies [4].

Indeed, AI technology is quite a promising method for solving objectives of remote control, improving energy efficiency, monitoring and controlling the state of energy resources and energy facilities, as well as optimizing the renewable energy resource distribution.

Despite the significant advantages of using AI in the energy industry, significant risks cannot be ignored in ensuring the principles of security, stability of energy supply and a balance between private and public interests.

As V.V. Romanova rightly notes, in order to solve the strategic objectives of the energy industry development, it is required to develop a legal framework whereby digital technology will be applied when accounting for extracted, produced, delivered, transferred, transported, stored energy resources, the functioning of energy systems and facilities, the activities and interaction of energy market participants, in contractual regulation and when considering disputes will be carried out. Besides, it is emphasized that it is advisable to conduct fundamental research on the challenges of legal regulation related to the application of digital technology in order to develop scientific provisions whereby a legal regulation system for the digital technology application in the energy industry can be developed and can function [5].

Moreover, it should be noted that in relation to the application of AI technology in the Russian FEC, the following areas can be distinguished [6]:

1) industrial robotics, as well as the use of autonomous complexes, including the operation of energy facilities where human access is limited or absent;

2) work with big data is the most comprehensive aspect (from data monitoring to accelerating the process of making right decisions and implementing automated control);

3) information security, including the provision of state secrets, trade secrets and other types of information.

These areas are rightly an independent subject of scientific research by Russian and foreign scientists and practitioners [7]. In this regard, this study is mainly devoted to the first area.

Consequently, this article analyzes the current state of legal regulation of AI and robotics in the energy industry of the Russian Federation, and also provides some examples of foreign legal experience on the topic under consideration.

CURRENT STATUS OF LEGAL REGULATION OF AI AND ROBOTICS IN THE ENERGY INDUSTRY IN THE RUSSIAN FEDERATION

To this day, the level of legal regulation of these public relations is at the nascent stage. When

analyzing the topic under consideration, we should pay attention to a number of strategic planning documents.

1. The National AI Development Strategy for the period until 2030 [8] is the main instrument for state and legal regulation of the area under consideration.

According to Clause 5(a), AI is understood as a set of IT solutions that allow simulating human cognitive functions (including searching for solutions without a predetermined algorithm) and obtaining results comparable to or superior to the results of human intellectual activity when performing specific tasks. The set of IT solutions includes information and communication infrastructure, software (including those that apply machine learning methods), processes and services for data processing and finding solutions.

The above definition is basic and legitimate, and is used in other regulations related to the social relations being studied.

In accordance with Clause 51(7)(f), the FEC acts as one of the industries and a social sector, where the AI technology integration is stimulated by creating pilot zones for testing and demonstrating AI developments.

Besides, one of the objectives of the AI development in the Russian Federation is "the creation of a comprehensive legal and regulatory framework for public relations related to the AI technology development and application, ensuring the safe application of such technology" (Clause 24(g)).

2. The Energy Security Doctrine [9] is a strategic planning document in the maintenance of the national security of the Russian Federation, which describes official views on the maintenance of energy security.

Thus, among the cross-border challenges to energy security, the Doctrine indicates "the development and dissemination of emerging technologies, including digital and intellectual ones".

It is noted that there is a need for balanced development of local distributed energy sources integrated into the Unified Energy System of Russia, and the formation of local intelligent energy systems involving such sources.

Such development is possible only through the creation of a clear legal and regulatory framework that sets out the basic requirements for the AI technology technical characteristics and performance.

3. The Digital Economy of the Russian Federation national program [10], among the main objectives of which is the transformation of priority industries and social realm, including healthcare, education, industry, agriculture, construction, municipal facilities, transport and energy infrastructure, financial services, through the integration of digital technologies and platform solutions.

With regard to the integration of AI and robotics, the program defines the following:

— the need to develop information security standards in relation to systems implementing AI technology (Clause 1.26);

— analysis of information security threats in systems using AI technology according to existing standards; development of AI pilot projects (Clause 1.29).

