

REPUBLIC OF AZERBAIJAN

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ABSTRACT

of the dissertation for the degree of Doctor of Philosophy

IMPROVING ECONOMIC-ORGANIZATIONAL MECHANISMS OF DIVERSIFIED ECONOMIC INFRASTRUCTURE PROVISION

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GENERAL CHARACTERISTICS OF THE WORK

Relevance and degree of development of the dissertation topic.

The development of the Azerbaijani economy requires a new structural format of the national economy, the weakening of the leading positions in the extractive sector of natural resources, the establishment of innovative production and the stimulation of its development. Without sufficient infrastructure, innovative production cannot run efficiently. In addition to maintaining the smooth operation of the national economy, infrastructure helps us continue addressing the most pressing current economic challenges.

The implementation of the Third Industrial Revolution was widely discussed on the World Economic Forum in Davos. As a result, the implementation of the Third Industrial Revolution was an essential topic at the Davos World Economic Forum. At the same time, the Fourth Industrial Revolution's execution was considered expedient. The President Ilham Aliyev highlighted it several times in his speeches.

The development of new forms of ownership in modern conditions, the need for highly qualified specialists to be trained, the results of scientific and technological progress, the implementation of innovative technologies, new forms of labor division, and increased investment are all factors that influence the formation and development of production and utility infrastructure. Therefore, the development of infrastructure projects is inextricably tied to the country's fundamental reforms.

It should be noted that relocating the reform centers to regional and local facilities may lead to the accumulation of various issues at these facilities. They, in turn, have the potential to weaken and obstruct the development of these relationships. The most dangerous of these may be the result of job losses in the regions. It is required to establish new theoretical and methodological approaches to state regulation of production and utility infrastructure in connection with the development of market relations, taking into account the country's ongoing reforms. Simultaneously, a system of precise statistical data on the progress of infrastructure projects and forecasting the building

of infrastructure facilities in the country, specific economic regions, and municipalities should be established. The optimal implementation of domestic and foreign investments, as well as funds directed towards the development of these industries, must be a priority for the relevant government institutions. In view of above-mentioned, a study of the directions for successful use of modern infrastructure policy, as well as the methods for its implementation is a pressing issue.

A comprehensive theoretical and methodological approach has been conducted to investigate issues connected to state regulation in the sustainable development of the production and utility infrastructure sectors. In their works, Azerbaijani economists and scientists engaged in the research of infrastructural issues, including Samadzada Z.A., Nuriyev A. Kh., Mammadov M.A., Aliyev T.N., Valiyev T.S., Jabiyev R.M., Allahverdiyev H.B., Gafarov K.S., Ahmadov A.M. and others have detected a variety of theoretical, methodological, and practical infrastructure challenges, as well as proposed essential recommendations for improving infrastructure's economic and organizational systems in their works. The works of foreign scholars including Lewis W.A., Donald Coffelt, Chris Hendrickson, Gerardus Blokdyk, Craig Taylor, Goncharov V.N., Kirillova A.N., Ribtsev V.V., Safronova N.B. and others on economic development mechanisms of infrastructure provision are notable in this regard.

Object and subject of the research. The research focuses on production and utility infrastructure as one of the most important components in guaranteeing the national economy's long-term viability. The subject of the study includes the factors and conditions that promote the role of production and utility infrastructure in national economic development in the context of market relations.

Goals and objectives of the research. The dissertation's goal is to investigate the problems of infrastructure in the development of the national economy, as well as the effective use of its existing potential including the application of advanced market mechanisms, improving the organizational and economic mechanisms of infrastructure in a diversified economy, and increasing infrastructure's strategic role in sustainable development. To achieve the dissertation's goal, the

following **objectives** have been specified:

- Identify and classify the content and functions of production infrastructure in the development of a diversified economy;
- Investigate the main development trends in infrastructure systems in today's world;
- Assessment of the theoretical and methodological bases of regulating the development of infrastructure systems with new approaches;
- Analyze the existing state and future development orientations of the national economy's infrastructure;
- To study the dynamics of development of utility infrastructure and prepare proposals;
- Evaluation of the current potential of energy supply infrastructure in various areas of the diversified economy;
- Formation of a production infrastructure development strategy and verification of forecasts;
- Identify areas where the regulation of production infrastructure should be improved;
- Analysis of the efficacy of institutional reforms in the sector of utility and production infrastructure as well as provision of guiding ideas.

