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ANNUAL REPORT

2024

ENERGY, WATER SERVICES AND
MUNICIPAL WASTE MANAGEMENT
SERVICES REGULATORY COMMISSION
OF THE REPUBLIC OF NORTH MACEDONIA

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2024

Energy, water services and municipal waste management services

Regulatory Commission of the Republic of North Macedonia

Annual Report

The Annual Report on operations of the Energy, Water Services and Municipal Waste Regulatory Commission of the Republic of North Macedonia in 2024, prepared in line with Article 36 of the Law on Energy* ("Official Gazette of the Republic of Macedonia" No. no. 96/18 and ''Official Gazette of the Republic of North Macedonia'' no. 96/19, 236/134/24 and 147/24) was submitted to the Assembly of the Republic of North Macedonia on 29th April 2025.

Terms of Use

The data presented in the Annual Report of ERC for the year of 2024, were acquired by the MM-Central Information System for monitoring energy markets functioning, and from other reports submitted to the Energy, Water Services, and Waste Management Services Regulatory Commission of the Republic of North Macedonia.

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FOREWORD

Distinguished,

In front of you have the detailed image of the country, but also an illustration of the situation with the water services in the past 2024. This exceptionally yielding document accompanied with charts, analytically processed by sectors, is the base and roadmap for defining the future energy policies and development measures.

In 2024 for the first time the power plants using renewable energy sources dominate in the electricity sector with share of 55.72% of the total installed capacity. It is important to mention that for the first time even the installed capacity of the photovoltaic power plants (28.40%) is larger than the installed capacity of the hydro power plants (24.13%). In times of increased investments in renewable energy sources, it is important to create preconditions that will stimulate construction of energy capacities thus providing balance energy. Moreover, with the possibility of placing electricity storage devices (batteries), the energy stability of the country will be reinforced.

One of the significant activities in the sector for natural gas was the completion of the certification of the Natural Gas Transmission System Operator of the Republic of North Macedonia, the state-owned Joint Stock Company for the Performance of Energy Activity Natural Gas Transmission NOMAGAS Skopje.

In 2024 on the district heating market the procedure for issuance of licenses to the company for supply with steam and hot water JSC ENERGY LINK Skopje (former Toplana Skopje Sever) started.

Finally, the sector for which I want to speak in more detail in this report is the sector of water services. The Energy Regulatory Commission conducts the procedure for regulating the prices of water services in accordance with the Law on Determining Prices of Water Services and thus contributes to the continuous development of the water services sector in the Republic of North Macedonia. The measures provided for water service providers enable effective and efficient management of the supply of raw water intended for water supply to the population, the collection and disposal of urban wastewater and the treatment of wastewater. The purpose of regulating water service prices is to reform the existing water services sector, whereby water service providers are expected to make significant changes in terms of organizational, management, financial and operational aspects of their operations. By establishing certain measures and providing guidelines for their operations, water service providers are enabled to develop sustainably and self-finance future investment projects through which the quality of water services is improved.

From international aspect, the Energy, Water Services and Municipal Waste Services Regulatory Commission of the Republic of North Macedonia remains involved in all relevant international organizations, thus enabling upgrading and reinforcement of its capacities. The election of Andrijana Nelkova-Chuchuk as Chair of the Energy Regulators Regional Association - ERRA, with a mandate of two years, is a confirmation of the highly professional staff, which is at disposal of the Energy Regulatory Commission, recognized internationally.

In mid-2024, the Energy Regulatory Commission organized and hosted the 32nd General Assembly of the Association of European Water Regulators (WAREG), where representatives from 35 European regulatory bodies that provide protection for more than 400 million consumers discussed the possibility of solving the problem - reducing water losses.

In the forthcoming period we are expecting the adoption of the new Law on Energy, followed by harmonization of the bylaws which are adopted/approved by the Energy Regulatory Commission, and all with the purpose of continuing the safe and secure functioning of the energy markets.

Cordially,

Marko Bislimoski

President of the Energy, Water Services and Municipal Waste Management Services Regulatory Commission of the Republic of North Macedonia

The Energy Water Services and Municipal Waste Management Services Regulatory Commission of the Republic of North Macedonia (hereinafter: Energy Regulatory Commission) is an sole, non-profit regulatory body regulating and controlling the manner of performing energy activities in the following fields: electricity, natural gas, district heating, crude oil, oil derivatives and transportation fuels, and it also sets the tariffs on water services and municipal waste management services.

The institution is independent in maintaining operations and decision-making processes within its competencies, and is in capacity of a legal entity, which is separated and functionally independent regarding the organization and decision-making from the bodies of the state and local authorities, and the entities performing energy activities.

The Energy Regulatory Commission, at least once a year, reports for its work to the Assembly, the Government of the Republic of North Macedonia, the Ministry for Energy, Mining and Mineral resources, as well as to the Energy Community Secretariat.

The competencies of the Energy Regulatory Commission are regulated by the Law on Energy* ("Official Gazette of the Republic of Macedonia" 96/19 and 236/19), the Law on Setting Water Services Prices ("Official Gazette of the Republic of Macedonia" no. 7/16), Law on Waste Management ("Official Gazette of the Republic of North Macedonia" no. no. 96/18 and ''Official Gazette of the Republic of North Macedonia'' no. 96/19, 236/22, 134/24 and 147/24), the Law on Setting Water Services Prices ("Official Gazette of the Republic of Macedonia" no. 7/16), Law on Waste Management ("Official Gazette of the Republic of North Macedonia" no. 216/21), other by-laws, and the Statute and its Rules of Procedure. The acts of the Energy Regulatory Commission are published in the Official Gazette of the Republic of North Macedonia" and on the webpage of the Energy Regulatory Commission https://www.erc.org.mk/default.aspx.

MEMBERS OF THE ERC

M.Sc. Marko Bislimoski, President

M.Sc. Lirim Sulejmani, Vice-President

M.Sc. Aleksandar Chebotarev, member

Faton Ambari, member

M.Sc. Elena Markova Velinova, member

Ifran Shaqiri, PhD, member

Atanasko Tuneski, PhD, member

April 2025

RESUME

The Energy Regulatory Commission is independent in its operation and decision-making, and with regards to the regulation of energy activities, water service prices and the price for municipal waste management, it operates within the frames set in the Law on Energy*, the Law on Setting Prices on Water Service, the Law on Waste Management and the regulations adopted based on these laws and in line with the principles of objectivity, transparency and non-discrimination, by applying the best international practices and experiences. In 2024 the Energy Regulatory Commission continued with its key mission i.e., to enable safe and continuous energy supply for all consumers on the domestic markets.

In 2024 a regular internal control was conducted over the quality management system, as well as regular annual control by external auditors from a certified body over the procedures within the Quality Management System and their realization pursuant to the standard, and it was concluded that the Energy Regulatory Commission meets all criteria to continue its certification in line with the standard ISO 9001:2015. The certificate confirms the quality of operations of the Energy Regulatory Commission while, at the same time, it presents a roadmap for continuous advancement of the services and meeting the needs and requests coming from the consumers, energy activities licenses holders and the enterprises providing water services. Furthermore, the Energy Regulatory Commission introduced and implemented the ISO 27001 Information Security Management Systems Standard, and its certification shall be completed in 2025.

During 2024 the electricity market was stable. In 2024, less than half of the total consumption of electricity, i.e., 49.84% of the needs were secured at the open electricity market as the result of the gradual restoration of trust in the electricity suppliers, as well as the more favourable offers. The national electricity market operator for the time period of day-ahead, managed by the operator of the organize electricity market, MEMO DOOEL, Skopje, continued its operation and at the end of December 2024 it had 37 registered companies for participation at the day-ahead market. The total trading in electricity at the day-ahead market in 2024 was 969,554.7 MWh. In the course of 2024, the number of active electricity suppliers was 21, and they supplied the consumers for prices which were formed freely at the electricity market. This means that the electricity market maintains the competitiveness and the consumers receive offers from the suppliers/traders. The market activities were such that the electricity consumers who are not part of the small consumers category had prices which were by 8.56% lower than the average prices for this category of consumers compared to 2023.

EVN HOME DOO Skopje, being the universal supplier and the last resort electricity supplier in 2024 supplied households and small consumers who did not select a supplier at the liberalized market, decided to use the universal supplier or due to certain circumstances, remained without electricity supplier. The greatest share of electricity sale of EVN HOME DOO Skopje in 2024, 88.83% comes from the category of households, whereas 11.17% comes from the sale to the small consumers. The Energy Regulatory Commission does not have the legal authority to form selling prices for electricity, i.e., the universal electricity supplier forms the selling prices for electricity while the Energy Regulatory Commission follows the application of the tariff system based on which these prices are defined.

The total installed capacity of electricity power-plants in 2,983.9 MW; in 2024 new electricity producers joined with installed capacity of 351.3 MW i.e., the total production capacity has increased by 13.35% compared to 2023. For the first time the electricity power-plants using renewables, including the large hydro power-plants, dominate the total installed

capacity i.e., their share in 2024 was 55.72%. The greatest part of the new producers are photovoltaic power-plants with total installed capacity of 341.5 MW, and they come second compared to their share in the total installed capacity in 2024. The thermal power-plants have share of 34.65%, followed by the photo-voltaic power-plants with 28.40%, hydro power-plants with 24.13% and cogeneration electricity and district heating production power-plants with 9.63%. All other come to a share of 3.19%.

In 2024 the total domestic production of electricity amounts to 6,129 GwH and is by 6.47% lower compared to 2023, but also 8.79% higher compared to 2022. Domestic electricity production accounts for 88.97% of gross electricity consumption, while 11.03% is provided by imports. The total production of electricity from renewable energy resources accounts for 41.03%. The most remarkable is the increase in electricity production from photovoltaic power plants of 186% in 2024 compared to 2023, i.e. it amounts to 853 GWh.

In 2024, there is also an increase in the number of prosumers (by number of metering points), i.e. it amounts to 1,598, of which 785 are legal entities, while 813 belong to the household group, and their total installed capacity is 25 MW. The total electricity transmitted by prosumers to the distribution system amounts to 12.3 GWh, which is an increase of 90% compared to 2023.

The natural gas market in the Republic of North Macedonia has been fully liberalized since 2015, which allows free price formation by market participants. The Energy Regulatory Commission only sets tariffs for the regulated energy activities of transmission and distribution of natural gas. However, the natural gas market remains underdeveloped, with relatively low natural gas consumption and a small number of active natural gas traders and suppliers. Since the beginning of 2023, the capacity of the interconnector to Bulgaria has increased, enabling greater competitiveness in the natural gas market. During 2024, the natural gas transmission system operated by the state-owned Joint Stock Company for Energy Activity Natural Gas Transmission NOMAGAS Skopje transmitted 3,735,851,163 kWh of natural gas, which is approximately at the level of consumption from last year. Co-generation power plants, as well as district heating plants, have a dominant share of 85% in natural gas consumption in North Macedonia. They are immediately followed by industrial consumers, primarily from the metal industry, connected to the transmission system, with a 13% share in consumption of natural gas, while the share of consumption within the natural gas distribution systems in 2024 is 2%. Following the drastic increase in natural gas prices in 2022, there was decline in 2023 and 2024. The final prices for all categories of consumers on the retail market for 2024 are on average in the range of 45 to 80 EUR/MWh and are almost half lower than in 2023. One of the significant activities that was implemented in 2024 is the certification of the Natural Gas Transmission System Operator of the Republic of North Macedonia, the state-owned Joint Stock Company for the Performance of Energy Activity Natural Gas Transmission NOMAGAS Skopje.

One of the activities that took place on the district heating market in 2024 were the submitted applications for issuance of licenses for performing the energy activities of regulated production, distribution and supply of district heating energy to the Steam and Hot Water Supply Company ENERGY ECOLINK AD Skopje (formerly known as Toplana Skopje Sever) in November 2024, after which the procedure continued during 2025. On 27 February 2025 the Energy Regulatory Commission issued a license for performance of energy activity - regulated production of district heating and license for performing energy activity - supply with district heating, whereas, when it comes to the submitted request for issuance of license for performance of the energy activity distribution of district heating to JSC ENERGY ECOLINC, Skopje, a Decision was made for termination of the procedure. In July 2024, the Energy

Regulatory Commission adopted Decisions on determining the regulated maximum revenue and tariffs for 2024, which reduced the price of district heating for households and other consumers by an average of 17%, but if we take into account that in the previous period the price of district heating was subsidized by the Government of the Republic of North Macedonia due to the energy crisis, the effective reduction for consumers is 3% because it is no longer subsidized as of August 2024.

