

ASIAN RUSSIA'S ENERGY COMPLEX IN A CHANGING WORLD

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Valeriy A. KRYUKOV,

ORCID 0000-0002-7315-6044, kryukov@ieie.nsc.ru

*The Institute of Economics and Industrial Engineering, Siberian Branch of the Russian Academy of Sciences,
17, Academician Lavrentyev Prosp., Novosibirsk, 630090, Russian Federation.*

Nikita I. SUSLOV,

ORCID 0000-0001-8899-7906, nsuslov@ieie.nsc.ru

*The Institute of Economics and Industrial Engineering, Siberian Branch of the Russian Academy of Sciences,
17, Academician Lavrentyev Prosp., Novosibirsk, 630090, Russian Federation.*

Yakov V. KRYUKOV,

ORCID 0000-0001-5891-2588, Kryukovyv@ieie.nsc.ru

*The Institute of Economics and Industrial Engineering, Siberian Branch of the Russian Academy of Sciences,
17, Academician Lavrentyev Prosp., Novosibirsk, 630090, Russian Federation.*

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The article examines the current state and possibilities for development of the energy complex in Russia's Asian regions (territories to the East of the Urals) under the constraints of the globally promoted energy transition agenda. The authors consider these issues mainly from the point of view of the extent to which the development of the energy complex in accordance with the UN Sustainable Development Goals and ESG (Environment, Sustainability, Governance) paradigm can ensure more sustainable socio-economic development of the vast Russia's territory. It is shown that lagging behind in development of scientific and production services in the East of Russia, production of specialized machinery and capabilities for deeper processing of energy resources significantly reduces the chances of achieving both the sustainable socio-economic development and reduction of carbon intensity in the area. Developing of procedures and approaches for the institutional structure of government regulation and management of the energy complex in the East of Russia in order to exploit its huge energy potential plays an important role in solving these problems. That is hardly achievable without the formation of feedback between exports of energy resources and the projects aimed at changing the structure of the economy of Russia's Asian regions. The authors believe that the currently observed rapid growth in demand for domestic primary energy resources in China and the Asia-Pacific Region as a whole should not be treated as a stable long-term trend and one should not be entirely guided by it when making and implementing long-term structural decisions. Also, in order to increase the stability of the energy complex of Russia's Asian regions and Russian economy as a whole, it is necessary to develop projects based on the forward and backward linkages between various economic sectors and regions.

Keywords: Asian Russia, energy complex, ESG (Environment, Society, Governance), energy transition, institutional conditions, socio-economic development, Eastern vector.

About authors:

Valery A. KRYUKOV, Academician of the RAS, Dr. Sci. (Econ.), Professor, Director.

Nikita I. SUSLOV, Dr. Sci. (Econ.), Professor, Deputy Director.

Yakov V. KRYUKOV, Cand. Sci (Econ.), Senior Researcher.

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Traditionally, the most important problems of the economy of Siberia and the Far East (Asian Russia) include the need to accelerate technological development, as well as the need for compression of the innovation cycle [1]. The remaining significant role of raw materials and energy production in the gross domestic product structure there negatively affects the stability of the socio-economic development dynamics of this important region.

FUEL AND ENERGY COMPLEX OF ASIAN RUSSIA: ACTUAL NEW AGENDA

New factors include the global energy transition agenda – reducing carbon emissions, increasing the role of new and renewable energy sources, as well as increasing attention to environmental issues. The movement in this direction will be accompanied by

increased competition in the markets of energy resources, investments, and human capital. Not all energy sources will be able to maintain their efficiency in the new coordinate system, which includes not only the return on investment associated with the extraction of energy resources but also the minimization of the “carbon footprint”.

Therefore, non-compliance with the new conditions will inevitably lead to an outflow of the innovation sector resources, not only finance but also people – carriers and generators of new ideas and practices. The preservation of the raw material model of economic growth will not allow finding answers to new challenges. Only development within the framework of the ESG (Environment, Sustainability, Governance) paradigm can ensure more sustainable socio-economic development of a vast territory. A necessary condition will be to increase the scientific and technical level of the fuel and energy sector, primarily through the development of modern machine-building and production and service industries, which will contribute to the creation of high-tech jobs, as well as the development of the industrial and educational potential of the East of Russia, and mitigate the unfavorable demographic situation.