Research methods. The dissertation has been written using statistical, analytical, comparative, systematic, and expert assessment approaches, as well as retrospective, structural analysis, and logical research. Information base of the research includes reports and data of the State Statistical Committee of the Republic of Azerbaijan, the Ministries of Economy and Finance, publications researching the state policy to ensure infrastructure development in the economy and published literature of theoretical and practical importance by prominent organizations on successful utilization of the infrastructure's potential, as well as information on the republic's normative-legal base.

The main provisions of the defence: The following main provisions stemming from the research's scientific uniqueness and findings are defended:

- It is critical to integrate the features of infrastructure to perform auxiliary and ancillary activities that assist to normalize economic activity in the country as a vital element of the integrity of the entire economic system and an important aspect of the overall structure of economic life.

- Infrastructure becomes a critical factor for intensification and efficiency when it is integrated into the whole economic complex, enhancing the chance of investment attractiveness, economic growth, and a rise in population social welfare.

- Production and utility infrastructure systems are seen as vital to the market's normal operation and development as a set of aspects of the national economy.

- Large-scale and preventive research, the solution of major scientific and practical problems, the development of a scheme for efficient infrastructure operation, and the interaction of production infrastructure with the national economy are all required to develop the country's infrastructure in the direction of innovation.

- The creation of a production model and utility infrastructure should be prioritized.

- The development and implementation of new information technologies, as well as the development of new principles to reduce the impact of destructive natural and man-made factors, should be given special attention, as well as the coordination of the production infrastructure and information services market.

- Quality control forms and techniques for services supplied in the sector of production infrastructure must be improved.

- It is critical to build a unique management model between the state and businesses for the creation and growth of production infrastructure.

- To operate the complicated equipment of energy firms, particularly large production facilities, people with appropriate technical education are required.

- Institutional improvements in the realm of utilities infrastructure should be based on a SWOT analysis.

- The Strategic Roadmap determines objectives for attaining the primary strategic goals specified in the field of utility infrastructure - long-term, cost-effective utility regulation.

- In order to streamline the provision of utilities, it is important to establish a dedicated financial institution.

- The quality of utilities should be improved, and staff policies should be restructured.

In the utilities sector, there is a need to reform legislation

The scientific novelty of the research includes the study of activities to ensure the sustainable development of diversified economic infrastructure, detecting problems of increasing the strategic role of the state, identifying and systematizing potential opportunities to increase efficiency in this area, and improving methodological, scientific, theoretical, and applied approaches.

The scientific novelty of the dissertation consists of the following:

- The most important components of the production infrastructure have been investigated and classified;

- A model has been constructed about an interaction of production infrastructure with the economy's diversification;

- It has been established that there is a link between production infrastructure, information provision, and material production;

- A model for the development of production infrastructure management has been developed;

- The infrastructure that supports production sectors has been examined and rated;

- The energy sector's infrastructure has been analyzed and evaluated;

- The Absheron economic region's energy supply potential has been identified;

- The energy supply potential of production infrastructures has been investigated, and a method for complex infrastructure supply assessment has been proposed;

- The main directions of the SWOT analysis of the utility infrastructure of Azerbaijan Republic have been determined;

- It is proposed that the institutional strategic goals of the country's future utility infrastructure development be clarified until

2025 (See: scheme 1).

Theoretical and practical importance of the dissertation: The study's findings offer an opportunity to supplement existing efforts to strengthen the government's strategic involvement in the economy's infrastructure sector. Research-based new theoretical insights can be employed as an extra textbook in the teaching of a variety of economic disciplines. The dissertation's recommendations and scientific findings allow for the economic and organizational improvement of the country's diversified economy's infrastructure, as well as meeting and improving demand for related infrastructure services. The study's findings and recommendations can be used to establish strategically oriented concepts and laws connected to the development and enhancement of infrastructure's economic and organizational mechanisms.