4. The Concept for the Regulation of AI and Robotics until 2024 [11], the objectives of which are as follows:

— identification of the main approaches to the transformation of the regulatory system to ensure the possibility of creating and applying such technologies in different economic realms while respecting the rights of citizens and ensuring the security of an individual, society and the state;

— creation of prerequisites for the formation of the foundations for legal regulation of new social relations emerging in connection with the development and application of AI and robotics technologies and Ai- and robotics-based systems, as well as identifying legal barriers that impede the development and application of these systems.

As noted in the Concept, currently there is no special legislative regulation in the Russian Federation that takes into account the specifics of the application of AI and robotics technologies.

It is believed that the use of experimental legal frameworks will be in demand, including for the AI system and robotics of the FEC. Thus, energy industry is a realm where a mechanism for simplified introduction of products using the technologies under consideration can be used. Additionally, AI and robotics technologies help significantly improve the efficiency of enterprises in mechanical engineering, metallurgy, mining, oil and gas sector, chemical industry, and other industries.

Besides, the Concept establishes other industry-wide objectives of regulating the application of AI and robotics technologies, including those related to the energy industry, e.g., legal liability in the case of the application of AI and robotics systems, the development of insurance institutions, maintenance of security, etc.

5. The Energy Strategy of the Russian Federation for the period until 2035 [12], which sets benchmarks and objectives to promote the socio-economic development of the country, as well as strengthen and preserve the position of the Russian Federation in the global energy industry.

The digital transformation and intellectualization in the FEC is one of the components for the modernization breakthrough to a more efficient, flexible and sustainable energy industry, capable of adequately responding to challenges and threats in its area and overcoming existing difficulties. As a result of their implementation, all processes in the energy industry will acquire a new quality, consumers of products and services of the FEC will receive new rights and opportunities.

The strategy confirms that digital technologies are being rapidly developed and integrated in the FEC industries, which include the Internet of Things (IoT), 3D modeling, modeling and forecasting based on the analysis of Big Data, neural networks, cloud and fog computing, virtual and augmented reality, machine learning, computer simulation based on digital twins, intelligent sensors, robotic process automation, additive manufacturing.

Moreover, among other measures for the development of the energy industry, the following are defined:

— integration of cross-cutting technologies (Scientific, Technical, and Innovative Activities section);

— integration of automated and robotic technologies for the extraction (production) of energy resources (Section 3);

— integration of robotic systems that exclude the presence of personnel in potentially hazardous environment (Section 4).

The strategic planning documents discussed above predict threats and risks in the integration of AI and robotics in the Russian FEC, and also indicate the imperfection of the legal and regulatory framework not only for the timely application of high-tech products in the energy industry, but also to ensure energy security, balance the interests of all interested parties to such public relations.

With regard to the norms of special laws regulating general aspects of the Russian FEC functioning, it should be noted that the basic regulations do not contain clear requirements for maintaining energy security when integrating the systems under consideration. In particular, Federal Law No. 256-FZ dated July 21, 2011 "On the Safety of Fuel and Energy Complex Facilities" [13], which is the basis for the maintenance of safety at energy facilities, currently does not contain special rules on the restriction or partial application of AI and robotics technologies, nor has the subject composition been established, as well as provisions defining legal liability in case of harm caused by robots.

Industry statutes and regulations (for example, Federal Law No. 170-FZ dated November 21, 1995 "On the Use of Atomic Energy", Federal Law No. 69-FZ dated March 31, 1999 "On Gas Supply in the Russian Federation", etc.) also do not establish such rules, although, as noted earlier, some aspects of digitalization and the integration of AI technology have been the subject of scientific research.

The exception is Federal Law No. 35-FZ dated March 26, 2003 "On Electricity Industry" [14], which establishes the basic requirements for an intelligent electricity (capacity) metering system, and Executive Order of the Government of the Russian Federation No. 890 dated June 19, 2020 [15] which specifies them.

Thus, despite the dynamic integration of AI and robotics into the energy industry of Russia, most aspects of this area are outside the legal environment.

Although there are strategic documents that clearly define threats from high technologies (including in the energy industry), Russian laws do not have a universal ethical basis for the AI application. Besides, the legislator does not take into account the importance of active and consistent legal support for AI, in view of a preliminary study of all the risks assumed at the present stage, as well as the specifics of AI application in the FEC of the state.