According to legal provisions, the market for crude oil, oil derivatives, biofuels and transport fuels in the Republic of North Macedonia is carried out through the import and export of crude oil and oil products, transport of crude oil through a product pipeline/oil pipeline, processing of crude oil, production of oil products, production of biofuel, as well as distribution and sale of oil products. Oil prices in 2024 were strongly influenced by Chinese demand and tensions in the Middle East, while American shale producers consolidated and remained cautious in terms of production growth. Oil prices fell by about 3% in 2024. The trend in the price movements of crude oil and oil derivatives on world stock exchanges was directly reflected in the price decisions made by the Energy Regulatory Commission. Since March 2022, the Energy Regulatory Commission has been calculating daily and determining whether conditions have been created for adopting a Decision to determine the highest retail prices for individual oil derivatives, in accordance with current developments in the oil and oil derivatives market, i.e. the daily increase or decrease in the stock prices of oil derivatives on the London Stock Exchange and/or the increase or decrease in the exchange rate of the US dollar against the denar. This approach ensures security, stability and predictability in the oil derivatives market, with the sole aim of protecting consumers from large price fluctuations. During 2024, the Energy Regulatory Commission adopted 76 decisions to determine the highest retail prices for individual oil derivatives and transport fuels.

The procurement and sale of petroleum derivatives in the Republic of North Macedonia, during 2024, was actively carried out by 18 legal entities licensed for wholesale trade in crude oil, petroleum derivatives, biofuels and transport fuels. The total imported amounts of petroleum derivatives in the Republic of North Macedonia in 2024 reached 1,313,693 tons, which is by 2.65% less compared to the imported oil derivatives in 2023. The growth in import of jet fuel of 32.75% is significant compared to 2023, and there is increase also in the import of gasoline and diesel fuels in 2024. There was a significant decrease in the import of fuel oil in 2024 of 49.71%, extra light fuel (EL-1) and liquefied petroleum gas (LPG), compared to 2023. Sales of petroleum derivatives on the domestic market in 2024 amounted to 964,886 tons, which is a decrease of 4.21% compared to sales of petroleum derivatives in 2023. The consumption of petroleum derivatives on the domestic market in 2024 is dominated by diesel fuels with 73.95%, unleaded gasoline with a share of 11.37%, fuel oil with 7.01% and liquefied petroleum gas with 5.29%. The export of petroleum derivatives in 2024 amounted to 330,673 tons, and compared to 2023 (346,463 tons) it decreased by 4.56%. In 2024, diesel fuel was the most exported, i.e. 48.32% of total exports, followed by jet fuel with 29.90%, motor gasoline with 18.50% and fuel oil with 3.28%.

The Law on Determining Prices for Water Services regulates the regulation of prices for water services, i.e. the determination of tariffs for water services - supply of raw water intended for water supply to the population, water supply, collection and disposal of urban wastewater and wastewater treatment. The procedure for determining tariffs for water services is carried out by the Energy Regulatory Commission and thus contributes to the continuous development of the water services sector in the Republic of North Macedonia, i.e. through the measures provided for water service providers, it enables effective and efficient management of the supply of raw water intended for water supply to the population, water supply, collection and disposal of urban wastewater and wastewater treatment. The

provision of water services in 2024 in the Republic of North Macedonia is carried out by 79 water service providers, of which eight supply raw water intended for water supply to the population, 68 provide water supply, i.e. supply of drinking water, 57 collect and discharge urban wastewater and 20 provide wastewater treatment. The average water consumption for households in 2024 remains one of the key parameters in the work of water service providers and ranges on average between 3.15 and 27.86 m³/household/month, depending on the water service provider. According to the latest available data, the average water consumption in 2024 at the level of the Republic of North Macedonia is 12.92 m³/household/month.

During 2024, the Energy Regulatory Commission, in accordance with the authorizations set out in the Law on Energy*, adopted: three general acts, three legal acts, two acts in the field of electricity, three in the field of natural gas, one in the field of district heating and two in the field of oil derivatives, and approved 21 legal acts of energy business operators, of which 11 acts are in the field of electricity, eight in the field of natural gas and one in the field of thermal energy. During 2024, the Energy Regulatory Commission issued 355 licenses for performing energy activities, of which 351 were for performing energy activities in the field of electricity, three in the field of natural gas and one in the field of oil derivatives. Of a total of 520 decision-making procedures on complaints initiated within the Energy Regulatory Commission, in 2024 134 were accepted, 196 were rejected, dismissed or terminated, and for 190 complaints the procedure continued in 2025. Out of a total of 323 procedures for handling complaints submitted to the Energy Regulatory Commission in 2024, 302 were processed in 2024, and for 21 complaints, 14 of which were in the field of electricity and seven in the field of heat energy, the procedure continued in 2025. During 2024, 17 requests for free access to public information were submitted to the Energy Regulatory Commission, of which six were requests for information that the Energy Regulatory Commission does not possess and they were forwarded to the holders of the information; 10 were responded to positively, and one request was processed in accordance with Article 23 of the Law on Free Access to Public Information. The Energy Regulatory Commission, in accordance with the Plan for Supervision of Licensees for 2024, supervised the operations of a total of 15 licensees for performing energy activities, of which six licensees in the field of electricity, three licensees in the field of wholesale trade in crude oil, oil derivatives, biofuels and transport fuels, five licensees in the field of natural gas and one licensee in the field of district heating. The REMIT registry, which continued to be updated in 2024, registered 81 participants in the wholesale energy markets for electricity and natural gas.

The Energy Regulatory Commission had another successful year internationally, through active participation in the work of existing international associations and their working bodies in the field of energy and water services. In 2024, the Energy Regulatory Commission actively worked to fulfil its obligations under the Treaty Establishing the Energy Community, through harmonization of the regulatory framework, participation in working groups and exchange of experiences and best practices. The President of the Energy Regulatory Commission, Marko Bislimoski, presided over the Energy Community Regulatory Board (ECRB) until the completion of his second mandate in June 2024. In 2024 the Energy Regulatory Commission actively participated in the activities of the Energy Regulators Regional Association (ERRA) as part of ERRA's Presidium, the working groups, as well as in professional trainings and conferences in the area of energy. In May 2024 Andrijana Nelkova-Chuchuk was elected Chair of the Association and thus, the Energy Regulatory Commission had the honour of presiding over ERRA in the next two years. The Energy Regulatory Commission is an observer in the Working Group for Electricity within the Agency for the Cooperation of Energy Regulators (ACER) and has its representative as participant in the

Working Group for Electricity. The European Water Regulators (WAREG), of which the Energy Regulatory Commission is a full member, held a large number of activities during 2024 with the active participation of representatives of the ERC. Within the framework of the regular assemblies of the European Water Regulators WAREG, the 32nd Assembly was held on 19 June 2024 in Skopje, and the Energy Regulatory Commission was the organizer and host of this event. As of June 2023, the Energy Regulatory Commission has been a full member of the Mediterranean Energy Regulators (MEDREG). The Energy Regulatory Commission, as the founder of the Balkan Energy School (BES), during 2024 participated in the work both in the organizational positioning and functioning, but also in working meetings related to topics in the area of energy.

Pursuant to the Law on Energy*, the Energy Regulatory Commission is funded by its own sources of funds secured by: collection of fees for issuing licenses for performing energy activities, i.e. for registration in the register of foreign traders and suppliers of electricity and natural gas that can perform activities in the Republic of North Macedonia; fees from the procedure for determining tariffs for water services, i.e. regulatory tariff for water services; collection of an annual fee from holders of licenses for performing energy activities and foreign companies that perform energy activities in the Republic of North Macedonia and a special annual fee determined as a percentage of the annual income of water service providers, generated from the provision of water services. In order to exercise its powers, the Energy Regulatory Commission in 2024 has realized expenditures in the amount of 108,242,865 denars, which are 47.02% lower than planned. This reduction is due to the rational, efficient and effective operation of the Energy Regulatory Commission.

By Decision of the Assembly of the Republic of North Macedonia in August 2024, a new member of the Energy Regulatory Commission was appointed with a mandate of five years, while in April 2025, two more new members of the Energy Regulatory Commission were appointed with a mandate of five years. The total number of employees in the Energy Regulatory Commission is 43 people, of which seven are members of the Energy Regulatory Commission, 34 people are in the professional and administrative services and two are employed as support and technical personnel.

INSTITUTIONAL DEVELOPMENT

2024

I. INSTITUTIONAL DEVELOPMENT

1.1 ORGANIZATION

The Energy Regulatory Commission is composed by five members, one as President. Following the proposal by the Government of the Republic of North Macedonia, the members and the President of the Energy Regulatory Commission are nominated and dismissed by the Assembly of the Republic of North Macedonia, considering respective and equal participation of representatives from all communities.

The organizational structure and competencies of the Energy Regulatory Commission follow the regulatory bodies in the neighbouring countries and the region and correspond to the requirements for complete and full accomplishment of its obligations, as well as the level of energy markets development in the Republic of North Macedonia.

Professional, administrative, and technical assistance operations in the Energy Regulatory Commission are performed in line with the Rulebook on Internal Organization of the Energy Regulatory Commission via the following organization units (departments and units):

1. **Electricity Department**
   - 1.1 Unit on Electricity Market
   - 1.2 Unit on Grid Infrastructure, Renewable Sources And User Relations
2. **Natural Gas, Liquid Fuels and District Heating Department**
   - 2.1 Unit on Grid Infrastructure, Renewable Sources And User Relations
   - 2.2 Unit on Grid Infrastructure, Renewable Sources And User Relations
3. **Water Services and Waste Management Department**
   - 3.1 Unit on Economic Affairs in the Field of Water Services and Waste Management
   - 3.2 Unit on Technical Affairs in the Field of Water Services and Waste Management.
4. **Legal Department**
   - 4.1 Unit on Legal Affairs and Licenses in the Field of Electricity
   - 4.2 Unit on Legal Affairs and Licenses in the Field of Natural Gas, Liquefied Fuels, District Heating, and Waste Management
5. **Economic Department**
   - 5.1 Unit on Economic Affairs in the Field of Electricity
   - 5.2 Unit on Economic Affairs in the Fields of Natural Gas, Liquid Fuels and District Heating

6. Monitoring, Investigations, and Misdemeanour Department

6.1 Unit on Energy Markets Monitoring, Analyses and Publications,

6.2 Unit on Investigations and Misdemeanours

7. Department for Information Technology and Statistics

7.1 Unit on IT Support

7.2 Unit on Software Program Development.

8. Human Resources, Logistics, Finance and General Affairs Department

8.1 Unit on Human Resources and General Affairs Management Accounting Affairs

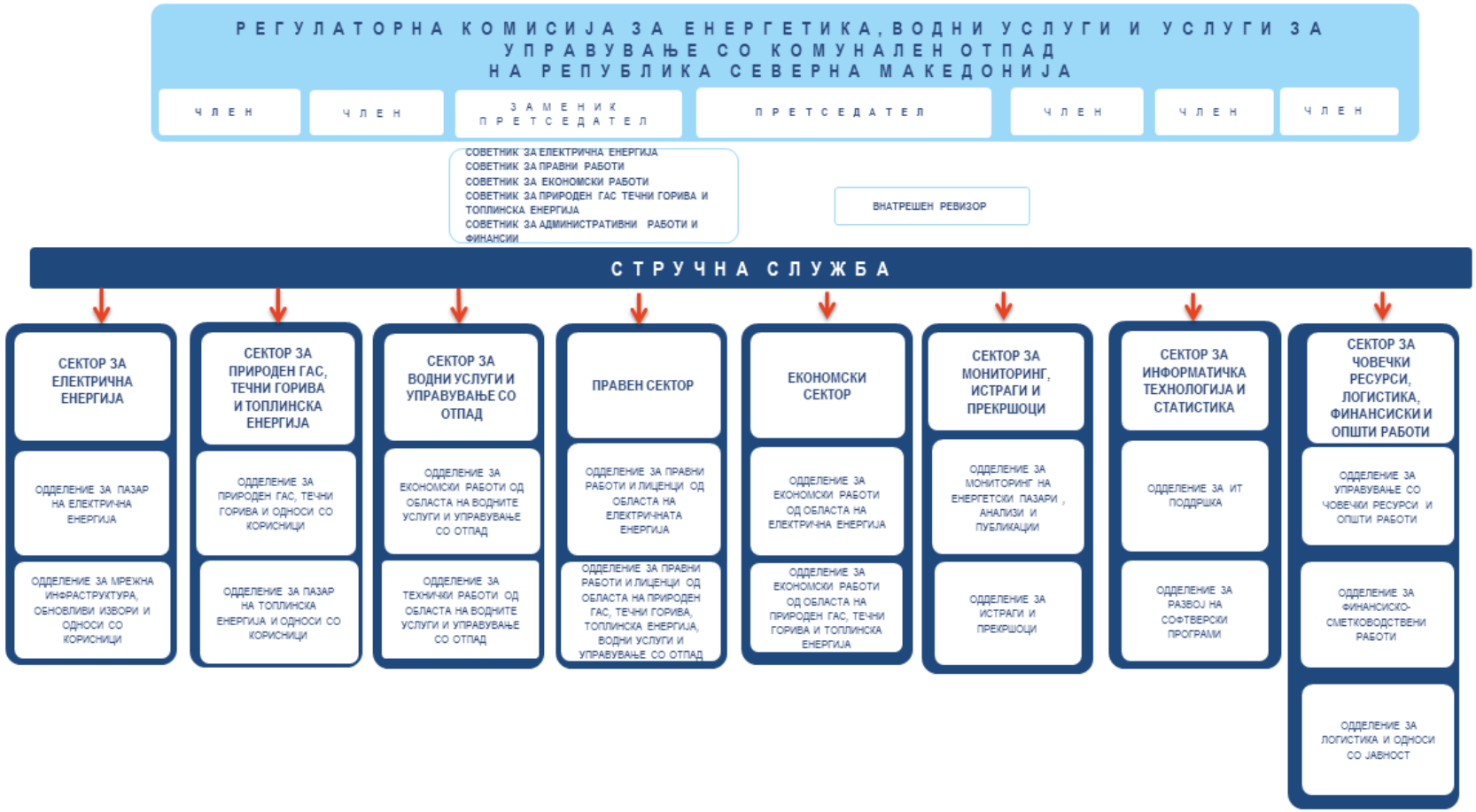
8.2 Unit on Financial - Accounting Affairs

8.3 Unit on Logistics and Public Relations.

The internal organization of the Energy Regulatory Commission envisages working posts which are exempt from the organizational units, but are directly connected to the work of the President and the members of the Energy Regulatory Commission, and these are listed below:

- Advisor to the President and members of the Energy Regulatory Commission on Legal Affairs;
- Advisor to the President and members of the Energy Regulatory Commission on Economic Affairs
- Advisor to the President and members of the Energy Regulatory Commission on Electricity;
- Advisor to the President and members of the Energy Regulatory Commission on Natural Gas, Liquid Fuels and District Heating;
- Advisor to the President and members of the Energy Regulatory Commission on Administrative Affairs and Finances; and
- Internal Auditor.