Approbation and application of research results. It was submitted to the "Azerigas" PU of the State Oil Company of the of Azerbaijan, references on application of certain scientific recommendations were obtained after passing the relevant assessment stages (opinion: March 17, 2021). The primary results of the dissertation work were presented at various scientific-practical conferences, and a total of 15 scientific works, including 4 scientific publications and 1 thesis in abroad, were published based on the research findings.

Name of the organization where the dissertation work is carried out: Azerbaijan University of Architecture and Construction.

The entire volume of the dissertation, denoted by a character, as well as the volume of the dissertation's structural units separately. The dissertation is defined by the research's subject, object, goals, and objectives. An introduction, three chapters, nine paragraphs, results, a list of sources, and references make up the dissertation's structure. A total length of the dissertation is 235,797,000 characters including cover and contents (2509 characters), introduction (11 762 characters), Chapter I (80 337 characters), Chapter II (63 999 characters), Chapter III (48 816 characters), results (9705 characters), and literature used (18 699 characters). The dissertation has a total of 219 228 characters, eliminating tables, graphs, illustrations, and a reference list.

MAIN CONTENT OF THE STUDY

The importance of the topic, the purpose and objectives of the research, the subject, the main provisions of the defense, the statement of the problem, the scientific novelty and practical significance of the research, and the justification of the work are all explained and clarified in the **Introduction** to the dissertation.

The first chapter of the dissertation entitled “**Theoretical and methodological aspects of production infrastructure provision of a diversified economy**” studied the role and functions of production infrastructure in the development of diversified economy, structural features of production infrastructure systems in modern conditions, and theoretical and methodological bases of infrastructure development regulation.

Modern economic theory, as well as challenges relating to the examination of production infrastructure, are still relevant. In the late 1940s, the term “infrastructure” was first employed in the bourgeois “political economy.” Based on the study of approaches in this regard, it should be noted that the concept of “infrastructure” can be considered in several contexts. In the historical context, the concept of infrastructure is evaluated in terms of expanding and increasing material production, strengthening the social division of labor, increasing trade diversification.¹ Simultaneously, the issue of supporting the process at various phases of its growth, converting it into components of infrastructure as a whole by allocating discrete roles for service delivery, is attracting attention as a serious scientific observation and research topic.

However, the place and role of infrastructure in the process of obtaining economic efficiency has always been a priority when interpreting the content of the concept of infrastructure. The state of infrastructure has a substantial impact on the efficiency of any economic activity: the more complex the process of socialization of production, the more visible the impact of infrastructure and

¹Деминг, Э. Выход из кризиса: Новая парадигма управления людьми, системами и процессами / Э. Деминг; Пер. с англ. - 5-е изд. - М.: Альпина Пабlishер, 2012. — 419 с.

production circumstances on the state of productive forces. For many years, infrastructure, particularly production infrastructure, received little consideration in the old practice. Figure 1 depicts a broad and improved schematic of the manufacturing infrastructure used during the study.

The main task of the production infrastructure is to provide information to the relevant structures of enterprises and companies, as well as to organize repair work in accordance with regulatory requirements and prepare them for operation, estimating the wear and tear of machines, mechanisms, buildings, and structures in advance. All of these notes are feasible as a result of efficient operation and equipment maintenance in compliance with regulatory criteria.