In the modern economy, which is increasingly focused on the priorities of SDG (Sustainable Development Goals) at the national level and ESG at the company level, the influence of the fuel and energy sector on structural transformations in the economy of the country and its regions, as well as on the formation of a model of socio-economic and low-carbon development in line with the modern system of priorities and values, is important.

Unfortunately, very little attention has been paid to these issues of fuel and energy development in the East of Russia so far. The main focus is on creating an infrastructure for “entering” the oil, natural gas, and coal markets of the countries of Southeast Asia and the Asia-Pacific Region. As colleagues from the Institute of Economic Research of the Far Eastern Branch of the Russian Academy of Sciences note, “in 2000-2005... it was supposed to combine the infrastructural function of the Far East with the task of forming a ‘new industrial base’ in the form of creating clusters of high-tech industries and services in the southern part of the region. The solution to this problem, as well as the implementation of the concept of new industrialization in general, was presented in the form of the creation of industrial and service arcs in the southern part of the Far East. However, by the end of the first decade of the 21st century, the situation has changed dramatically. The idea of forming ‘intercepting border arcs’ is being implemented in the northeastern provinces of China adjacent to the Russian Far East” [1, p. 95].

The answer to the question of the need to create “industrial and service arcs” in the fuel and energy sector of both the East of Russia and the country as a whole in this direction lies both in the theoretical plane (determining the ways of formation and development of institutional systems in the fuel and energy sector of the region) and in the plane of practical energy policy (in terms of the composition and structure of strategic documents and the places of various levels of the hierarchy of state regulation in solving the tasks).

The authors of this article believe that the theoretical foundations for solving the problems mentioned above are of a general nature. The key role is played by the main provisions of the system approach and the related generalizations of modern institutional theory. While applying these approaches, it is necessary to take into account the specific features of production and economic systems that were created earlier and/or reflect the characteristics of a particular country. The latter is important for understanding and taking into account the starting conditions for the transition of the fuel and energy complex to a new quality: in this case, from the point of view of the possibilities of following modern guidelines for its development [2].

INSTITUTIONAL FRAMEWORK

The experience of various countries in the development of the fuel and energy complex is diverse and multifaceted. The differences concern both the directions and dynamics of the implemented changes in the institutional system (the key aspect is the issue of state participation in ownership of energy assets) and the role of various government levels in these changes (the key aspect is the role and place of regions in determining the conditions for using the energy potential of the territory and receiving part of rental income).

One of the most interesting approaches to the formation of a system of measures for the implementation of SDG priorities is used by Norway. There, it was possible to form a specialized institutional system (according to Young’s definition, a resource regime [3, p. 19]), which made it possible not only to acquire unique competencies in the field of search and production of hydrocarbons on the offshore shelf but also to create the basis for a successful transition to a low-carbon model of development of the oil and gas sector and the fuel and energy sector as a whole, as well as to form the basis socio-economic sustainability for the long term.

It is based not on the vertical redistribution of financial and economic effects in order to finance certain activities through the state budget system, but on targeted scientific and technological regulation at the level of individual projects for the development of hydrocarbon resources offshore. At the same time, envi-

ronmental issues and socio-economic benefits for the country are among the priorities. The state administration bodies, together with the subsoil user companies, determine both production and technological, as well as scientific and technical conditions for the use of the subsoil.

This system is based not on the prescriptions and guidelines of higher government bodies, but on the mutual obligations of the state and consortia of companies holding the rights to use subsurface areas. Obligations have the form of a contract and can be challenged in court. The resource regime not only assumes the mutual responsibility of the parties but also forces the consortium participants to interact and cooperate within the framework of individual projects. This ensures that the risks of each of the participants are reduced, as well as the flow of knowledge and competencies between them.

The results are impressive – Norwegian service companies are currently among the world leaders in offshore production and are successfully developing modern technologies in many related industries. The creation of “industrial and service arcs” in Norway was quite a natural consequence of this approach. Cities such as Stavanger, Kristiansand, Trondheim, and Bodo are the places of concentration of hundreds of high-tech companies, scientific, engineering, and educational centers at the world level.

The formation of various approaches to the interaction of the fuel and energy sector and the country's economy was conducted in the context of the creation and development of social value. For example, the Putting Energy to Work report presented by the Norwegian government in June 2021 [4] suggests the development and expansion of the role of the processes of development and use of energy resources in the formation of a new value system. The document defines the directions and approaches to using energy resources to ensure sustainable economic growth and create new jobs. It is part of a broad government Climate Action Plan detailing the processes of the impact of renewable energy and the new configuration of ties in the fuel and energy sector on the expansion of the scope of electricity and the gradual withdrawal from the use of fossil fuels.