1.2 ORGANOGRAM OF THE ENERGY REGULATORY COMMISSION



1.3 HUMAN RESOURCES

When creating a successful and quality staff, the main target of the Energy Regulatory Commission is to maximally use the potential of the employees, and to develop the quality of personnel by their continuous training to achieve contemporary knowledge in the field of energy and water resources.

The total number of employees in the Energy Regulatory Commission on 31.12.2024 was 43 people, of which seven are members of the Energy Regulatory Commission and two are employed as support and technical personnel. As of 31 December 2024, the educational structure of the members of the commission and the staff in professional and administrative services is composed of 11 engineers, 11 economists, seven Bachelors of Law seven persons with other types of higher education.

In the course of 2024, due to the expiration of the mandate of a member of the Energy Regulatory Commission, by a Decision of the Assembly of the Republic of North Macedonia No. 08-4271/1 dated September 3rd, 2024, published in the Official Gazette of the Republic of North Macedonia No. 185/24, a new member of the Energy Regulatory Commission was appointed with a mandate of five years.

By Decision of the Assembly of the Republic of North Macedonia No. 08-2189/1 of April 8, 2025, published in the Official Gazette of the Republic of North Macedonia No. 77/25, two new members of the Energy Regulatory Commission were appointed with a mandate of five years.

The human resources management, being the most important resource, is exceptionally complex and multidimensional process. The human resources management in the course of 2024 was constantly changed and improved with the purpose of creating quality and successful staff that will fully comply with the obligations arising from the competences of the Energy Regulatory Commission in line with the Law on Energy*.

The successful and effective human and organizational resources management, as well as the accomplishment of the strategic objectives of human resources management resulted in:

- support in accomplishing goals and tasks of each of the organizational units;
- building positive organizational culture and working environment;
- building healthy relations in a working place by stimulating the feeling of team spirit and inter-organization cooperation;
- well-trained employees and teams;
- successful individual/team results and added values to the work;
- achieving and maintaining high moral among the employees, and
- aiming toward better qualitative skills, knowledge, and competencies of employees for performing current and future work and other.

The Energy Regulatory Commission, in cooperation with USAID and NARUC adopted a Rulebook for Introduction into the Work of the newly employed in the Energy, Water Services and Municipal Waste Management Regulatory Commission of the Republic of North Macedonia.

1.4 IT-RESOURCES

In 2024, the Energy Regulatory Commission performed maintenance and advancement of the Information System, optimized the operational data bases, administration and maintenance of the data bases, operative systems and hardware, as well as development of new modules of application software in cooperation with the software companies engaged for its development and maintenance.

Also, current maintenance is applied to the regular hardware equipment, including server machines with application software operation, personal computers, and portable computers.

The main activities in the IT field in 2024 were as it follows:

- Preventive and adaptive maintenance, and processing and implementation of new modules of the electronic water services web-platform (https://voda.erc.org.mk);
- Preventive and adaptive maintenance of the front-end market monitoring (https://monitoring.erc.org.mk), through which holders of licenses for performing energy activities submit the data related to the functioning of the energy market. The back-end mm-central software for analysis of submitted data was also upgraded;
- - Creation of a functional web-took for electricity price comparison (https://www.switch.mk). The Energy Regulatory Commission was the first in the region to introduce functional web-tool for comparison of electricity prices, as well as comparison of fixed and dynamic offers from electricity suppliers pursuant to EU Regulation DIRECTIVE (EU) 2019/944 of 5 June 2019 on common rules for the internal market for electricity Article 14 - Comparison tools;
- In line with the provisions of Rules on Cyber-Security in the electricity department energy companies of the electricity sector appointed an official on cyber security and started the process of implementation of the ISO 27001 standard on management with information security. The Company for production of electricity and district heating JSC TE-TO Skopje and the Electricity Distribution System Operator Elektrodistribucija successfully implemented the ISO 27001 standard. The Energy Regulatory Commission in 2024 adopted Guidelines for determining the Reference Model with Methodology for assessment of cyber-resilience of the systems and cyber-security, readiness and directions for establishing and transferring to the model In line with the reference model for cyber-security the operators only performed evaluation of the cyber-security readiness of their systems:
- The Energy Regulatory Commission, together with the National Centre for response to computer incidents-MKD-CIRT and the Agency for Electronic Communications - AEK in 2024 continued their joint project on automatic monthly external cyber-security control of the web-applications of the Energy Regulatory Commission. The project is implemented as cloud service using the BitSight tool. The project comprises user account for the Energy Regulatory Commission for access to the service and the possibility to manually scan web-applications and to generate and download the reports that are related to the uncovered cyber-security vulnerabilities and incoherences of scanned web-applications. Monthly

detailed cyber testing and finding faults in the web-applications using the BitSight tool is of great importance to the Energy Regulatory Commission;

- The Energy Regulatory Commission continued to participate actively in the project "Strengthening e-government", financed by IPA Program (EuropeAid/140244/DH/SER/MK). The bearer of the project is the Ministry of Digital Transformation. The aim of this project is to provide a greater range of public service, reduce the time and necessary means for citizens and businesses in interaction with the public authorities. The specific aim of the project is to expand the offer of the National portal of e-services (https://uslugi.gov.mk) by providing 135 new e-services for citizens and businesses and to improve delivery and quality of public services for citizens and for businesses too as well as for digitalizing a certain number of registers. The Energy Regulatory Commission in the National E-services Portal officially published a service for the citizens and the business sector, namely Filing of Objections, Complaints and Disputes and services for electronic submission of a license application;
- Preventive and adaptive software package maintenance for office and archive operations; e-Register, UP1, UPP and UP2;
- Upgrade of the software package for accounting and finance operations with new module for automatic generation of invoices;
- The Energy Regulatory Commission continued using the already introduced cloud back-up solution (DRaaS) for managing disasters of the information systems for the needs of the Energy Regulatory Commission for a period of 36 months. The service known as DRaaS (Disaster Recovery as a Service) provides contemporary mechanisms for establishing business continuity of the Energy Regulatory Commission for the IT- infrastructure and the applications in the case of natural disasters or permanent loss of data because of human or technical errors;
- The Energy Regulatory Commission continued to use the already established Manage Engine for log collection, analysis and generation of reports from IT-systems of the Energy Regulatory Commission with a possibility to alarm in real time via electronic message (e-mail) or by SMS. The system comprises the following four modules:
  - Log management, revision and harmonization of Windows Server, SQL Server, IIS Sites, VMware vCenter Server,
  - Monitoring, revision, and log management of Windows Active Directory Domain,
  - Log management, revision, and harmonization of Office 365 and
  - Log management, revision, and harmonization of Windows File Server.

1.5 QUALITY MANAGEMENT SYSTEM

Since 2014, the operations of the Energy Regulatory Commission have been following the Standard ISO 9001:2008 on Quality Management, i.e., equivalent to MKC EN ISO 9001:2009 in the Republic of North Macedonia.

In 2019 the Energy Regulatory Commission acquired the new ISO 9001:2015 certificate, and the same was re-issued in 2022. In 2024, regular internal control of the system on quality management was performed, as well as the regular annual audit by external

auditors of the certification body INTERCERT DOOEL to all procedures within the System on Quality Management and their realization in accordance with the standard, outreaching a result that confirmed that the Energy Regulatory Commission has fulfilled all criteria for continuing certification in accordance with the Standard ISO 9001:2015.

The certificate confirms the quality of operations of the Energy Regulatory Commission while, at the same time, it presents a roadmap for continuous advancement of the services and meeting the needs and requests coming from the consumers, energy activities licenses holders and the enterprises providing water services.

Furthermore, the Energy Regulatory Commission introduced and implemented the ISO 27001 Information Security Management Systems Standard. The implementation covered all IT processes related to IT security and protection, applications, data and ICT systems which are set in the data centre (server hall) located in the central location of the Energy Regulatory Commission.

The implemented system shall be subject to audit (certification) in the aspect of meeting the requirements of the standard by independent accreditation certification institutions, specialized for auditing the respective standard in 2025. During the revision process the following is inspected: documents, i.e., prescribed rules, implementation of rules by revising registers and their implementation by employees. The certification will confirm the successfully conducted implementation of ISO 27001 standard.

INTERCERT
system certification

CERTIFICATE СЕРТИФИКАТ

Certification Body INTERCERT certifies that

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РЕГУЛАТОРНА КОМИСИЈА ЗА ЕНЕРГЕТИКА И ВОДНИ УСЛУГИ НА РЕПУБЛИКА СЕВЕРНА МАКЕДОНИЈА

has maintains a Quality Management System according to the standard

го применува Системот за Менаџмент со квалитет согласно стандардот

МКС EN ISO 9001:2015

scope:
Regulation of issues related to the performance of energy activities and pricing of water services determined by the Energy Law and the Law on Setting Prices of Water Services

во опсег:
Регулирање на прашања поврзани со вршење на енергетските дејности и утврдување на тарифи на водните услуги определени со Законот за енергетика и Законот за утврдување на цени на водните услуги

at the following location:
ul. Makedonija br.25
Palace Lazar Pop Trajkov
Skopje

на локација:
ул. Македонија бр.25
Палата Лазар Поп Трајков
Скопје

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ELECTRICITY

2024

II. ELECTRICITY

As of July 1, 2019, the electricity market is fully liberalized meaning that each electricity consumer can individually select their supplier from the electricity market. This comes after the fact that the wholesale electricity market is liberalized i.e., that electricity suppliers, traders and producers execute mutual agreements for sale and purchase of electricity without previous consents and approvals issued by the Energy Regulatory Commission. During 2024 the electricity market was stable.

In 2024, less than half of the total consumption of electricity, i.e., 49.84% of the needs were secured at the open electricity market. This percentage includes the losses of electricity in the electricity transmission grid i.e.; the electricity distribution grids. This share marks an increase compared to 2023 when 48.2% of the gross consumption of electricity was secured at the liberalized market, and it also means increase compared to 2022 when 47.3% of the needs of electricity were met at the liberalized market. This comes as a result of the gradual restoration of trust in the electricity suppliers and more favourable offers.

In 2024 the Macedonian power exchange for the day-ahead period continued its work operated by the organized electricity market operator, MEMO DOOEL Skopje. The operation of the power exchange is conducted pursuant to the Rules on Operation of the Organized Electricity Market, approved by the Energy Regulatory Commission, as well as the Decision on the Amount of the Fee for Participation in the Organized Electricity Market, approved by the Energy Regulatory Commission on May 2, 2024. Pursuant to the information found at the website of the Macedonian exchange for 2024, as of December 2024, there were 37 companies registered for day-ahead market participation. The total trading in electricity at the day-ahead market in 2024 was 969,554.7 MWh. MEMO DOOEL Skopje, being the electricity market operator and the organized electricity market operator, with the function of a nominated operator of the electricity market, in 2024 advanced and intensified the cooperation with the regional power exchanges for possible merging of electricity markets.

EVN HOME DOO Skopje, being the universal supplier and the last resort electricity supplier in 2024 supplied households and small consumers who did not select a supplier at the free market, decided to use the universal supplier or due to certain circumstances, remained without electricity supplier. The greatest share of electricity sale of EVN HOME DOO Skopje in 2024, 88.83% comes from the category of households, whereas 11.17% of the sales is directed as small consumers.