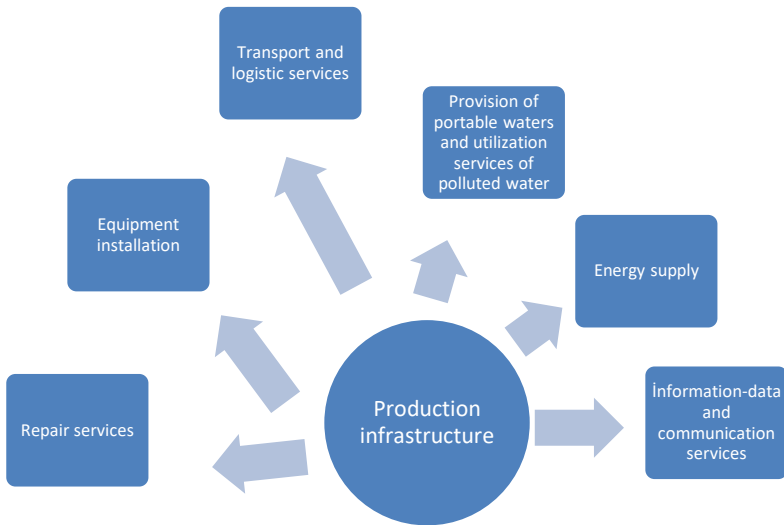


Figure 1. Components of the infrastructure of production sector of the economy²

²Figure source has been prepared by the author based on [Гончаров В.Н. Эффективность производственной инфраструктуры предприятия/ Гончаров В.Н., Бурбело О.А., Вавин А.И.- Луганск: 4-е издание, учебное пособие, Изд-во Луганск, 2012.- 167 в., р.125].

Current production infrastructure, it should be emphasized, is a complex system based on science-intensive, high-performance technological equipment, advanced equipment, and modern production management and organization methods. In this regard, the characteristics of the interpretation of important ideas that characterize the development of economic region infrastructure.

The improvement of production infrastructure's efficiency, centralization of technological means, spare parts, as well as infrastructure improvement as a result of repair work, and application of innovative technologies in transportation and warehousing operations are the main directions of development. In some circumstances, optimizing and systematizing the systemic interactions of such main and auxiliary tasks allows them to be interchanged.

The dissertation's second chapter, "**Assessment of the current state and development of a diversified economy in Azerbaijan**" examines the current state and prospects of development of the national economy's production infrastructure, analysis of utility dynamics, and evaluation of existing potential in energy supply infrastructure.

The existing state of infrastructure development and development dynamics must be consistent with the present level of development of areas and the level of integrated development of territories, and must frequently exceed those levels. This situation allows the economy to produce competitive products and provide services. It should be noted that the low level of development of market infrastructure in some countries hinders the growth of the competitiveness of their economies.

Accordingly, it would be expedient to consider the dynamics of commissioning of the main utility infrastructure facilities in the Republic of Azerbaijan. The dynamics of the commissioning of key facilities in the field of utility infrastructure in the Republic of Azerbaijan is reflected in diagram 1.

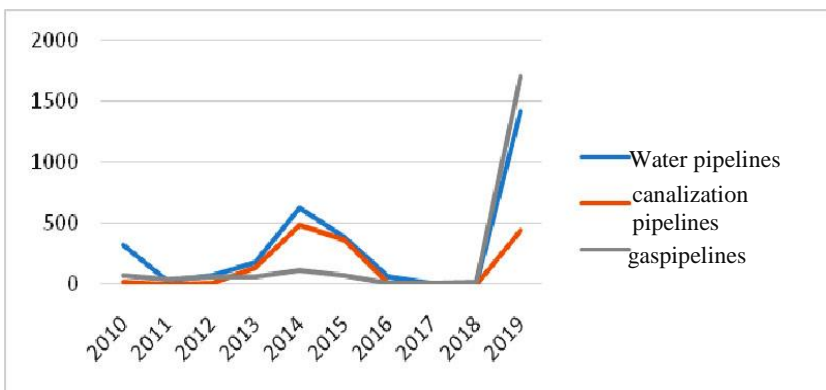


Diagram 1. Commissioning of utilities (kilometers)³

The data presented once again demonstrate a downward trend in utility commissioning in the Republic of Azerbaijan.