THE CURRENT PRIORITY IS PRODUCTION VOLUMES AND TAXES

Russia has developed a significant list of practical documents defining the role and place of the fuel and energy sector in solving the problems of socio-economic development of the country and its individual regions [5, 6, 7, 8]. Their legislative basis is, for example, the Law of the Russian Federation “On Subsoil”

[9], the Law of the Russian Federation “On Electric Power Industry” [10], etc. In addition to sectoral strategic programs, there are a number of documents aimed at detailing common approaches in relation to individual regions.

Among the main shortcomings of the documents, which significantly affect the solution of the range of issues considered here (in line with the implementation of SDG priorities), are their exclusive focus on preferences, understanding, and vision from the perspective of corporations. The main emphasis is on the implementation of large projects and the creation of preferential tax conditions within the boundaries of specially designated territories: Territories of Advanced Development and Special Economic Zones [11]. The issues of regional and interregional infrastructure development are supposed to be solved within the framework of special projects funded, among other things, through federal development institutions. The issues of forming cooperative ties – both in scientific and production issues and in organizing the production of more complex products with increased added value – are far from the highest priority.

The main reason for this policy is the insufficient volume of the Russian market so far. However, its development is not so much a question of individual companies as of the state policy of socio-economic development of the East of Russia. As it has been already noted [12], the national subsoil use system is characterized by a number of features that reduce its innovative potential:

- the administrative nature of legislation over the relationship between the state and the subsoil user (and not civil law, as in Norway) entails the impossibility of discussing mutual obligations and responsibilities of both parties, which significantly increases the risks for the subsoil user;

- granting a license for a subsoil plot is based on the principle of “one site – one subsoil user company”, which significantly reduces the area of knowledge transfer and also leads to the emergence of colossal “patrimonial” territories controlled by large companies. This results in the continued low degree of recovery of oil reserves and selective mining of deposits in the case of solid minerals;

- determination of production levels and rates of mineral extraction is based on approaches and practices that have proven themselves earlier; subsoil users follow conservative scenarios for the development and development of deposits;

- lack of requirements and conditions related to the development of Russian scientific, technological, and human resource potential in the implementation of projects [9].

A direct consequence of the above approach is the orientation of companies to supply energy resources for export. At the same time, problems related to the solution of issues of socio-economic development receive a low priority.

FUEL AND ENERGY SECTORS OF THE EAST OF RUSSIA: FROM THE FISCAL AGENDA TO COOPERATION

Electric power industry. The needs of the Siberian Federal District for electricity are provided by electric power stations of the Siberian Integrated Power System (IPS), as well as small municipal and departmental power plants (mainly diesel-fueled) operating in isolated power nodes. The electric power industry of the IPS is represented by three types of generation: thermal, hydraulic, and solar. As of January 1, 2021, the share of IPS with a capacity of 300.2 MW was 0.6% of the installed capacity of the power system. The reform of the industry, which prioritized the solution of such an issue as covering the projected shortage of electricity while renewing capacities, led to the preservation and aggravation of existing problems.

At the same time, the conditions that determine the development of energy are changing very significantly. First of all, the requirements for the quality of electricity are growing. The underestimation of this circumstance led to the fact that the General Scheme of the development of the Russian electric power industry and the investment projects implemented on its basis were focused only on accelerated production growth [13]. In reality, there was no significant increase in electricity consumption. The stagnation of demand raises questions about the development of the electric power industry in a new way.

The agenda includes not only issues of reliability of energy supply but also movements in line with SDG and ESG, primarily reducing greenhouse gas emissions. However, many industry experts believe that in Siberia and the Far East, coal “does not have economically adequate alternatives” [14]. Natural gas in this vast territory can be considered as an alternative to coal only in regions where a Unified Gas Transportation System is developing or it is possible to deliver liquefied natural gas (for example, in coastal Arctic settlements).

The development of the electric power industry based on coal fuel can be carried out in the following main directions: a) reconstruction of old stations in order to increase their economic, technological, and environmental efficiency; b) construction of new coal-fired thermal power plants based on existing technologies; c) construction of coal-fired thermal power plants

using the latest energy-efficient and environmentally friendly technologies; d) development of small-scale energy, especially co- and trigeneration with maximum replacement of boilers with mini thermal power plant (using coal).