In 2024 two decisions were made for determining the electricity prices for the consumers who are supplied by the universal supplier. The first one was made towards the end of 2023 pursuant to the regular procedure prescribed in the Tariff System for sale of electricity to the consumers supplied by the universal supplier and the last resort supplier, while the adoption of the second decision made in June 2024 was a result of the change in the percentage of a margin which was achieved on the new tender for selection of a universal supplier. The decision made in December 2023 was applied as of January 1 to June 30, 2024, whereas the second one in the period July 1 - December 31, 2024.

In 2024 the interest for investing in renewable energy sources continued thus leading the installed capacity of renewable sources power-plants to take part in the total installed capacity with 55.72%, while in the total production of electricity with 41.03%. Domestic electricity production accounts for 88.97% of gross electricity consumption, while 11.03% is provided by imports. The most remarkable is the increase in electricity production from

photovoltaic power plants of 186% in 2024 compared to 2023, i.e. it amounts to 853 GWh. In 2024 new power-plants with installed capacity of 351.3 MW were built i.e., the total production capacity increased by 13.35%. The PV power-plants dominate with a share of installed capacity of 341.5 MW.

2.1 BALANCE OF ELECTRICITY DEMAND AND SUPPLY

In the Republic of North Macedonia in 2024 the Electricity Transmission and Electricity Distribution System has received a total of 9,089 GWh amounts of electricity which is by 5.93% less compared to 2023 i.e., in absolute values, in 2024 it has received 573 GWh less compared to 2023.

In 2024 the total domestic production of electricity amounts to 6,129 Gwh and is by 424 GWh lower compared to 2023, i.e., it is by 6.47% lower compared to 2023, but by 8.79% higher compared to 2022. The decrease in electricity production in 2024 is due to the reduced production of thermal power plants, the non-operation of the Negotino TPP, as well as the reduced production of hydroelectric power plants, although there is an increase in electricity production from power plants using renewable energy sources, especially from photovoltaic plants.

The production of electricity from renewable energy sources, by including the large HPPs in 2024 was 2,516 GWh and was increased by 16% compared to 2023 i.e., the increase reached 343 GWh.

The net consumption of electricity i.e., consumption of electricity by end users in 2024 was 5,897 GWh, which is by 116 GWh more compared to 2023 i.e., the increase has reached 2.01%.

Table 2.1 shows the balance of electricity demand and supply in the period from 2022 - 2024 (in GWh)

Table 2.1 Balance of demand and supply of electricity in the period 2022 - 2024 (in GWh)

GWh	2022	2023	2024	2024/23 (%)	2024/22 (%)
Delivered into the power system	**9,314**	**9,663**	**9,089**	**-5.94**	**-2.42**
Production	**5,634**	**6,553**	**6,129**	**-6.47**	**8.79**
Largest producer	3,647	4,055	3,573	-11.89	-2.03
Other producers	1,578	2,130	2,157	1.27	36.69
Producers with feed-in tariff	394	368	399	8.42	1.27
Total import	**2,209**	**2,925**	**2,200**	**-24.79**	**-0.41**
Gross consumption	**7,105**	**6,738**	**6,889**	**2.24**	**-3.04**
Net consumption	**6,133**	**5,781**	**5,897**	**2.01**	**-3.85**
Direct consumers in transmission	643	559	465	-16.82	-27.68
Universal supplier	3,754	3,489	3,455	-0.97	-7.96
Other distribution consumers	1,736	1,733	1,976	14.02	13.82
Losses	**972**	**956**	**993**	**3.87**	**2.16**
Transmission	114	102	119	16.67	4.39
Distribution	858	854	874	2.34	1.86
Net import	**1,471**	**185**	**760**	**310.81**	**-48.33**
Import dependence %	20.7	2.75	11.03		
liberalized market share %	47.16	48.20	49.85		

The overall losses of electricity in the electricity transmission systems and in the electricity distribution systems in 2024 are in the amount of 993 GWh, which represents an increase by 37 GWh i.e., 3.87% compared to 2023.

Gross consumption of electricity, including net consumption and electricity losses in 2024, is in the amount of 6.889 GWh, indicating increase by 151 GWh compared to 2023, i.e., by 2.24 %.

In 2024, 88.97 % of gross electricity consumption was provided by domestic electricity production, while 11.03 % was provided by import.

2.2 ELECTRICITY PRODUCTION

In the Republic of North Macedonia electricity is provided by the thermal power plants which use the following primary sources of energy: lignite, mazut (fuel oil) and natural gas, and by power plants using renewable energy sources: waterpower, wind, solar energy, biomass and biogas.

The total installed capacity of power plants in 2024, is 2.983,9 MW, indicating increase by 351,3 MW compared to the installed capacity in 2023. Chart 2.1 shows the installed capacity and share of individual technologies in the total installed capacity for electricity production during 2024 (in MW and %).

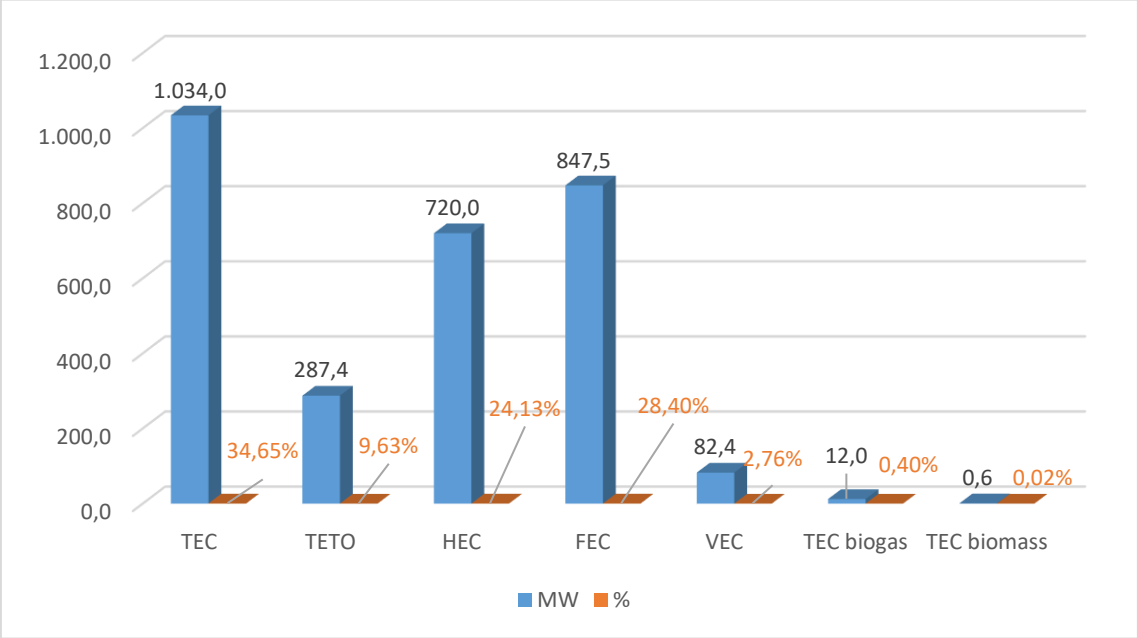


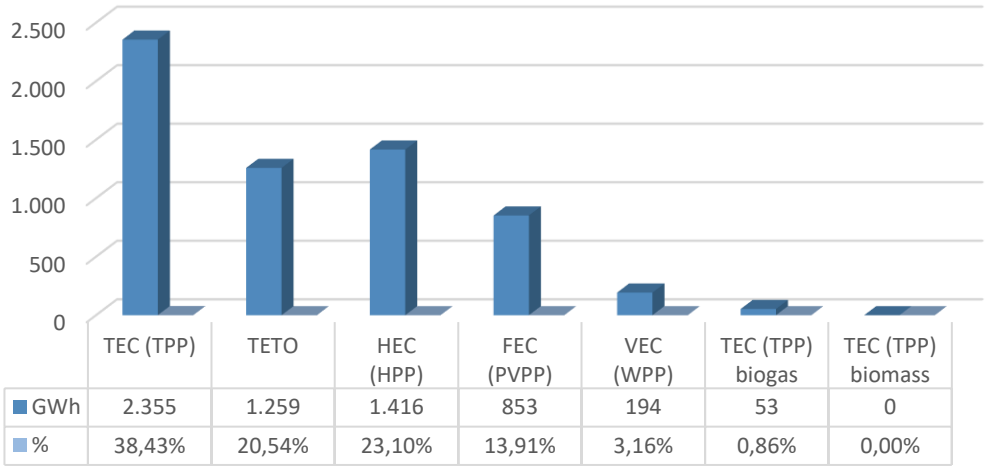
Chart 2.1 Installed capacity and share of individual technologies in the total installed capacity for electricity production during 2024 (in MW and %).

In the total of the installed capacity, thermal power plants have the highest share of 34.65 %, followed by PH power-plant with 28.40%, hydro power plants with 24,13 %, cogeneration plants for electricity and district heating production with 9.63% and the rest with 3.19%. For the first time the electricity power-plants using renewables dominate the total installed capacity i.e., their share in 2024 was 55.72%.

In 2024, new electricity producers with an installed capacity of 351.3 MW were connected to the power system. The greatest share of the new producers are photovoltaic power-plants with total installed capacity of 341.5 MW, and they come second compared to their share in the total installed capacity in 2024.

Electricity production from renewable energy sources varies from year to year because it depends on hydrological and weather conditions. In the total production of electricity for 2024, renewable energy sources have a share of 41.03 %, whereas electricity production by thermal power plants and cogeneration plants of electricity and district heating production have a share of 58.97%.

Chart 2.2 shows the percentage share of individual technologies for electricity production in 2024.



	TEC (TPP)	TETO	HEC (HPP)	FEC (PVPP)	VEC (WPP)	TEC (TPP) biogas	TEC (TPP) biomass
GWh	2.355	1.259	1.416	853	194	53	0
%	38,43%	20,54%	23,10%	13,91%	3,16%	0,86%	0,00%

Chart 2.2 Share of individual technologies for electricity production in 2024 (in %)

In 2024 thermal power plants (TPP) have the greatest share in electricity production with 38.43%, followed by hydro power plants (HPP) with 23.10%, cogeneration plants of electricity and district heating with share of 20.54%, followed by all the rest with total share of 17.93%.

In 2024 three companies managed the power plants with installed individual capacity larger than 10 MW: JSC Elektrani na Severna Makedonija - Skopje (hereinafter: JSC ESM Skopje), JSC TE-TO Skopje and EVN Makedonija Elektrani DOOEL Skopje. In 2024 JSC ESM Skopje remains the greatest electricity producer in the Republic of North Macedonia, a company that is state-owned, with 58.31% share in the total production of electricity.

Table 2.2 shows the installed capacity and production of electricity in 2024.

Table 2.2 Installed capacity and production of electricity in 2024

Production	Number of power plants	Installed capacity (MW)	Share (%)	Production (GWh)	Share (%)
JSC ESM Skopje	**16**	**1,688.57**	**56.59**	**3,573.38**	**58.31**
TEC (TPP)	5	1,034.00	34.65	2,355.22	38.43
HEC (HPP)	8	557.36	18.68	1,060.18	17.30

VEC (WPP)	1	36.80	1.23	106.06	1.73
TE-TO	2	60.41	2.02	51.93	0.85
JSC TE-TO Skopje	**1**	**227.00**	**7.61**	**1,207.00**	**19.69**
EVN Elektrani	**20**	**77.21**	**2.59**	**153.34**	**2.50**
HEC (HPP)	11	58.56	1.96	125.59	2.05
FEC (PVPP)	9	18.65	0.63	27.76	0.45
Others	**1.465**	**991.16**	**33.22**	**1,194.82**	**19.50**
Small HPP	116	104.10	3.49	229.94	3.75
FEC (PVPP)	1.339	829	27.78	825	13.46
BIOGAS	7	12.00	0.40	52.58	0.86
VEC (WPP)	2	45.60	1.53	87.53	1.43
BIOMASS	1	0.60	0.02	0.00	0.00
Total	**1.502**	**2.984**	**100.00**	**6.129**	**100.00**

Annex 12.1, as an integral part of this Report, presents an overview of electricity production in the Republic of North Macedonia for the period from 2014 to 2024.

From the chart we can note a decrease of the overall domestic production in the period from 2014 to 2021, while in 2022, especially in 2023 and 2024 a significant increase is noted in the domestic production. The growth of production in 2024 compared to 2014 is 23.01%. The lowest production of electricity occurred in 2014, 4,982 GWh, and in 2020, 5,128 GWh.