Positive dynamics has been observed only since 2012 in the construction of railways, runways and oil pipelines. Monitoring of the results of the implementation of the Strategic Road Map for the Development of Utilities (electricity and heating, water, gas) in the Republic of Azerbaijan was announced in 2019.

It should be noted that this Strategic Roadmap consists of 7 strategic goals and the overall level of implementation is 68%. 55% of the measures envisaged in the Strategic Road Map in 2019 have been implemented, 25% has been partially implemented, and 20% has not been implemented.

The first goal of the Strategic Roadmap is to regulate the utilities sector in order to secure its long-term viability and efficiency, and 91 percent of the measures have been implemented so far, with the remaining 9% yet to be completed. The Presidential Decree dated December 22, 2017 established the “Energy Regulatory Agency” as a public legal organization under Ministry of Energy of the Republic of Azerbaijan in order to fulfil this strategic goal. Regulation and coordination relations between producers, transmitters, distributors, suppliers, and consumers in the fields of electricity, heating energy,

³Official web portal of the State Statistical Committee of the Republic of Azerbaijan
<https://www.stat.gov.az/source/construction/az/3.30.xls>

and gas supply in the country, analysis of production and economic activities of enterprises, submission of rational proposals in connection with measures to modernize the existing structure, development mechanisms in the field of investment attractiveness, and facilitating the control of engineering-communication support systems compliance and service quality criteria are some of the main responsibilities of this body.⁴

The sixth strategic aim of the Strategic Road Map, “Reduction of losses and assuring water supply efficiency,” has been implemented 50%, with the planned measures implemented 50%. An action plan for the development of poor infrastructure for water supply and sanitation in the Absheron Peninsula has been designed and launched as part of the implementation of steps in this regard. Simultaneously, the required infrastructure investment expenses for 2018-2028 have been identified.

But it should be noted that, according to official figures, natural gas was given to 95.2 percent of the population of the Republic of Azerbaijan in 2018⁵.

The pace of engineering projects relating to the country's gasification has slowed as a result of this. In general, 98% of engineering networks in the country have been renewed. It is planned to carry out design work for repair and construction in Baku's suburbs in the near future.

The President of the Republic of Azerbaijan's decree on further steps connected to the restoration of water supply and sewage networks in Zira and Turkan settlements of Baku's Khazar district, as well as Pirallahi village of Baku's Pirallahi district, are notable examples.⁶

The dissertation's third chapter, “**Directions for Improving the Infrastructure of the Diversified Economy**,” looks at topics like developing strategies for the development of production infrastructure

⁴Official website of the Ministry of Energy of the Republic of Azerbaijan, <https://minenergy.gov.az/az/ministry/nazirliyin-tabeliyinde-olan-qurumlar>

⁵“Turan” information agency.

⁶ Web portal of normative legal acts of the Ministry of Justice of the Republic of Azerbaijan <http://www.e-qanun.az/framework/37145>

systems in the country and applying forecasts, improving production infrastructure regulation, and the main directions of institutional reforms in public utilities. The results are summarized.

Infrastructure is one of the important components of any economic system. Infrastructure helps the normal operation of the economic sector and has an auxiliary character as an inherent aspect of general economic life.

Production infrastructure is the embodiment of the process of forming an existing model of production and economic policy, which provides the national and regional economy with socio-economic policy at the national and regional levels. It is possible to make certain judgments about the level of development of the national and regional economy in accordance with the level of development of production infrastructure.

1. It is vital to undertake study on management issues in this area in order to design appropriate development strategies for the development of production infrastructure.