In the East of Russia, energy supply can also be carried out at the expense of low-power nuclear power plants [15]. The advantage of nuclear power plants is the ability to generate energy with minimal emissions of harmful substances. There is no need to create a powerful transport infrastructure to constantly supply fuel to the station. It is also possible to consider the possibility of manufacturing equipment for small-sized nuclear power plants in the industrial centers of the East of Russia, which will contribute to the creation of high-tech jobs and the consolidation of qualified personnel.

The authors of this article share the point of view that “...the most realistic model seems to be a consistent reasonable combination of large-scale generation and distributed energy, which will ensure the gradual adaptation of the unified energy system of the country to the ‘energy transition’” [16]. The complementary nature of these processes is noted, for example, in the work by colleagues from the Melentyev Institute of Energy Systems [17].

The dynamics of the electric power industry in the East of Russia are still largely determined by inertial processes. There is a dominance of approaches based on the factor of “economy of scale” and the associated predominance of large individual producers and consumers. At the same time, the orientation to the market of one country (China) contributes to a small extent to overcoming this trend and increasing the flexibility of the energy system.

The coal industry of Asian Russia. Since 2014, there has been a strong downward trend in global coal consumption in Asia as a whole. The growth of coal consumption in the electric power industry is a priority only in India and a number of ASEAN countries. China has embarked on a gradual decline in the role of coal in the energy sector, and countries such as Japan, the Republic of Korea, and Taiwan are characterized by uncertainty in coal consumption forecasts.

The current situation in the global coal market has expanded the export of Russian companies to the east, where demand and reasonable prices remain. Coking coal supplies will be the most stable in the medium term in the conditions of the energy transition process and the increasing orientation of the world economy to SDG priorities. Russian companies have sufficient reserves here. For example, according to the results of the first half of 2021, the leader in the production and export of anthracite, Sibanthracite, increased

coal sales to India by 140% compared to last year. In 2021, the production of Sibantracite increased by 22% to 10.4 million tons, of which anthracite accounts for 6.3 million tons and metallurgical coal of the T brand – 4.1 million tons [18].

Among the promising export-oriented regions of the Russian Federation, where coal mining will develop until 2035, Kuzbass, Tyva, the Khabarovsk Territory, and the Republic of Sakha (Yakutia) should be singled out [19, 20]. The state and business are involved in the implementation of relevant projects. The construction of a private third branch of the Baikal-Amur Mainline is being discussed – from the Elginsky field owned by A-Property to the Sea of Okhotsk [20].

The principal problem associated with the intensive development of the Eastern landfill (the development of coal mining in the south of Yakutia) and the increase in coal exports to the east is to ensure the relationship with the solution of internal socio-economic and environmental problems. The impact of the new priority system on the coal industry in the East of the country is complex and contradictory.

On the one hand, new projects are being implemented to develop deposits of coal of the best quality with great export potential. At the same time, these projects are poorly synchronized with the adaptation of the “old” coal-mining areas to the solution of emerging acute social employment problems and the tasks of eliminating previously caused environmental damage. On the other hand, the transport infrastructure is being created and improved, which can serve as the basis for the development of new energy projects (including new energy sources) and improving living standards [21, 22].

The experience of the province of Alberta (Canada) is interesting, which in a similar situation (the presence of enormous resources of tar sands) formed in 1976 a special trust fund to solve infrastructure problems, as well as create and develop new technologies related to their development and extraction [23]. A number of development institutes were established there to support the development and promotion of new energy-saving and “green” technologies in the energy sector [24, 25]. The source of the formation of the fund was deductions from tax payments to the provincial budget from the extraction and sale of minerals.

In Russia, the formation of such funds at the regional level due to deductions from the sale of energy resources in the domestic market is hardly possible due to relatively low prices [26]. At the federal level, the government compensates with tax benefits and preferences [27] for the high cost of developing new deposits, as well as acquiring critical types of technological equipment. At the same time, there are a num-

ber of scientific and industrial centers in the East of Russia – Omsk, Novosibirsk, Krasnoyarsk, Irkutsk, Khabarovsk, and Vladivostok, which could become a base for the development of domestic technologies and equipment production.