In 2024 the total domestic production of electricity amounts to 6,129 GWh and is by 424 GWh lower compared to 2023, 6,533 GWh, i.e. it marks a decrease of 6.47% The decrease in production in 2024 owes to the reduced production of electricity by JSC ESM Skopje, the reduced production of electricity by JSC TE-TO Skopje and the non-operation of TPP Negotino, although it marks increased production of electricity from power plants which use renewable energy sources, particularly PV power plants.

Starting from 2014 JSC ESM Skopje annually produces under 5,000 GWh. In the period 2020 - 2022 the average annual production is under 4,000 GWh and there is reduction in the production of electricity among both hydro power plants and thermal power plants. The production of JSC ESM Skopje was lowest in 2021 when it amounted 3,274 GWh, which compared to the production in 2014 is lower by 27.81%. In 2024 the production of JSC ESM Skopje was 3,573 GWh and it marked reduction of 11.87% compared to 2023, i.e., reduction of 21.20% compared to 2014.

The production of electricity within the hydro power plants mostly depends on the hydrological conditions and in the period under revision (2014-2024) it varied from the maximum 1,528 GWh in 2015 up to the minimum 816 GWh in 2017. In 2024 the production of electricity from hydro power plants was 1,060 GWh and it marked a decline of 12.83% compared to 2023.

Decline was also noted in the production of electricity by thermal power plants. The year of 2021 registers a record fall of electricity production from thermal power plants in the level of 2078,3 GWh, of which only 1864,4 GWh electricity was produced by thermal power plants in REK Bitola, which represents 40.73% decrease of production compared to 2014. In 2022 and 2023, an improvement is noted, but in 2024 the production in REK Bitola was 2,164 GWh and it marks a decline of 13.84% compared to 2023.

TEC Oslomej marks an increase of electricity production in 2021 and 2022 compared to 2014 – 2020, but in 2023 it marks a decrease, whereas in 2024 it reached 192 GWh i.e., it marks an increase of 9.71% compared to 2023. In the revised period from 2014 – 2024, TEC Oslomej produced 267,44 GWh in 2022, while the lowest electricity production in TEC Oslomej was only 26,8 GWh in 2016.

The reasons for the trend of reduced production in thermal power plants lies in the numerous breakdowns and in increased number of outages in the operation of REK Bitola, in the decrease of extracted qualitative coal and its sufficient quantities in REK Bitola, the already overdue life cycle of thermal power plants, inadequate investments, lower efficiency, and etc. In recent years TEC Oslomej has had a very low electricity production because all coal reserves in REK "Oslomej" were already exploited. The increased production is due to the coal purchase from external suppliers.

It is particularly worth mentioning that with the obligations undertaken for harmonization with EU's legislation, and especially with the so-called EU Package for clean energy, the country must achieve reducing of the use of fossil fuels and greenhouse gas emissions and increase in the use of renewable energy resource for the purpose of protecting the environment and tackling climate changes.

In December 2021, TEC Negotino started operating after a very long period; it uses mazut as the primary fuel for production of electricity. TEC Negotino operated until April 2023 and in 2024 it does not mark production of electricity.

When it comes to the production of electricity, decline is noted in the production of electricity in the cogeneration plant JSC TE-TO Skopje in 2024 as compared to 2023 of 7.65% i.e., it produced 1,207 GWh electricity in 2024. In 2024 JSC TE-TO Skopje participates with 19.69% in the total domestic production of electricity.

In the past period in the Republic of North Macedonia there was a significant interest for construction of power plants which use renewable energy sources, especially PV power plants. The most remarkable is the increase in electricity production from photovoltaic power plants of 186% in 2024 compared to 2023, i.e. it amounts to 852.52 GWh. Compared to 2014 the production of electricity from PV power plants is significantly increased for about 60 times.

2.3 ELECTRICITY CONSUMPTION

In 2024, net consumption of electricity is in the amount of 5.897 GWh, whereby, the consumption of electricity by consumers directly connected to the electricity transmission system, amounts with 465 GWh, including the personal consumption of electricity by power plants in idle periods (periods when they did not produce electricity). This net electricity consumption was reduced by 16.82% compared to the consumption in 2023 when it reached 559 GWh, i.e., 27.68% compared to 2022.

The consumption of electricity by consumers connected to the electricity distribution network is in the amount of 5.432 GWh, showing reduction by 4.02 %, or by 210 GWh in relation to electricity consumption of 5.222GWh in 2023. The consumption in the electricity distribution networks indicates a decrease of electricity consumption in the regulated market by 0.97% or 34GWh. Electricity consumption for consumers connected to electricity distribution system, supplied by suppliers in the open market is increased by 14.02% compared to 2023 i.e., by 234 GWh.

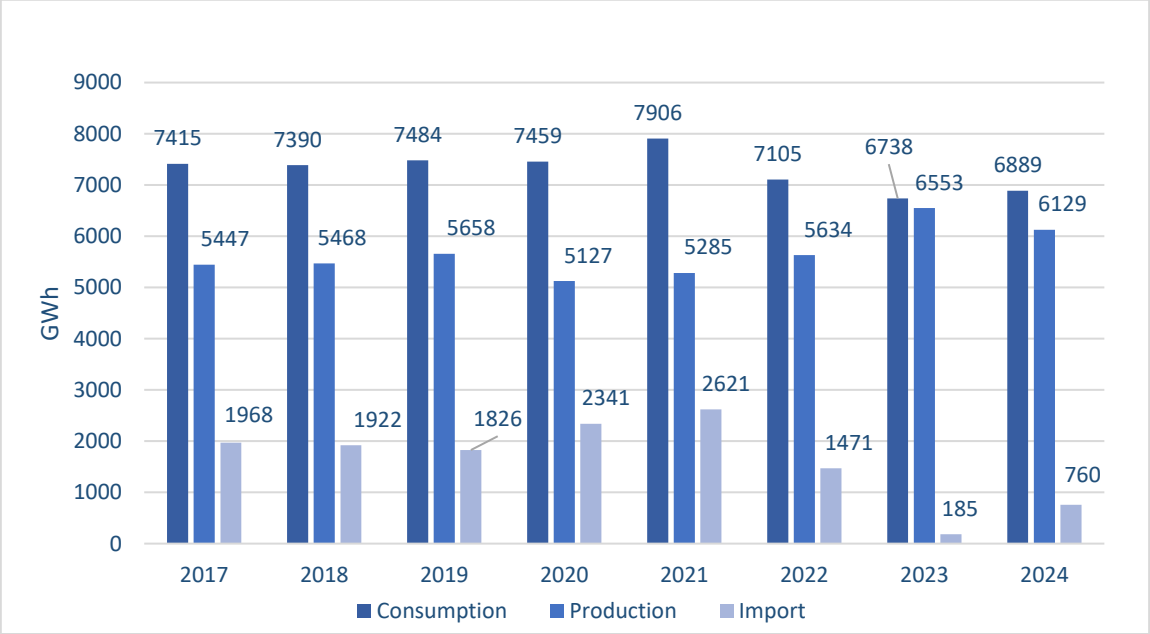
2.4 ELECTRICITY IMPORT

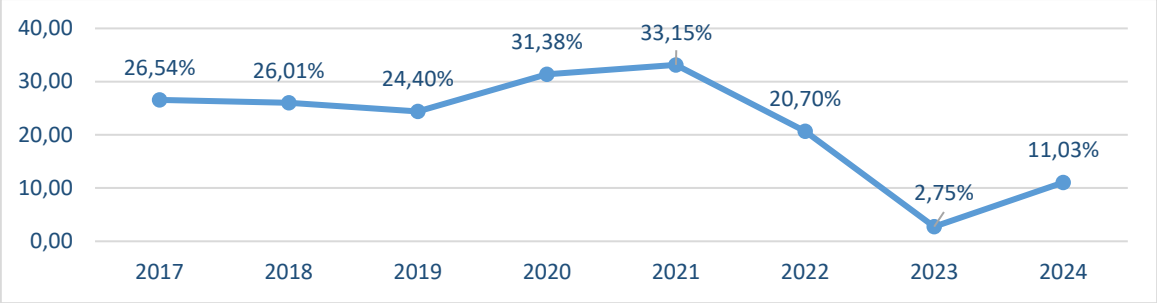
In the past years the Republic of North Macedonia became import-dependable country regarding electricity needs and it started importing lignite for production of electricity and it directly depends on domestic electricity production The import of electricity, in the past years, was in the range of 20 % to 30 % of the overall electricity gross-consumption. For the first time in 2023, electricity import was 2.75 %, while in 2022 it was 20.70 % of the overall gross consumption; in 2021 it reached 33.15% of the total gross consumption. In 2024 the net import of electricity was 11.03% of the total gross consumption of electricity.

The total nominated electricity import in 2024 was 2.200 GWh and is lower by 724 GWh, i.e., 24.79% compared to the import in 2023. It is important to underline that these quantities of electricity are not entirely used by the consumers of the Republic of North Macedonia, i.e., a portion is exported.

The import-dependence of the Republic of North Macedonia is determined using the ratio between domestic production of electricity and gross – consumption of electricity which takes into consideration the consumption of electricity by the end users, including the electricity needed to cover the losses of electricity in the electricity transmission network and the electricity distribution network.

Chart 2.3 displays the production of electricity used for electricity consumers in the Republic of North Macedonia, the electricity consumption, and the import dependence.





Graph 2.3 Consumption, production, net import of electricity and share of net import in gross consumption of electricity for the period 2017 - 2024 (in GWh and %)

2.5 RENEWABLE ENERGY SOURCES

The potential of the renewable energy sources and the measures for supporting the use of the renewable energy sources are part of the Strategy for Energy Development and the Action Plan for Renewable Energy Sources which, pursuant to the valid Law on Energy*, are adopted by the Government upon a proposal of the Ministry of Energy, Mining and Mineral Resources. The preparation of the new draft of the Law on Energy* and the proposed Law on Renewable Energy Source* started in 2023 and continued in 2024. For the first time renewable energy sources will not be regulated in the Law on Energy*, but in a separate law, which is the case in many countries in the region. This new draft-law shall transpose the Directive 2018/2001 for promoting the use of renewable energy sources, which is part of the EU package on clean energy.

2.5.1 ELECTRICITY PRODUCTION FROM RENEWABLE ENERGY SOURCES

The portfolio of power plants using renewable energy sources for production of electricity is consisted of large hydro power plants with installed capacity of over 10 MW, small hydro power plants with installed capacity smaller than 10 MW, wind parks for production of electricity, photo voltaic power plants, thermal power plants using biogas and thermal power plants using biomass.

The trend of intensive investments in construction of power plants using renewable energy sources started in 2022, following the energy crisis, but it also continued in 2023 and 2024. In 2022 272 new power plants using renewable energy sources were constructed with an installed capacity of 151 MW; in 2023 this number is nearly doubled i.e., 531 new power plants were built with installed capacity of 365 MW, whereas in 2024 349 new power plants were constructed with installed capacity of 351.3 MW. The total number of power plants using renewable sources in 2024 was 1,494 with total installed capacity of 1.663 MW which is nearly 56% of the total installed capacity on the country's territory.

As in the past two years, in 2024 also the greatest part of the newly constructed power plants use photo voltaic i.e., 345 with total installed capacity of 341,5 MW, followed by the hydro power plants with installed capacity of 0.23 MW, one thermal power plant using biogas with installed capacity of 2 MW and one wind park with installed capacity of 9.6 MW. The number of power plants using renewable energy sources, their installed capacity and production are presented in Table 2.3 and are divided by technology used.

Table 2.3 Number of power plants, installed capacity and production of electricity from renewable energy source in 2024 according to technology

	2024				
Type of power plant	**Number of power plants**	**Installed capacity (MW)**	**Share (%)**	**Production (GWh)**	**Share (%)**
Total	1,502	2,984	100%	6,129	100%
TEC (TPP)	5	1,034	34.65%	2,355	38.43%
TE-TO	3	287	9.63%	1,259	20.54%
Renewable energy sources	1,494	1,663	55.72%	2,514	41.03%
HEC (HPP)	10	587	19.67%	1,108	18.08%
VEC (WPP)	3	82	2.76%	194	3.16%
Small HPP	125	133	4.46%	308	5.02%

Investments in production capacities that use renewable energy sources changed the structure of domestic production. In the last four years (2021, 2022, 2023 and 2024) and a total of 1,201 new power plants were built. Compared to previous years, by the end of 2020, the total number of power plants was 303, of which 295 were renewable energy sources, while the remaining 8 are thermal power plants and cogeneration plants. The growing trend of renewable energy sources by years and technologies is presented at the following Chart 2.4.