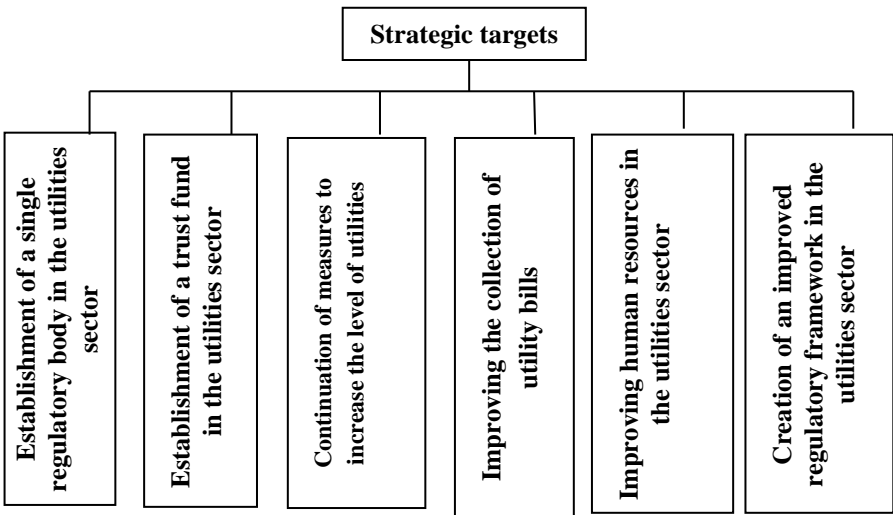
2. Water, heating, and electricity supply pipelines, power lines, water treatment plants, sewage lines, and other production and property facilities make up the utility infrastructure system. Utility infrastructure facilities are positioned within municipal boundaries and provide housing and community services to the residents of these municipalities.

3. Utility infrastructure also attracts attention as a set of consumer services related to people's livelihoods.

According to the study, the country has a lot of potential for utility infrastructure expansion. The main focus here is the provision of resources required for the functioning of communal infrastructure, as well as the necessity to raise demand for these infrastructure amenities on a continuous basis. Institutional changes occupy a unique position among the actions that must be implemented in order to make the most of available opportunities. These are mostly relevant to the utility infrastructure modernization management methodology based on innovations. The following are the main directions for institutional reforms in the utility infrastructure: increasing the role of local self-government in the management of housing and utility services;

increasing the independence and responsibility of economic entities on various forms of ownership; and transferring the management of communal infrastructure economy to the organization of owner-user relations including the organization of rational function distribution

It should be noted that the Strategic Road Map sets out a number of institutional goals in the field of utility infrastructure. However, it would be expedient to refine these targets accordingly (see Scheme 1.).



Scheme 1. Institutional strategic goals for the development of utility infrastructure in the Republic of Azerbaijan until 2025.⁷

The key strategic goal is to ensure that the utilities industry is regulated in a way that is both sustainable and efficient. Priorities have been established in this regard. The construction of an independent regulatory agency and a trust fund, as well as the construction of effective service and recruitment processes and staffing, are all top priorities. At the same time, the strategic goal’s priorities have been established in the following order: Establishment of a single

⁷Source: Scheme it has been developed by the author.

regulatory body in the utilities sector; Consideration of the establishment of a trust fund in the utilities sector; Continuation of measures to increase the level of utilities; Improving the collection of utility bills; Improving human resources in the utilities sector; Creation of an improved regulatory framework in the utilities sector.

Scientific and practical suggestions and recommendations originating from the nature of the research might be grouped in this way in the “Results” part of the dissertation:

1. There is a need to maintain and transport stocks in the form of live and manifested aggregate public labor, means of production, and consumer products depending on the level of development of production and the increase in the number of finished goods, commodity stocks. It's worth noting that they have exited the manufacturing process but have not yet entered the field of consumption. Product turnover is a process that connects the successive links of production, occurs as a result of the social division of labor, and is one of its most significant criteria.

2. The infrastructure's subsystems have several common traits and characteristics. Their common characteristics and qualities are shaped by the goals and objectives:

- Achieving the effects of the production infrastructure in the production and economic complexes of the country and regions, not in itself;

- Achieving preventive development impacts of production infrastructure in comparison to the major production area;

- Inseparability of processes of production and consumption of infrastructure products, the impossibility of its collection, storage, and warehousing requires the creation of the necessary forces.

3. In our opinion, infrastructure is an integrated concept that combines many areas and types of activities, each of which performs one or another function to meet the needs of society in infrastructure services. The diversity of infrastructure services is due to the diversity of needs, goals and objectives in society. The infrastructure's operation is linked to meeting these needs and achieving goals and objectives.