EXAMPLES OF LEGAL REGULATION OF AI AND ROBOTICS IN THE ENERGY INDUSTRY IN FOREIGN COUNTRIES

The European Union. The development of digital and high-tech products in the laws of the European Union is carried out on the basis of the Digital Transformation policy document [16]. According to the strategy, digital transformation is the integration of digital technologies by companies and the impact of these technologies on society; digital platforms, cloud computing and AI are among the technologies affecting all industries from transport to energy, agro-industrial complex, telecommunications, financial services, industrial production and healthcare.

Similar to the approach of Russian legislators, the analyzed instrument identifies possible threats and risks caused by the integration of AI and robotics technologies: insufficient and excessive AI application, determining responsibility for damage caused by the product, maintaining information security, etc.

In this regard, in view of the potential systemic risks, the EU is introducing effective rules and a system of supervision in order to ensure an equitable, ethical, and safe transition to the new digital age.

In April 2021, the European Commission proposed the first EU regulatory framework for AI, which notes that AI technologies that can be used in different applications are analyzed and classified according to the risk they pose to users [17].

As a result of a lengthy discussion, the AI Act was adopted in 2023 [18], which established obligations for developers and users depending on the following levels of risk from AI.

1. Unacceptable Risk: cognitive behavioral manipulation of people or specific vulnerable groups, biometric identification and categorization of people, etc.

2. High Risk, where are the AI technologies that negatively affect a particular type of security.

Firstly, AI technology that is used in products which are subject to EU product safety laws (for example, aviation, cars, elevators, etc.).

Secondly, AI technology related to specific areas of life and activity, such as management and operation of critical infrastructure (this includes energy facilities), government agency activities, etc. Such high-tech systems must be registered in a special EU database.

A specific mention of AI in the energy industry and utilities sector is found in the Critical Infrastructure Management and Operation section, which details: "AI systems designed to be used as safety components in the management and operation of road traffic and the supply of water, gas, heating and electricity" [19].

3. Universal Risk. High-performance general-purpose AI models that may pose a systemic risk, such as the more advanced GPT-4 AI model, will need to be thoroughly assessed, and any serious incidents will need to be reported to the European Commission.

4. Limited Risk. AI systems with limited risk must meet minimum transparency requirements that will allow users to make informed decisions. After interacting with the applications, the user can decide whether they want to continue using it.

This risk classification depends on the function performed by the AI system, as well as on the specific purpose and conditions of use of the system. At the same time, the Law establishes a methodology that helps identify high-risk AI systems within the legal framework.

Thus, before placing an AI system on the EU market or otherwise putting it into service, providers must subject it to a conformity assessment.

Besides, the Law takes into account the systemic risks that may arise from the application of general-purpose AI models, including large generative AI models.

The statute also establishes penalties for non-compliance with the rules in the amount of €35 million or 7% of global turnover to €7.5 million or 1.5% of turnover, depending on the violation and the size of the company.

Thus, these rules will be implemented into the national laws of all member States of the European Union, and will also be part of special regulation, including energy regulation.

In the future, it is expected that rules will be adopted to address liability issues within the framework of the application of high-tech products (including AI), as well as the revision of industry laws on different types of safety.

Great Britain. In September 2021, the UK government published the National AI Strategy [20], which sets out the main goals of the state in the area, including comprehensive support for the transition to the digital economy, ensuring that AI will benefit all sectors and regions.

Supervision of the policy document implementation is entrusted to a specially established AI Policy Directorate, which became part of Department for Science, Innovation and Technology (DSIT).

Currently, in the UK, a number of regulations apply to AI, the subject of which includes data protection, consumer protection, product safety, as well as regulation of financial services and medical devices, but there is no comprehensive structure governing their use. That is, the state-legal AI and robotics regulation is carried out with the help of existing legal norms of general and sectoral regulation.

Different regulatory authorities (for example, in energy industry) can apply an individual approach to the application of AI in different conditions. Besides, the regulatory approach is based on a number of comprehensive (cross-sectoral) principles, such as safety, protection and reliability; appropriate transparency and explainability, equitability, accountability and governance; as well as adversariality and indemnification.