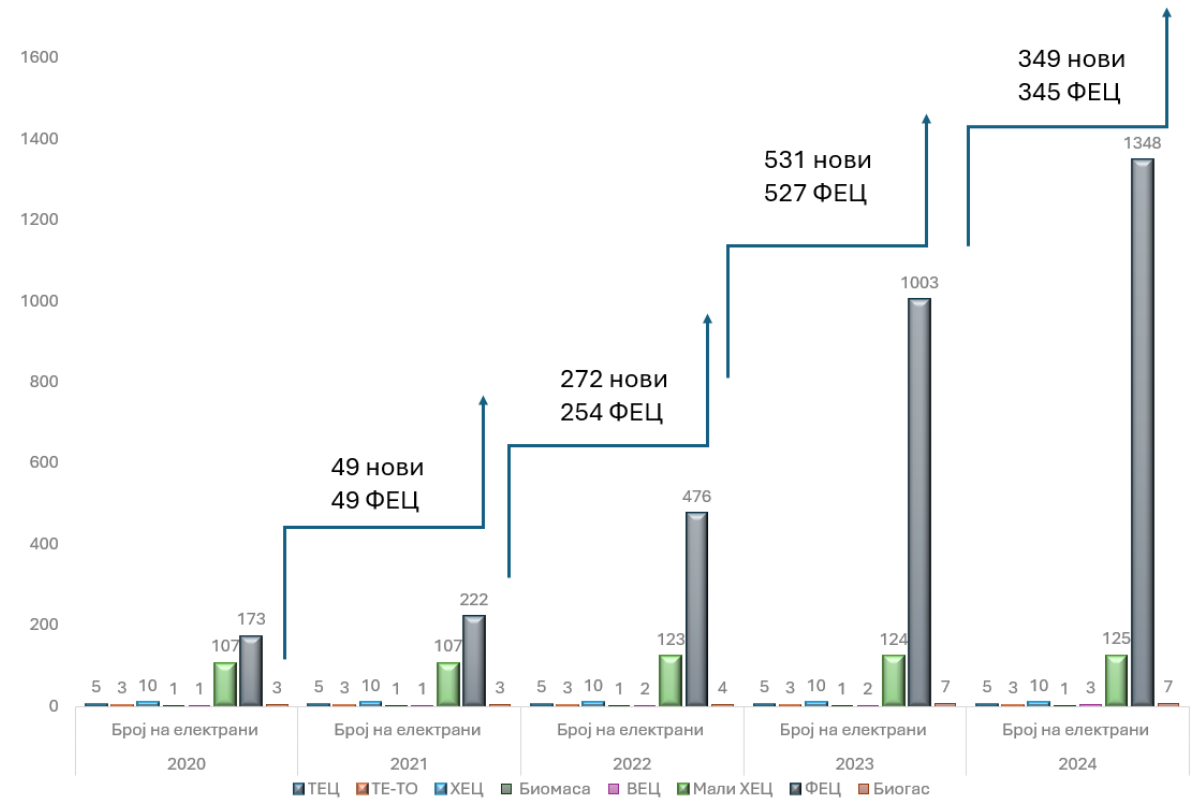


Chart 2.4 Number of power plants in the period 2022 - 2024 (by technology)

As we can see in chart 2.5, in 2020 the share of thermal power plants in the overall installed capacity dropped from 49% to 24.65% in 2024, because of new investments in renewable sources. In 2020 the share of renewable sources in the overall installed capacity was 37%, while in 2024 it was 55.72%.

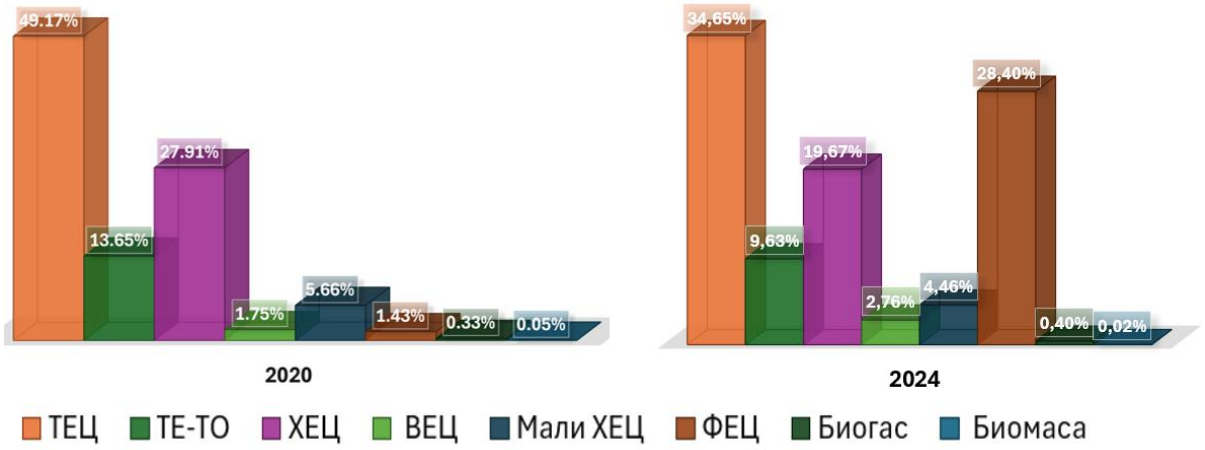


Chart 2.5 Share of domestic production capacities according to technology in line with their installed capacity, compared to 2020 and 2024

The increased installed capacity of renewable energy sources contributed to significantly increased production of electricity. The number of power plants from renewable energy sources is increased by 30% in 2024 compared to 2023, their installed capacity is increased by nearly 27% whereas the production of electricity from renewable energy sources

in increased by 16%. Table 2.4 displays the production of electricity in 2024 by technology. Most significant growth is marked in production from photo voltaic power plants presented in Chart 2.6. In 2023 298 GWh of electricity is produced, whereas in 2024 the production from this type of power plants was 853 GWh which marks an increase of 186%.

ВИД НА ЕЛЕКТРОЦЕНТРАЛА	2020	2021	2022	2023	2024
	Производство (GWh)				
ВКУПНО	5.127	5.284	5.633	6.553	6.129
ТЕЦ	2.510	2.105	3.034	3.032	2.355
ТЕ-ТО	1.119	1.517	967	1.348	1.259
ОИЕ	1.498	1.662	1.632	2.173	2.514
ХЕЦ	1.003	1.132	1.034	1.277	1.108
ВЕЦ	117	103	107	165	194
МАЛИ ХЕЦ	284	321	363	371	308
ФЕЦ	37	51	77	298	853
БИОГАС	57	54	51	62	53
БИОМАСА	0	0	0	0	0

Table 2.4 Production of electricity by technologies in the period 2020 - 2024

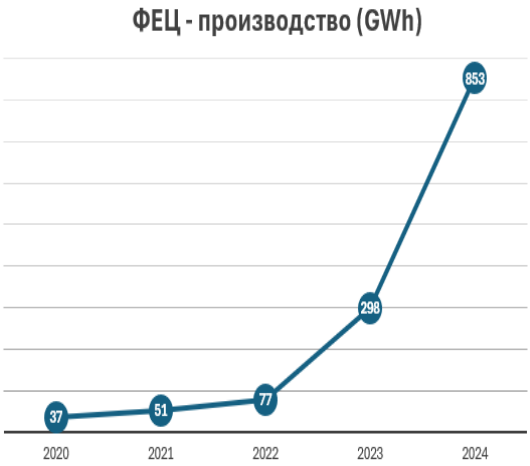


Chart 2.6 Production of electricity from photo voltaic power plants in the period 2020 - 2024

2.5.2 ELECTRICITY PROSUMERS

The Rulebook on Renewable energy sources defines the term prosumer, as well as the conditions which it needs to meet to acquire such status. The Rulebook on Renewable energy sources defines the prosumer as a household, a community of households-owners of separate parts in a residential building or community of households-owners of separate parts in a residential building who have concluded a contract for performing management services with a manager of residential buildings, for the needs of common parts in the residential building, a small consumer, a budget user and an individual user can build a facility for the production of electricity from a renewable energy source, where the produced electricity is used for its own consumption, and the surplus of the produced electricity is handed over to the electricity distribution network. The maximum installed capacity of the production plant for households, as well as for a community of households-owners of separate parts in a residential building or a community of households-owners of separate parts in a residential building who have concluded a contract for performing management services with a manager of residential buildings, for the needs of the common parts in the residential building is 6 kW, and for a small consumer, budget user and individual user is 40 kW. As the other electricity producers, electricity prosumers don not pay the tariff for electricity distribution for the electricity provided in the distribution grid.

Although the prosumers participate only with 0.17% in the total number of metering places, in 2024 there was a growth in the number of prosumers compared to 2023. In 2023 the number of prosumers (by number of metering points) amounted 918, their number in

2024 was 1,598 out of which 785 are legal entities, while 813 belong to the household group, and their total installed capacity is 25 MW. The total electricity transmitted by prosumers to the distribution system amounts to 12.3 GWh, which is an increase of 90% compared to 2023.

2.5.3 ELECTRICITY STORAGE

The amendments of the legal and regulatory framework will probably turn the focus toward battery systems. Namely, in 2022 the amendment of the Law on Energy* introduced the „electricity storage operator", which provides space for developing the secondary legislation in the part of electricity storage. It will further provide system services by electricity storage operators in the market for system services, and for greater system flexibility.

2.5.4 VIRTUAL PRODUCER

In the Law on Energy*, the virtual producer is defined as a producer or supplier who participates in the electricity market and who commercially and technically integrates electricity producers, consumer-producers and electricity storage operators connected to the electricity distribution network, which enables centralized management of their production and their treatment as one producer participating in the electricity market. The virtual producer commercially integrates electricity producers from renewable sources connected to the electricity distribution grid. The function of virtual producer may be performed by an electricity producer or supplier. A total of 7 virtual producers were registered in the electricity market by the end of 2024.

2.5.5 MEASURES TO SUPPORT RENEWABLE ENERGY SOURCES

In line with the existing legislation, the measures to support renewable energy sources are exclusively intended for the production of electricity and they are aimed at encouraging investments for optimal use of the available potential of renewable energy sources in the Republic of North Macedonia and ensuring security in energy supply, as well as achieving the national mandatory goals for the participation of renewable energy sources in the total energy consumption and meeting the conditions for environmental protection and for mitigating climate change. The feed-in tariff and the premium tariff are available as a measure to support electricity production from renewable energy sources.

The feed-in tariff was introduced in 2007, while the first power plants that sell the produced electricity under feed-in tariff, started operation in 2010.

The Law on Energy* adopted in 2018 additionally introduced the premium tariff as a supporting measure. The premium tariff represents an additional amount to the price that the preferential producer has achieved by selling the produced electricity in the electricity market. The preferential producer that uses premium tariff is chosen via tender procedure with auction, carried out by the Ministry of Energy, Mining and Mineral Resources.

Out of 1,502 domestic producers of electricity, 1,494 use renewable energy sources; of them 179 use the feed-in tariff, 53 use premium tariff, whereas 1,262 power plants do not use measures for support of electricity production. The share of producers who use measures to support the total installed capacity of renewable energy sources in 16% while in the total installed capacity in the Republic of North Macedonia it amounts to 9%.

2.5.5.1 FEED-IN TARIFF

The feed-in tariff is a regulated purchase price of electricity produced by a preferential electricity producer by the electricity market operator.

Preferential producers operating under feed-in tariffs are guaranteed with the tariff of each kWh produced electricity under which the electricity market operator is obliged to purchase the total of electricity produced by the preferential producers in a period of 15 to 20 years, depending on the type of the power plant. The benefit for preferential producers that use feed-in tariff is that the electricity market operator takes the balance responsibility for these producers.

The type of technologies for which feed-in tariff is awarded, the maximum limit of installed capacity of the power plant, amount and period of use of feed-in tariffs, as well as the prescribed total installed capacity of the power plants for which feed-in tariffs are awarded, are presented in Annex 12.2.

By December 31 2024, the total prescribed installed power of the power plants for which feed-in tariffs were awarded was met for the wind parks, whereas out of 20 MW prescribed for the thermal power plants using gas, the remaining free capacity is 12 MW, and out of the 10 MW prescribed for the thermal power plants using biomass, the remaining free capacity is 7.4 MW. For the small hydro power plants the maximum limit is not defined, i.e., it is conditioned by the executed concession agreements.

The share of producers who use feed-in tariffs in the total installed capacity of renewable energy sources in 11% while in the total installed capacity in the Republic of North Macedonia it amounts to 6%. The preferential producers using feed-in tariffs participate with nearly 6.5% in the produced electricity from domestic producers, whereas in the part of production from renewable energy sources, the preferential producers participate with 36%.

By December 31, 2024, the total installed capacity of the preferential producers amounted to 178 MW which is an increase of 38.57 MW compared to 2023. In 2024 a total of 2,472,359,552 MKD were paid for produced 399,680,908 kWh i.e., the average price of electricity produced by preferential producers was 6,186 MKD/MWh or 101 EUR/MWh which is nearly the average price accomplished for the whole period of use of the feed-in tariffs (102 EUR/MWh). Detailed overview of paid assets for produced electricity by preferential producers during 2024 is provided in Annex 12.2. The increase in the average price of preferential producers owes mostly to the reduced participation of the small hydro power plants in the production mix of preferential producers which are one of the cheapest technologies among the preferential producers and the increased share of production from the thermal power plants using biogas, which, on the other hand, are one of the technologies with the highest production price among the preferential producers.