4. It is worth noting that the infrastructure sector arose as a result of the social division of labor becoming more rigid. Increased

productivity in material production permits the sector to develop further, allowing resources to be attracted for the production of spiritual goods and services.

5. According to research, the following assessment parameters are used to analyze the endogenous basis for the growth of infrastructure, particularly industrial infrastructure, in a diversified economy: the amount of investment in own funds; ratios of investments from own funds to external investments; ratio of bank loans to investments made from the profits of enterprises; the ratio of investment investments of enterprises from their own funds to investments from the regional budget, etc.

6. The realization of scientific and technological advancement in production necessitates the improvement of various aspects of production infrastructure, without which economic growth will be difficult to achieve. At the same time, the formation of production infrastructure must be formed before the emergence of an industry that meets the needs of the whole economy.

7. It is proposed to complete the functions of production infrastructure in the regions with the following:

- Reduction and distribution of risks to the development of the economy in the regions;
- Creation of appropriate conditions for the application of economic mechanisms for self-regulation of the production sphere of the region;
- Provision of necessary services for production entities and social facilities;
- Activation of interaction and development processes of various economic entities of the region.

8. Solving a number of problems in the context of transformations, formation of management structures, the regulation of infrastructure networks on international and domestic routes, the extension and coordination of activities of all market participants (cargo owners, consignors, consignees, carriers), forwarders, customs brokers, finance and credit companies, and insurance companies are all required to solve problems in the context of modernization processes.

9. When looking at the challenges of production and utility infrastructure development, it is easy to conclude that this sector solely served the demands and requirements of the national economy. However, there are a number of critical challenges in the development of infrastructure, which cannot be solved within the framework of traditional management approaches, as an undeniable fact that should be underlined in particular. We propose to implement the individual problems of infrastructure in the development and implementation of state and regional development concepts, taking into account the geoeconomic potential.

10. In modern times, the dynamics of government expenditure on the economy, production, and utility infrastructure are influenced by a number of connected issues. The expansion of economic links and sectors is responsible for their growth. Technological advances dictate new demands on all production, infrastructure, economy and the state. Based on the summary of the research, it can be concluded that economic conditions are changing, and therefore the state's participation in regulating the production and utility infrastructure will change.

11. The analysis showed that the coefficient of internal supply of energy resources in the Absheron economic region corresponds to the production of energy resources in the economic region (in 2018 it was equal to 3.2). This economic region in Azerbaijan is the most suitable economic region for the placement of energy-intensive enterprises. Major firms are located in this economic zone; nevertheless, a large portion of the output of low-cost electricity-producing firms are not in demand within the economic zone and must be transferred outside the region. It is also required to reorganize Azerbaijan's energy market in order to completely comply with all of these requirements. Allowing energy providers and consumers to enter into direct contracts in the additional regional power market is the most important reform initiative here.

12. As a result of research, a comprehensive approach to assessing the state of production and utility infrastructure was proposed including increasing the role of certain production and utility

infrastructure facilities in economic activities and, finally, a rational method for assessing their quantity and quality.

13. The potential of the national economy and the country's regions is criteria that may be used to measure infrastructure performance and development plan. For this, three categories of indicators have been used. Direct resources are in the first group, capacity development indicators are in the second group, and indicators that reflect the national economy's productive potential are in the third group.

14. It should be mentioned that there are no universal or clear criteria for evaluating the efficiency of state regulation as an expression of national interests. Each country handles this responsibility in its own way. One of the most severe challenges in the Republic of Azerbaijan is governmental regulation, which includes production and utility infrastructure regulation. Quality indicators should be identified at the very least, as the successes and failures of state regulation should be based on these indicators.