Thus, UK government authorities are developing existing regimes while intervening proportionally to eliminate regulatory uncertainty and gaps. This contributes to the creation of an innovation-oriented legal and regulatory framework that will be adaptable and future-oriented, supported by tools for trustworthy AI, including quality assurance methods and technical standards. The presented approach provides greater clarity and encourages collaboration between government, regulators and industry to implement innovation.

Individual regulatory authorities will publish their annual AI strategic plans by April 30 of this year [21].

On the one hand, this approach allows covering a wider range of public relations and industries where high-tech products will be integrated into established stream of commerce. However, on the other hand, industry representatives note that conflicting or uncoordinated requirements from regulators create additional problems of bureaucratic nature, while regulatory gaps can leave risks unaffected, damaging public trust and slowing down the AI integration [22].

Additionally, in the near future, it is expected to develop a "cross-economy AI risk register" in order to create "a single source of truth on AI risks which regulators, government departments, and external groups can use" [23].

Besides, leading AI companies developing highly efficient AI systems have committed to take voluntary security and transparency measures ahead of the first global AI Security Summit hosted by the UK government last November [24].

Thus, the UK offers an independent option for regulating AI and robotics technologies. As part of this approach, the Department for Energy Security and Net Zero adapts energy legal rules and regulations to AI- and robotics-based technologies in a timely manner. Using cross-sectoral principles, the regulator should gradually update the legal framework regarding the requirements for the integration of such technologies into the UK FEC.

This innovative approach to AI regulation uses a principles-based framework that allows regulators to interpret and apply AI within their authority.

CONCLUSION

In the modern period of time, AI is developing rapidly, from generative language models such as ChatGPT to advancements in medical screening technology and optimization of energy resource distribution. Such a rapid spread of AI and robotics technologies can lead to fundamental changes in almost all spheres of life and activity of the state.

At the same time, such changes have some risks. The spread of the technological revolution and its products has caused ethical and safety issues.

Due to the fact that high-tech algorithms are in most cases nontransparent, this can create uncertainty and make it difficult to effectively comply with existing security laws and ensure a balance of all stakeholders' interests. Therefore, legislative measures are needed to ensure a well-functioning internal AI system market, which properly addresses both advantages and risks.

The energy sector of the economy is also subject to the integration of AI and robotics technologies. AI can be applied in the FEC for different purposes, including forecasting energy consumption,

optimizing resource distribution and integrating renewable energy sources.

Moreover, it is required to address the special characteristics of energy industry as a complex industry, which significantly affects not only other industries, but also national security and socio-economic development of the state.

Public relations arising in FEC functioning ensure the vital activity of both individuals and legal entities. That is why the energy industry should be clearly regulated by statutes of different levels and contents, defining rules of conduct and addressing all possible risks when updating it.

According to Victoria V. Romanova, the effectiveness of the energy law and order largely depends on the effectiveness of the legal regime of public relations in the key branch of the economy, the elements of the legal regime in their interrelation [25].

Having studied the current state of legal regulation of AI and robotics in the energy industry in the Russian Federation and foreign countries (using the example of the European Union and the Great Britain), it should be noted that in each jurisdiction a whole set of policy documents has been adopted that consolidate the goals and objectives of AI development, as well as identify the main threats to the further integration of these technologies in different economic realms, including energy.

Besides, there are material differences in legal approaches. To begin with, the European Union was the first to adopt a regulation establishing requirements for AI in general. Such regulation is aimed to ensure that the systems used in the EU market are safe and comply with the laws currently in force, and legal certainty is provided to facilitate investment and innovation, in the FEC of the EU member States as well.

The UK, in turn, presented an independent version of legislative support for AI and robotics technologies, based both on the industry specifics of using these digitalization products (a regulatory approach) and cross-sectoral principles of security and stability. Thus, each government agency can develop a departmental instrument setting standards for the introduction of AI in a certain industry, for example, the energy industry.

The combination of the approaches studied makes it possible to improve national laws on AI and robotics integration in the Russian FEC.

It seems necessary to perform unification at the level of a federal law, the subject of regulation of which will be public relations with regard to AI, the levels of development of AI technology based on degree of risk will be determined, the admissibility of the use of certain high-tech products, and rules regulating legal liability in case of harm caused by these technologies and robotics will be introduced.