In 2024 399,680,908 kWh electricity was produced by preferential producers, which is an increase of 31,129,411 kWh compared to 2023. The increased production arises from the new wind park Bogoslovec which started operating in 2023, but in 2024 it acquired the preferential status and the start of operation of another thermal power plant using biogas BIOENETERPRAJS Saramzalino, which in 2024 also acquired the status of preferential producer.

Table 2.5 Installed capacity, production of electricity and funds paid to preferential producers using feed-in tariff until 31.12.2024, according to technology

Type of power plant	Number of power plants	Installed capacity (kW)	Share (%)	Production (kWh)	Share (%)	Payments (MKD)	Share (%)
Small HPP	92	87,239	49.02%	180,726,696	45.22%	905,793,616	36.64%
VEC (WPP)	2	72,800	40.90%	163,245,274	40.84%	893,929,426	36.16%
Biomass	1	600	0.34%	0	0.00%	0	0.00%
Biogas	4	4,996	3%	38,890,005	10%	430,707,880	17%
FEC (PVPP)	79	12,339	6.93%	16,818,933	4.21%	241,928,630	9.79%
Total	**178**	**177,974**	**100%**	**399,680,908**	**100%**	**2,472,359,552**	**100%**

The following table displays electricity production, paid assets, and average feed-in tariffs from the beginning of application of the feed-in tariff as a measure of support until the end of 2024.

Table 2.6 Overall production, payment in MKD and EUR and average tariff according to technology for the whole period of application of the feed-in tariff as a measure of support

Description	Production (kWh)	Payments (MKD)	Payments (EUR)	Feed-in tariff (MKD/kWh)	Feed-in tariff (EUR/MWh)
Small HPP	2,012,496,239	9,922,158,733	161,335,914	4.93	80
VEC (WPP)	1,129,830,604	6,192,780,830	100,695,623	5.48	89
Biomass	337	3,110	51	9.23	150
Biogas	402,897,864	4,463,261,751	72,573,362	11.08	180
FEC (PVPP)	242,622,617	3,238,840,434	52,664,072	13.35	217
Total	3,787,847,661	23,817,044,858	387,269,022	6.29	102

Annex 12.3 displays paid assets in 2024 for each power plant separately. In 2024 for electricity produced by small hydro power plants 905,793,616 MKD are paid for 180,726,696 kWh of produced electricity by an average price of 5.01 MKD/kWh, for electricity produced by wind power plants 893,929,426 MKD are paid for 163,245,274 kWh of produced electricity at an average price of 5,48 MKD/kWh, for biogas power plants 430,707,880 MKD for 38,890,005 kWh produced electricity at an average price of 11.08 MKD/kWh and for solar power plants 241,928,630 MKD are paid for 16,818,933 kWh of produced electricity according to an average price of 14.38 MKD/kWh.

In line with the Law on Energy, the electricity market operator sells the purchased electricity produced by preferential producers to electricity suppliers and traders, which is further sold to end consumers. Suppliers and traders purchase the electricity produced by preferential producers from the electricity market operator daily in accordance with their share as notified about the electricity needs of their consumers within the total forecasted electricity needs by consumers of electricity in the Republic of North Macedonia. Chart 2.7 below displays the purchase of electricity produced by preferential producers in percentage for each electricity supplier and trader that sells electricity to end consumers individually.

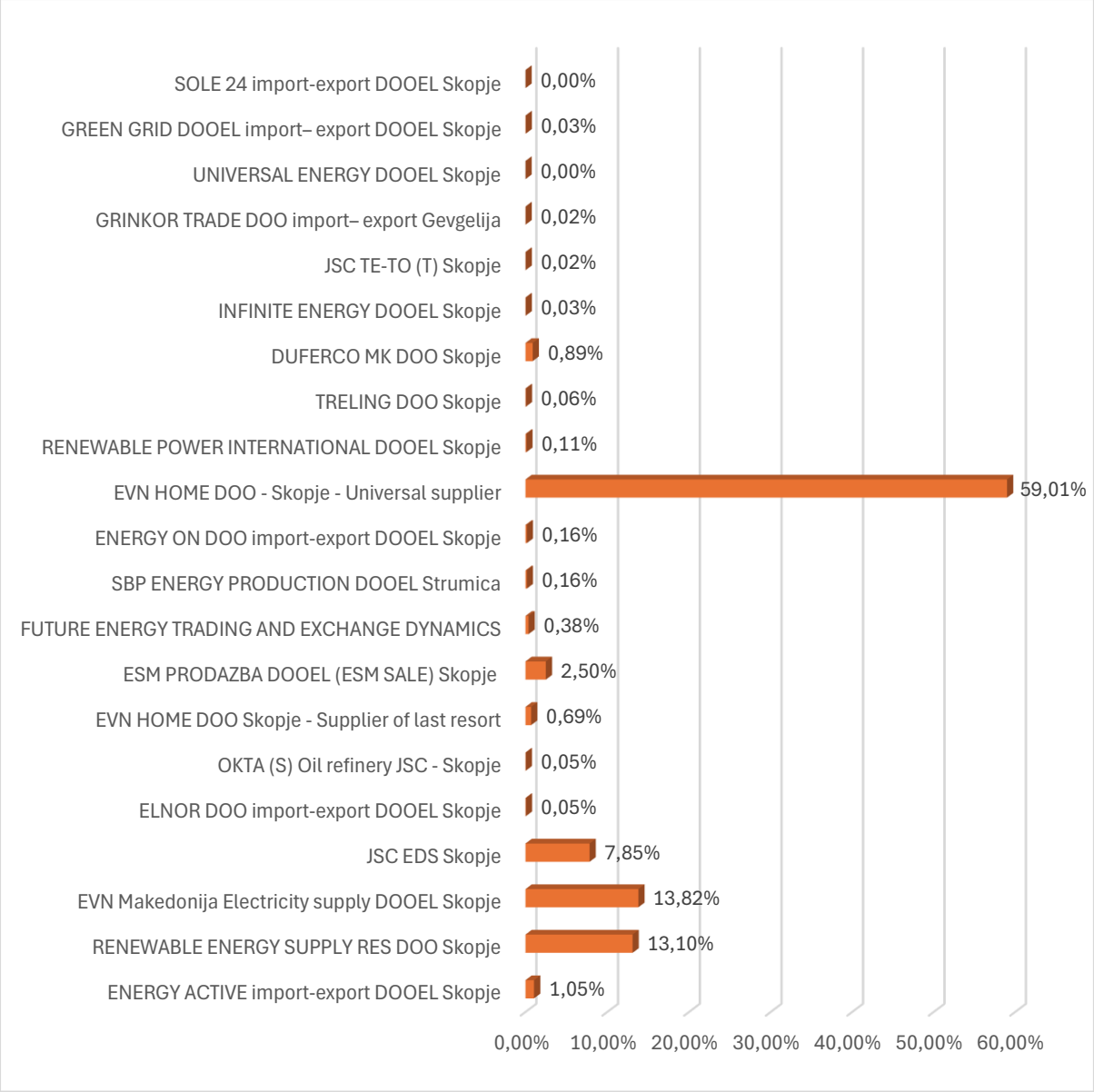


Chart 2.7 Share of suppliers/traders in the purchase of electricity purchased by preferential producers in 2024

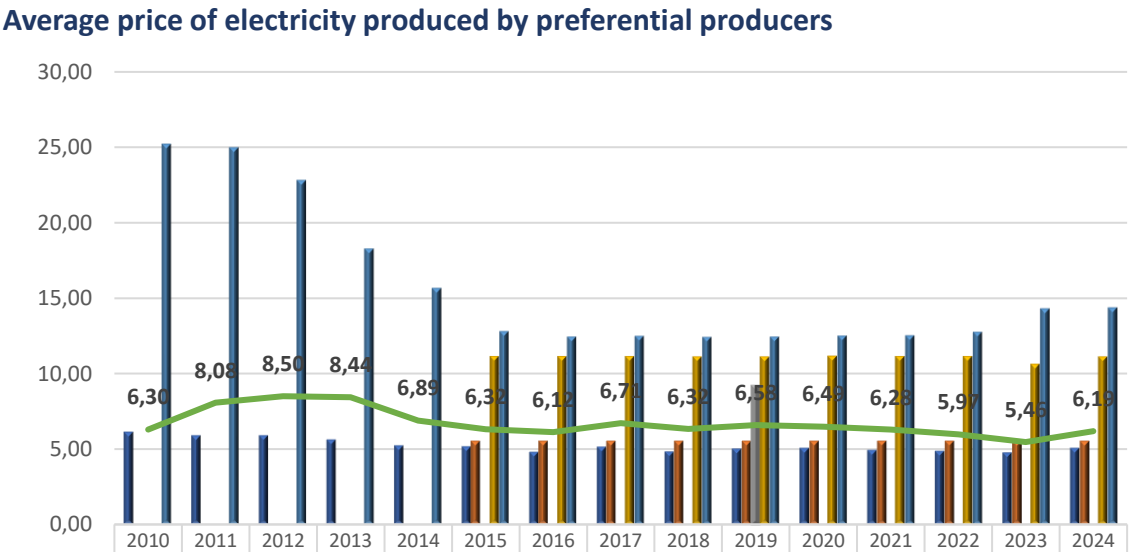
The price per kWh whereby the electricity market operator sells electricity to suppliers and traders is calculated at the end of the month as the average price according to which the electricity market operator purchased electricity from preferential electricity producers using a feed-in tariff. The average price of electricity produced by preferential producers using feed-in tariff in 2024 amounts to 6.19 MKD/kWh, representing the lowest price since the start of feed-in tariff application until now.

Small hydro power plants and wind power plants, compared to other three technologies that comprise the portfolio of preferential producers using feed-in tariffs, represent a significantly cost-effective source of electricity produced from renewable sources. The analysed period from 2010 to 2024 indicates that the average price of electricity produced by small hydro power plants is 4,93 MKD/kWh, which is below the average price for preferential producers.

The average price of electricity from solar power plants in the first five years of the analysed period (2010 - 2014) is significantly higher than the average price in the last seven

years of the analysed period (2015 - 2024), which is due to the reduction of feed-in tariffs for this technology with the Decree on feed-in tariffs since 2013. In 2023 and 2024 the average price of solar power plants was increased in relation to the period from 2015 to 2022, because some preferential producers using solar power plants, that used lower feed-in tariffs lost the status of preferential producer and entered the open electricity market.

The average price of electricity produced by thermal power plants using biogas and biomass is higher than the average accomplished price. Graph 2.8 presents in detail the movements of the average prices of electricity for each renewable source individually, for each year of the analysed period.



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Hydro power plants	6,07	5,85	5,85	5,56	5,19	5,13	4,76	5,11	4,78	4,98	5,01	4,88	4,83	4,72	5,01
Wind power plants (wind parks)						5,48	5,48	5,48	5,47	5,48	5,49	5,49	5,48	5,48	5,48
Thermal power plants using biomass										9,23	0,00	0,00	0,00	0	0
Thermal power plants using biogas						11,09	11,09	11,09	11,07	11,07	11,10	11,09	11,09	10,58	11,08
Photo voltaic power plants	25,22	24,99	22,82	18,28	15,68	12,81	12,44	12,49	12,43	12,45	12,51	12,52	12,76	14,32	14,38
Average preferential tariff	6,30	8,08	8,50	8,44	6,89	6,32	6,12	6,71	6,32	6,58	6,49	6,28	5,97	5,46	6,19

Chart 2.8 Production of electricity produced by preferential producers in the period 2010 - 2024 (mkd/kWh)

Graph 2.9 displays the ratio between the payments for support of the preferential producers using feed-in tariff and amount of produced electricity, for each individual renewable source of energy