Oil and gas sector. While implementing projects in the oil and gas sector, two circumstances should be highlighted, on which the adjustment of the institutional system in line with the modern system of priorities largely depends. First, stimulating the formation of a mobile organizational structure within the sector – creating opportunities for companies with different experiences and financial capabilities to participate in the development of deposits [28]. In Russia, this issue is not given due attention. The access to subsurface areas is determined on an auction basis, and the winner of the auction gets the right to use it. This leads to the dominance of large and largest companies in the sector, while companies with relatively small financial capabilities, but having unique knowledge and experience, are deprived of the opportunity to apply them. An exception to the general rule can be considered only the Irkutsk Oil Company operating at such facilities, the practice of development of which large companies in Russia did not have.

The second no less important circumstance is not only the investment attractiveness of projects in the field of core activities but also state assistance to the business of domestic contractors of various types of work – specialized research, production of unique equipment, and performance of production and service operations [29]. Unfortunately, the stimulation of the extraction of mineral resources in the form of a wide range of tax benefits and preferences, as well as (co)financing by the state of the construction of infrastructure facilities, dominates so far. With a significant delay, in 2021, the Ministry of Industry and Trade of Russia has initiated two projects aimed at expanding the production of domestic equipment for the oil and gas sector [30, 31, 32].

Stimulating the process of formation and development of domestic contractors is still presented in strategic documents more than modestly. The basis for solving such issues is the stabilization of tax conditions during the period of return on investment or the selection of a certain level of initial reserves. The most proven approach in world practice is a concession, that is, a contract with unchanged tax conditions between the state and the subsoil user. Contractual relations within the framework of concessions in the Russian Federation were widely discussed in the 1990s. The Law “On Production Sharing Agreements” was adopted [33]. On its basis, the agreements were concluded with foreign companies: in the Nenets District (Kharyaga oil-field) and on the shelf of Sakhalin (Sakhalin-1, Ex-

on Mobil operator, and Sakhalin-2, Sakhalin Energy operator).

However, this practice has not received the necessary development, primarily in terms of the obligations of participating companies to develop local production, technological, scientific, and human resource potential. Thus, the opportunities for the formation of a new industrial base in the East of Russia and the creation of a diversified economy there, capable of effectively responding to modern challenges, were missed.

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The development delay of a diversified economy reduces the chances of achieving both sustainable socio-economic development and solving the problems of reducing carbon intensity. The formation of procedures and approaches for institutional adjustment of the system of state regulation and management of the processes of development of energy resources plays an important role in solving the problems raised. Within the oil and gas sector, it is necessary to stimulate the formation of a mobile organizational structure, including the creation of opportunities for companies with different experiences and different financial capabilities to participate in the development and development of fields, which will also enable small companies in the sector to apply their unique knowledge and ex-

perience. It will also be useful to provide state assistance to the formation and development of domestic contractors for various types of work – research, production of equipment, and performance of production and service operations.

Considering that the electric power industry of Siberia and the Far East cannot do without coal, measures to improve the efficiency of coal generation are coming to the fore, including the reconstruction of old thermal power plants in order to increase economic, technological, and environmental efficiency; the construction of coal-fired thermal power plants using new energy-efficient and environmentally friendly coal-burning technologies; the development of small-scale energy, especially co- and trigeneration with maximum replacement of boilers with mini combined heat and power plants. Increasing coal exports to the east will also be of growing importance, but this process should be interconnected with the solution of internal socio-economic and environmental problems – both in the East and in the country as a whole.

The formation of feedback of export-oriented energy supplies with the implementation of projects aimed at changing the structure of the economy will create conditions for the sustainable development of Asian Russia and the integration of regional economic policy into the agenda of the global energy transition.