Besides, it is required to update the provisions of Federal Law "On the Safety of Fuel and Energy Complex Facilities" No. 256-FZ dated July 21, 2011, expanding the safety requirements for the FEC facilities when implementing AI technology and robotics, including requirements for personnel who are in charge of safety, liability for violations of the Russian laws when applying AI, etc.

Additionally, at the level of subordinate regulation, it is required to develop a legal framework (unified and sectoral) for the certification of AI and robotics technologies in critical infrastructure in different FEC industries (nuclear, gas, oil, and other types of energy).

The scope of application of AI technology is currently beyond state control (supervision). This gap can be filled by expanding the competence of the Federal Service for the Supervision of Environment, Technology and Nuclear Management (Rostekhnadzor).

REFERENCES

1. Artificial Intelligence (Russian Market) // TAdviser — Government. Business. Technology. URL: https://www.tadviser.ru/index.php/%D0%A1%D1%82%D0%B0%D1%82%D1%8C%D1%8F:%D0%98%D1%81%D0%BA%D1%83%D1%81%D1%81%D1%82%D0%B2%D0%B5%D0%BD%D0%BD%D1%8B%D0%B9_%D0%B8%D0%BD%D1%82%D0%B5%D0%BB%D0%BB%D0%B5%D0%BA%D1%82_(%D1%80%D1%8B%D0%BD%D0%BE%D0%BA_%D0%A0%D0%BE%D1%81%D1%81%D0%B8%D0%B8) (date of access: 08.03.2024).
2. Artificial Intelligence will Control the Correct Operation of Digital Protection and Automation Systems in Electrical Grids // NTI MPEI Competence Center. URL: http://nti.mpei.ru/ai-mpei-rosseti/ (date of access: 08.03.2024).

3. Best Practices in the Far East // RusHydro Bulletin: website. URL: https://www.vestnikrushydro.ru/articles/2-fevral-2018/news/luchshie-praktiki-nadalnem-vostoke-2-2018/ (date of access: 08.03.2024).

4. Technology and the Energy Sector Four Trends to Watch and Four Challenges. URL: https://www.cliffordchance.com/insights/resources/blogs/talking-tech/en/articles/2021/06/tech-in-the-energy-sector.html (date of access: 08.03.2024).

5. Romanova V.V. Problems, Strategic Goals and Tasks of the Legal Regulation of Energy Security // Problems and Tasks of Legal Regulation of Energy Security and Protection of Rights of Energy Market Players: monograph / ed. by V.V. Romanova. Moscow: Lawyer, 2019. 264 p.

6. Konev S.I., Kunina I.L. Legal Regulation of the Application of AI Technology in the Russian Fuel and Energy Complex // Law and State: Theory and Practice. 2020. No. 11 (191). 94 p.

7. Vashechkina A.V. Legal Issues of Information (Cyber) Security of the Energy Sector in the Context of Digitalization // Energy Law Forum. 2023. No. 4. P. 90–97; Koropets N.V. Legal Support of Digitalization in the Wholesale Electricity and Capacity Market // Energy Law Forum. 2020. No. 4. P. 48–55; Gusyakov V.Yu. Problems and Tasks of the Legal Support of Digitalization of the Oil Industry. Energy Law Forum. 2021. No. 3. P. 13–21; Lizikova M.S. Artificial Intelligence in Atomic Energy Industry: Application and Regulation // Law and Business: Legal Space for Business Development in Russia: Collective monograph: In 4 Vols. Vol. 3. Moscow, 2020. P. 131–139; Neri A. Artificial Intelligence and the Energy Markets. Watson Farley & Williams. URL: https://www.wfw.com/articles/artificial-intelligence-and-the-energy-markets/

8. Executive Order of the President of the Russian Federation No. 490 dated October 10, 2019 "On the Development of Artificial Intelligence in the Russian Federation". URL: https://www.consultant.ru/document/cons_doc_LAW_335184/ (date of access: 08.03.2024).

9. Executive Order of the President of the Russian Federation No. 216 dated May 13, 2019 "On Approval of the Energy Security Doctrine of the Russian Federation". URL: https://www.consultant.ru/document/cons_doc_LAW_360681/ (date of access: 08.03.2024).