15. Institutional adjustments are also essential to meet the country's and regional economy's strategic goals. The latter, in turn, is dependent on macroeconomic considerations, as well as the economy's characteristics and priorities. The goals of institutional reform should be as follows: monitoring of acceptable indicators in the areas of stabilization and development of utility infrastructure facilities for the country's and region's structural transformation in the next 2-3 years; creating circumstances for the sensible exploitation of existing capacity, based on a strong institutional management framework; establishing a market environment and creating conditions for the functioning of modern state regulation mechanisms..

16. According to our findings, utility infrastructure attracts attention as a collection of consumer services relevant to the supply of people's livelihoods. There are two main features of utility infrastructure. The first characteristic is a functional feature. This feature has to do with the property's, infrastructure objects, purpose and how it is used. The second feature is related to the location of the infrastructure facility. The reasons for the management of utility infrastructure can be divided into three categories (the principle of

market regulation; the principle of social regulation; the principle of strategic development). Over the last 15-16 years, Azerbaijan has paid special attention to the development of the infrastructure. Simultaneously, the Strategic Roadmap should give special attention to enhancing the mechanisms for achieving strategic goals associated with institutional reforms in the area of utility infrastructure development.

The main content of the dissertation has been reflected in the following scientific works:

1. Müasir dövrdə istehsal infrastrukturunun mahiyyəti və funksiyaları. AzMİU. Tikintinin iqtisadiyyatı və menecment. Elmi-praktiki jurnal. Bakı № 5, 2018. Səh. 36-41.

2. İstehsal infrastrukturunun xüsusiyyətləri milli iqtisadiyyatın diversifikasiyasının hədəfi kimi. AzMİU. Azərbaycanda iqtisadi islahatların həyata keçirilməsinin aktual problemləri mövzusunda respublika elmi-praktik konfransın materialları. Bakı 19 dekabr 2018. Səh. 77-80.

3. Формирование стратегии развития систем производственной инфраструктуры в Азербайджане и применение прогнозов ее развития. Экономика и предпринимательство. Москва, № 2 (103) РФ. 2019 г. с. 569-574.

4. Функции и содержание производственной инфраструктуры в условиях развития диверсифицированной экономики Азербайджана. Журнал Российское предпринимательство, Москва, № 2(298), Февраль 2019, стр. 511-525.

5. Milli iqtisadiyyatın infrastruktur təminatının dinamikası. AzMİU. Tikintinin iqtisadiyyatı və menecment. № 2, Bakı 2019. Səh. 100-109.

6. İstehsal infrastrukturunun fəaliyyətinin tənzimlənməsinin səmərəliyinin dəyərləndirilməsi metodikası. AMEA. İqtisadiyyat İnstitutu. «Elmi əsərlər» - № 3- 2019. Səh. 62-67.

7. Müasir şəraitdə infrastruktur sistemlərinin əsas inkişaf meylləri. Kooperasiya – elmi-praktiki jurnal. “Azərıtıfəq”, Azərbaycan Kooperasiya Universiteti, Kooperasiya – elmi-praktiki jurnal.

“Azərıtıfıaq”, Azərbaıycan Koooperasıya Unıversıtetı, № 3 (54), Bakı 2019. Səh. 210-216.

8. Kommunal infrastruktur sahəsində institusional islahatların əsas istıqamətləri. AzMİU. Tikıntının iqtıسادıyyatı və menecment. № 3, Bakı 2019. Səh. 48-55.

9. Şaxələndırmə strategıyasının regional sosial-iqtıسادı sistemlərinin inkişafının sürətləndırılməsində rolu. “Şaxələndırılmıř iqtıسادıyyatın infrastruktur təminatı: əsas meyllər və inkişaf istıqamətləri” mövzusunda beynəlxalq elmi konfrans. Bakı -2019.

10. Сущность, элементы и основные функции производственной инфраструктуры. Инновационные подходы в современной науке. Сборник статей по материалам LXIV международной научно-практической конференции. № 4(64). Москва, 2020. Стр.59-63.

11. Особенности организации инфраструктуры в условиях диверсификации национальной экономики. Экономика та Держава. Украина. международной научно-практический журнал. № 1. Стр. 87-91.

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