REFERENCES

1. Минакир П.А., ред. *Российский Дальний Восток на пути в будущее*. Хабаровск, ИЭИ ДВО РАН, 2017. 395 с. [Minakir P.A., ed. *The Russian Far East on the way to the future*. Khabarovsk, Economic Research Institute of Far Eastern Branch of the RAS, 2017. 395 p. (In Russ.)]
2. Крюков В.А. *Институциональная структура нефтегазового сектора. Проблемы и направления трансформации*. Новосибирск, Издательство ИЭОПП СО РАН, 1998. 276 с. [Kryukov V.A. *Institutional structure of the oil and gas sector. Problems and directions of transformation*. Novosibirsk, The Institute of Economics and Industrial Engineering within the Siberian Branch of the RAS, 1998. 276 p. (In Russ.)]
3. Young O.R. *Resources Regimes. Natural Resources and Social Institutions*. Berkley, Los Angeles, London, University of California Press, 1982. 276 p.
4. Energy to Work. Government Publishes White Paper on Long Term Value Creation from Norway's Energy Resources. *Government.no*, 11.06.2021. Available at: <https://www.regjeringen.no/en/aktuelt/regjeringen-legger-frem-stortingsmelding-om-verdiskaping-fra-norske-energiressurser/id2860271> (accessed 08.08.2021).
5. *Энергетическая стратегия Российской Федерации на период до 2035 года*. [Energy strategy of the Russian Federation until 2035. (In Russ.)] Available at: <https://minenergo.gov.ru/node/1026> (accessed 08.08.2021).
6. Указ Президента РФ от 1 декабря 2016 г. № 642 “О Стратегии научно-технологического развития Российской Федерации”. [Decree № 642 as of 01.12.2016 “On the strategy of scientific and technological development of the Russian Federation”. (In Russ.)] Available at: <https://www.garant.ru/products/ipo/prime/doc/71451998> (accessed 08.08.2021).
7. *Стратегия развития минерально-сырьевой базы Российской Федерации до 2035 года*. [Development strategy for the mineral resource base of the Russian Federation up to 2035. (In Russ.)] Available at: https://www.mnr.gov.ru/docs/strategiya_razvitiya_mineralno_syrevoiy_bazy_rossiyskoy_federatsii_do_2035_goda/strategiya_razvitiya_mineralno_syrevoiy_bazy_rossiyskoy_federatsii_do_2035_goda (accessed 08.08.2021).
8. *Долгосрочная программа развития угольной промышленности России на период до 2035 года*. [Long-term program for the development of the coal industry in Russia for the period up to 2035. (In Russ.)] Available at: <http://static.government.ru/media/files/OoKX6PriWgDz4CNNAxwIYZEE6zm6152S.pdf> (accessed 08.08.2021).
9. *Федеральный закон “О недрах” от 21.02.1992 № 2395-1*. [Federal Law № 2395-1, 21.02.1992 “On subsoil”. (In Russ.)] Available at: http://www.consultant.ru/document/cons_doc_LAW_343 (accessed 08.08.2021).