10. Minutes of the Presidium of the Presidential Council for Strategic Development and National Projects No. 16 dated December 24, 2018. URL: https://xn-80aapampemcchfmo7a3c9ehj.xn-p1ai/projects/tsifrovaya-ekonomika (date of access: 08.03.2024).

11. Executive Order of the Government of the Russian Federation No. 2129-r dated August 19, 2020 "On Approval of the Concept for the Development of Regulation of AI and Robotics until 2024 // Official Internet Portal of Legal Information. URL: http://www.pravo.gov.ru (date of access: 26.08.2020).

12. Executive Order of the Government of the Russian Federation No. 1523-r dated June 9, 2020 "On Approval of the Energy Strategy of the Russian Federation for the Period until 2035" // Official Internet Portal of Legal Information. URL: http://pravo.gov.ru (date of access: 11.06.2020).

13. Federal Law No. 256-FZ dated July 21, 2011 "On the Safety of Fuel and Energy Complex Facilities" // Collection of Laws of the Russian Federation. 2011. No. 30 (Part 1). Art. 4604.

14. Federal Law No. 35-FZ dated March 26, 2003 "On Electricity Industry" // Collection of Laws of the Russian Federation. 2003. No. 13. Art. 1177.

15. Russian Government Decree No. 890 dated June 19, 2020 "On the Procedure for Providing Access to a Minimum Set of Functions of Intelligent Electricity (Capacity) Metering Systems" // Official Internet Portal of Legal Information. URL: http://pravo.gov.ru (date of access: 23.06.2020).

16. Shaping the Digital Transformation. URL: https://www.europarl.europa.eu/topics/en/article/20210414STO02010/shaping-the-digital-transformation-eu-strategy-explained

17. EU AI Act: First Regulation on Artificial Intelligence. URL: https://www.europarl.europa.eu/topics/en/article/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence (date of access: 08.03.2024).

18. Artificial Intelligence Act. URL: https://www.europarl.europa.eu/news/en/press-room/20231206IPR15699/artificial-intelligence-act-deal-on-comprehensive-rules-for-trustworthy-ai_(date of access: 08.03.2024).

19. Jones J.S. AI in Europe's Energy Sector in Line for Regulation. URL: https://www.smart-energy.com/regional-news/europe-uk/ai-in-europes-energy-sector-in-line-for-regulation/#:~:text=AI%20objectives,to%20facilitate%20investment%20and%20innovation (date of access: 08.03.2024).

20. National AI Strategy. URL: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1020402/National_AI_Strategy_-_PDF_version.pdf (date of access: 08.03.2024).

21. Gallo V., Nair S. The UK's Framework for AI Regulation. URL: https://www2.deloitte.com/uk/en/blog/emea-centre-for-regulatory-strategy/2024/the-uks-framework-for-ai-regulation.html

22. A Pro-Innovation Approach to AI Regulation. URL: https://www.gov.uk/government/publications/ai-regulation-a-pro-innovation-approach/white-paper#part-2-the-current-regulatory-environment (date of access: 08.03.2024).

23. Ferguson M., Cameron S. AI Laws Inevitable but not Right for Today, Says UK Government. URL: https://

www.pinsentmasons.com/out-law/news/ai-laws-inevitable-says-uk#:~: text=The%20government's%20immediate%20approach%20to, and%20robustness%3B%20appropriate%20transparency%20and (date of access: 08.03.2024).

24. AI Safety Summit. URL: https://www.aisafetysummit.gov.uk/policy-updates/ (date of access: 08.03.2024).

25. Romanova V.V. Energy Law Order: Current State and Tasks. Moscow: Lawyer, 2016. 255 p.

Authors' information:
Ekaterina M. Kologermanskaya
PhD (Law),
Legal Counsel at PromHim, LLC

Сведения об авторе:
Кологерманская Екатерина Михайловна
Кандидат юридических наук,
юрисконсульт ООО "ПромХим"

Received / Поступила в редакцию 27.03.2024
Revised / Поступила после рецензирования и доработки 13.05.2024
Accepted / Принята к публикации 10.06.2024