10. *Федеральный закон “Об электроэнергетике” от 26.03.2003 № 35-ФЗ.* [Federal Law № 35-FL, 26.03.2003. (In Russ.)] Available at: http://www.consultant.ru/document/cons_doc_LAW_41502 (accessed 8.08.2021).
11. *Особые экономические зоны. Министерство экономического развития РФ.* [Special economic zones. Ministry of economic development RF. (In Russ.)] Available at: https://www.economy.gov.ru/material/directions/regionalnoe_razvitie/instrumenty_razvitiya_territoriy/osoby_economicheskie_zony (accessed 08.08.2021).
12. Крюков В.А. О взаимосвязи и взаимодействии экономической, промышленной и научно-технологической политик. *Управление наукой: теория и практика*, 2020, т. 2, № 2, сс. 15–46. [Kryukov V.A. On the interconnection and interaction of economic, industrial and scientific technological policies. *Science Management: Theory and Practice*, 2020, vol. 2, no. 2, pp. 15–46. (In Russ.)] DOI: 10.19181/smtpr.2020.2.2.1
13. *Генеральная схема размещения объектов электроэнергетики до 2020 года.* [General layout of power facilities until 2020. (In Russ.)] Available at: <http://static.government.ru/media/files/zzvuuhfq2f3OJK8AzKVsrGIbW8ENGp.pdf> (accessed 08.08.2021).
14. Макаров А.А., Григорьев Л.М., Митрова Т.А., ред. *Прогноз развития энергетики мира и России на период до 2040 г.* Москва, ИНЭИ РАН, АЦ при Правительстве РФ, 2016. 196 с. [Makarov A.A., Grigoryev L.M., Mitrova T.A., eds. *Forecast of energy development in the world and in Russia for the period up to 2040.* Moscow, ERI RAS, AC for the government of Russian Federation, 2016. 196 p. (In Russ.)]
15. Дятел Т. НОВАТЭК и “Росатом” подхватили Чукотку. За энергоснабжение Баимского ГОКа разворачивается конкурентная борьба. *Коммерсантъ*, № 34, 26.02.2020. [Dyatel T. NOVATEK and Rosatom took over Chukotka. Competition unfolding for energy supply of Baimsky GOK. *Kommersant*, № 34, 26.02.2020. (In Russ.)] Available at: <https://www.kommersant.ru/doc/4268272> (accessed 08.08.2021).
16. *Распределенная энергетика в России: потенциал развития.* Сколково, Энергетический центр Московской школы управления, 2018. 87 с. [Distributed energy in Russia: Development Potential. Skolkovo, Energy center of Skolkovo Business School, 2018. 87 p. (In Russ.)]
17. Стенников В.А., Воропай Н.И. и др. *Инновационная электроэнергетика – 21.* Москва, Издательско-аналитический центр Энергия, 2017. 584 с. [Stennikov V.A., Voropay N.I. et al. *Innovative Power Industry – 21.* Moscow, Publishing and analytical center Energia, 2017. 584 p. (In Russ.)]
18. Зайнуллин Е. Российский уголь прирастает Индией. “Сибантрацит” наращивает поставки в страну. *Коммерсантъ*, 15.07.2017. [Zajnullin E. Russian coal is growing by India. “Sibanthracite” Increases Supplies to the Country. *Kommersant*, 15.07.2017. (In Russ.)] Available at: <https://www.kommersant.ru/doc/4900374> (accessed 08.08.2021).
19. *Долгосрочная программа развития угольной промышленности России на период до 2035 года.* [Long-term program for the development of the coal industry in Russia for the period up to 2035. (In Russ.)] Available at: <http://static.government.ru/media/files/OoKX6PriWgDz4CNNAxwIYZEE6zm6152S.pdf> (accessed 08.08.2021).
20. Россия построит аналог БАМа для экспорта угля с рекордного месторождения. *Seldon News*, 08.07.2021. [Russia will build an analogue of BAM to export coal from a record deposit. *Seldon News*, 08.07.2021. (In Russ.)] Available at: <https://news.myseldon.com/ru/news/index/253959782> (accessed 08.08.2021).
21. Новикова Е. Кто захватит Восточный полигон? *Эксперт*, 16.07.2021. [Novikova E. Who will take over the East range? *Expert*, 16.07.2021. (In Russ.)] Available at: <https://expert.ru/2021/07/16/kto-zakhvatit-vostochniy-poligon/> (accessed 08.08.2021).
22. Потаева К. БАМ уперся в уголь. Проекты модернизации БАМа не позволят существенно разгрузить Транссиб. *Коммерсантъ*, 13.04.2021. [Potayeva K. BAM ran into coal. BAM modernization projects will not allow to significantly relieve the Trans-Siberian railway. *Kommersant*, 13.04.2021. (In Russ.)] Available at: <https://www.kommersant.ru/doc/4761559> (accessed 08.08.2021).
23. Murphy R.P., Clemens J. *Reforming Alberta’s Heritage Fund: Lessons from Alaska and Norway.* Vancouver, Fraser Institute, 2013. 47 p.
24. *Energy and Environment Systems Engineering.* Available at: www.energysystems.ualberta.ca/funding-agencies (accessed 08.08.2021).
25. Kaddoura S., Jeyakumar B., Israel B., Way N., Simpson-Marran M. *Alberta’s Emerging Economy: A Blueprint for Job Creation through 2030.* Calgary, Pembina Institute, 2020. 40 p.
26. *Тарифная кампания в электроэнергетике на 2020 год. Информационно-аналитический бюллетень.* Москва, НИУ ВШЭ, 2020. 35 с. [Electricity tariff campaign for 2020. Information and Analytical Bulletin. Moscow, HSE University, 2020. 35 p. (In Russ.)]
27. Милькин В., Подлинова А. Минвостокразвития предлагает снизить НДС для проектов в ДФО. Это позволит привлечь в регион 96 млрд рублей инвестиций. *Ведомости*, 16.07.2021. [Mil’kin V., Podlinova A. The Ministry for the development of the Russian Far East proposes to reduce the severance tax for projects in the Far Eastern Federal District. *Vedomosti*, 16.07.2021. (In Russ.)] Available at: <https://www.vedomosti.ru/economics/articles/2021/07/16/878399-snizitndpi-dlya-proektov-v-dfo> (accessed 08.08.2021).
28. Шафраник Ю., Крюков В. *Нефтегазовый сектор России: трудный путь к многообразию.* Москва, 2016. 272 с. [Shafranik Yu., Kryukov V. *Russia’s oil and gas sector: the hard road to diversity.* Moscow, 2016. 272 p. (In Russ.)]

29. Israel L. Commentary: Local Content Strategies Must Evolve to Support Sustainability. *Offshore*, 29.05.2021. Available at: <https://www.offshore-mag.com/business-briefs/article/14204306/commentary-local-content-strategies-must-evolve-to-support-sustainability> (accessed 08.08.2021).
30. Смертина П. Минпромторг предлагает направить 127 млрд руб. на локализацию оборудования для СПГ. *Коммерсантъ*, № 118, 09.07.2021. [Smertina P. The Ministry of Industry and Trade proposes to allocate 127 Billion Rubles for the localization of equipment for LNG. *Kommersant*, № 118, 09.07.2021. (In Russ.)] Available at: <https://www.kommersant.ru/doc/4890756> (accessed 08.08.2021).
31. Красинская А. “Новатэк” намерен развивать малотоннажное производство СПГ. *Аргус*, 15.06.2021. [Krasinskaya A. Novatek intends to develop small-scale LNG production. *Argus*, 15.06.2021. (In Russ.)] Available at: <https://www.argusmedia.com/ru/news/2234493-novatek-nameren-razvivat-malotonnazhnoe-proizvodstvo-spg> (accessed 08.08.2021).
32. Приказ Минпромторга Об утверждении Плана мероприятий по импортозамещению в отрасли нефтегазового машиностроения Российской Федерации на период до 2026 г. от 30.06.2021. [On approval of the action plan for import substitution in the oil and gas engineering industry of the Russian Federation for the Period up to 2026 on 30.06.2021. (In Russ.)] Available at: https://minpromtorg.gov.ru/docs/#!/vn_prikaz__2362_ot_30062021 (accessed 08.08.2021).
33. Федеральный закон “О соглашениях о разделе продукции” от 30.12.1995 № 225-ФЗ. [Federal Law № 225-FL 30.12.1995 “About production sharing agreements”. (In Russ.)] Available at: http://www.consultant.ru/document/cons_doc_LAW_8816 (accessed 08.08.2021).

ТЭК АЗИАТСКОЙ РОССИИ В МЕНЯЮЩЕМСЯ МИРЕ

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*КРЮКОВ Валерий Анатольевич, академик РАН, доктор экономических наук, профессор,
ORCID 0000-0002-7315-6044, kryukov@ieie.nsc.ru*

*Институт экономики и организации промышленного производства СО РАН, РФ, 630090 Новосибирск,
пр-т Академика Лаврентьева, 17.*

*СУСЛОВ Никита Иванович, доктор экономических наук, профессор,
ORCID 0000-0001-8899-7906, nsuslov@ieie.nsc.ru*

*Институт экономики и организации промышленного производства СО РАН, РФ, 630090 Новосибирск,
пр-т Академика Лаврентьева, 17.*

*КРЮКОВ Яков Валерьевич, кандидат экономических наук,
ORCID 0000-0001-5891-2588, KryukovYV@ieie.nsc.ru*

*Институт экономики и организации промышленного производства СО РАН, РФ, 630090 Новосибирск,
пр-т Академика Лаврентьева, 17.*

Статья подготовлена по результатам исследования, проводимого при финансовой поддержке Российской Федерации в лице Министерства науки и высшего образования России в рамках крупного научного проекта “Социально-экономическое развитие Азиатской России на основе синергии транспортной доступности, системных знаний о природно-ресурсном потенциале, расширяющегося пространства межрегиональных взаимодействий”. Соглашение № 075-15-2020-804 от 02.10.2020 (грант № 13.1902.21.0016).

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Анализируются состояние и направления развития ТЭК Азиатской России с точки зрения встраивания в повестку мирового энергоперехода. Показано, что отставание в решении вопросов развития научно-производственных сервисных услуг, специализированного машиностроения и более глубокой комплексной переработки энергоресурсов значительно снижает шансы достижения устойчивости социально-экономического развития региона и решения задач снижения углеродоемкости. Важную роль имеет формирование процедур и подходов институциональной настройки системы государственного регулирования и управления процессами освоения энергетического потенциала.

Ключевые слова: Азиатская Россия, ТЭК, ESG, энергопереход, институциональные условия, социально-экономическое развитие, Восточный вектор.

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