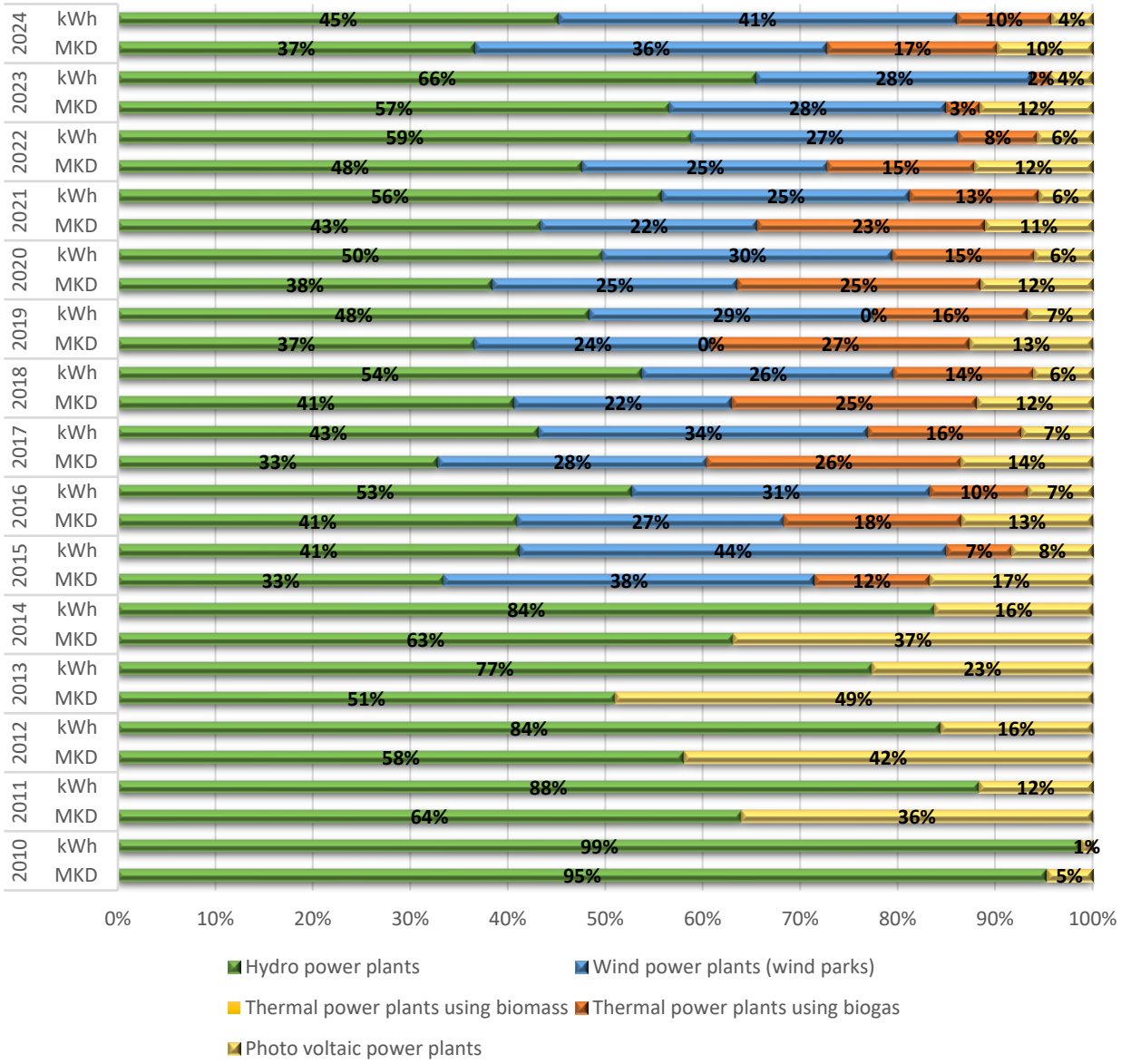


Chart 2.9 Ratio of paid assets to preferential producers and the quantity of electricity produced according to type of technology

The ratio of paid assets for support, and the quantity of electricity produced is most beneficial in cases of production electricity by hydro power plants and the wind power plants. Namely, in 2024, hydro power plants had a share of 45% in the total produced electricity by preferential producers, while in the total of paid assets for preferential producers they have a share of 37 %. In 2024 the wind power plants participated with 41% in the total produced electricity by preferential producers while in the total paid assets for preferential producers they have a share of 36%. The ratio between the paid assets for support and the amount of produced electricity is least favourable in cases of production of electricity by photovoltaic power plants and thermal power plants using biogas. The photovoltaic power plants in 2024 participated with 4% in the total produced electricity by preferential producers, while in the total of paid assets for preferential producers they have a share of 10 %. The thermal power plants using biogas in 2024 had a share of 10% in the total produced electricity by preferential producers, while in the total of paid assets for preferential producers they have a share of 17%.

This means that for the production of electricity from hydro power plants and wind power plants (wind parks), the costs for support are in average lower for unit produced electricity compared to the costs for support with the photovoltaic power plants and thermal power plants using biogas.

2.6 GRID SERVICES

Grid services comprise the activities of transmission and distribution of electricity, which according to the Law on Energy* are regulated activities and tariffs are determined by the Energy Regulatory Commission, whereby the activities should be performed continuously in a transparent and non-discriminatory manner fall under the categories: transmission and distribution of electricity.

The only operator that performs the activity of electricity transmission is the Joint Stock Company for electricity transmission and power system management, state-owned - Skopje (hereinafter: JSC MEPSO Skopje), which performs its obligations in line with the Law on Energy* and the issued license on electricity transmission in the territory of the Republic of North Macedonia.

In the territory of the Republic of North Macedonia, the energy activity of electricity distribution is performed by two different and independent operators of electricity distribution systems, which are two separate legal entities, namely Elektrodistribucija DOOEL Skopje and JSC ESM Skopje, which are performing the activity pursuant to the Law on Energy* and based on the licenses for performing the energy activity of electricity distribution, issued by the Energy Regulatory Commission. Elektrodistribucija DOOEL Skopje is privately owned, and it performs the activity of electricity distribution in about 98% of the territory of the Republic.

The second operator of the electricity distribution grid is JSC ESM Skopje, which significantly smaller operator because it performs the activity of electricity distribution on a certain territory of the industrial complex of former “Rudnici i Zelezarnica – Skopje”, in territory of Butel and Gazi Baba municipalities. Less than 100,000 users are connected to the electricity distribution system of JSC ESM Skopje.

Pursuant to the Law on Energy* the electricity distribution system operator should be independent in terms of performing the energy activity electricity distribution i.e., it cannot be involved in the activities of production of electricity, transmission of electricity, electricity trade and supply, as well as organization and management of the electricity market.

2.6.1 ELECTRICITY TRANSMISSION

In line with the requirements and the conditions set in the Law on Energy* and the Third Energy Package of the legislation on internal energy market, in 2019, JSC MEPSO was certified based on the model on ownership division.

Regarding the obligations deriving from ownership separation of the electricity transmission system operator, the compliance officer of JSC MEPSO Skopje is obliged to submit to the Energy Regulatory Commission an Annual Report on the implementation of the Compliance Program of JSC MEPSO Skopje. On 30 January 2024, the compliance officer submitted for approval to the Energy Regulatory Commission the Annual Report on the

implementation of the Compliance Program of JSC MEPSO Skopje in relation to the obligation that result from ownership separation for 2023, which was approved by the Energy Regulatory Commission on 29 February 2024.

2.6.2 ELECTRICITY DISTRIBUTION

Elektrodistribucija DOOEL Skopje is a sole legal entity established to perform the activity of electricity distribution, it meets the conditions referred to in the Law on Energy * and the Third Energy Package, i.e., it does not possess a license for performing energy activities referring to production, transmission, organization and management of the electricity market, electricity trade and/or supply.

Pursuant to Article 97 paragraph (6) of the Law on Energy, the electricity distribution system operator Elektrodistribucija DOOEL Skopje on 26 January 2024 submitted a request for approval of a new compliance officer and their request was approved by the Energy Regulatory Commission on 1 February 2024.

The compliance officer on 14 October 2024 submitted to the Energy Regulatory Commission the 2023 Annual Report for implementation of the Compliance Programme for the activities of Elektrodistribucija DOOEL Skopje to ensure objectivity, transparency and prevention of discriminatory behaviour when distributing electricity.

Pursuant to the Law on Energy* JSC ESM Skopje, being the electricity distribution system operator, according to the number of connected users, is not obliged to appoint a compliance officer, as well as to prepare a Compliance Programme and to prepare annual compliance reports.

2.6.3 ELECTRICITY TRANSMISSION SYSTEM

The power system of the Republic of North Macedonia represents a technical-technological ensemble composed of production plants, the electricity transmission network, two electricity distribution systems and electricity consumers.

The electricity transmission system transmits the produced electricity from large production capacities to large consumers connected to the electricity transmission network, and to the two electricity distribution systems where the largest number of consumers is connected. Also, through the electricity transmission system in the Republic of North Macedonia, electricity transit is performed toward neighbouring countries.

The electricity transmission network is used for transmission of electricity at high voltage via high voltage transmission lines, transformers and other high voltage equipment and plants, from the point of reception of electricity producers or interconnection electricity lines to the point of delivery, or to the point of delivery in the distribution networks or connection points of large consumers connected to the electricity transmission grid.

The highest voltage level in the electricity transmission network is 400 kV, and the lowest is a 110 kV voltage level. The main pillar of the electricity transmission network are 400 kV transmission lines which assemble a 400 kV ring that connects the north of the country, where the largest number of electricity consumers are located, with the south part, where the number of electricity consumers is significantly lower, but this is the part of the

country that accommodates the largest production facilities, as well as the renewable energy sources from which the greatest number are connected to the electricity distribution grid and which in 2024 often injected produced electricity in the electricity transmission system. At the same time the 400 kV lines serve for interconnection to the neighbouring electrical power systems.

The electricity transmission system of the Republic of North Macedonia is connected to the electricity transmission systems of all neighbouring countries, except for Albania, through five 400 kV interconnections, as it follows:

- In Kosovo, through the 400 kV transmission line TS Skopje 5 – TS Ferizaj 2 (Uroshevac);
- In Serbia, through 400 kV transmission line TS Shtip - TS Vranje 4;
- In Bulgaria, through 400 kV transmission line TS Shtip - TS Mogila;
- Greece, through two 400 kV transmission lines TS Bitola 2 - TS Meliti and TS Dubrovo – TS Thessaloniki.

The electricity transmission system of the Republic of North Macedonia is not connected to the electricity transmission system of the Republic of Albania. A project for constructing the 400 kV transmission line Bitola - Elbasan with a length of 92 km, as well as the construction of TS 400/100kV/kV Ohrid. This project shall finalize the construction of "Corridor 8", and shall provide interconnection of North Macedonia, Bulgaria, Albania, Montenegro, and Italy. In 2024 JSC MEPSO had activities in the TS 400/100kV/kV Ohrid and TS 400/100 kV/kV Bitola 2 where a line of 400 kV is under preparation, and this project, pursuant to the ten years development plan of the electricity transmission network is expected to be finalized in 2026.

The electricity transmission 110 kV grid is the most expanded with most branches, and it is the most developed and represents a connection of large hydro and thermal power plants, electricity distribution systems, and all larger industrial capacities connected to the electricity transmission network. The interconnection of 400 kV and 110 kV transmission grid is provided by five transformer stations: TS Skopje 4, TS Skopje 5, TS Bitola 2, TS Dubrovo, and TS Stip. Through this electricity transmission system of 110 kV voltage, only a small number of large consumers who are directly connected to the electricity transmission system are supplied with electricity. Electricity distribution systems connect smaller production capacities, and the consumers connected to the electricity distribution systems. In 2023 and 2024 the large number of connected photo voltaic power plants led to feedback effects in the power grid followed by surges in certain regions.

JSC MEPSO Skopje is owner of five transformer stations TS 400 / 110 kV / kV, and 52 transformer stations TS 110 / xx kV / kV, whereby nine transformer stations are in its full ownership, and 43 transformer stations TS 110/xx kV/kV have mixed ownership with DOOEL Skopje Elektrodistribucija DOOEL Skopje.

JSC MEPSO Skopje manages the Network with 577,06 km length of 400 kV grid, and 1,656.64 km length of 110 kV grid.

2.6.3.1 PLAN FOR ELECTRICITY TRANSMISSION GRID MAINTENANCE

In line with the Law on Energy*, the electricity transmission system operator each year is obliged to submit the Plan on the Maintenance of the Electricity Transmission Network for internal transmission lines. On 24 November 2023, JSC MEPSO Skopje submitted its Maintenance Plan for 2024 which was approved by the Energy Regulatory Commission on 8 February 2024. The submitted maintenance plan comprised the current maintenance of internal transmission lines of the electricity transmission network, inspection and control of the transmission line corridors, inspection and control of transformer stations, replacement of surge protectors, suspension equipment, isolators, replacement of current metering transformers, calibration and certification of the metering equipment, control of batteries, metering of the grounding resistance, and regular and extraordinary inspections of energy transformers.

2.6.3.2 PLAN FOR DEVELOPMENT AND INVESTMENTS

Pursuant to the Law on Energy*, every two years, the electricity transmission system operator shall be obliged to submit for approval to the Energy Regulatory Commission a Plan on Electricity Transmission System Development for a period 10 years.

The Energy Regulatory Commission approved the Development Plan for the period 2023-2032 on 10 April 2023. The Plan comprises projects and activities for construction of new elements in the electricity transmission network, construction of interconnection transmission line with Albania, reconstruction and revitalization of the electricity transmission network, modernization, expansion and additional construction of transformer stations for providing the necessary capacity for connection of new connection points for consumers and for construction of power plants operating on renewable energy sources, development of telecommunication equipment, development of the commanding and managing equipment, development of the SCADA system and other.

One of the most significant projects of JSC MEPSO Skopje, related to both, the significance for the electricity transmission system and the investment perspective, is the construction of the new 400 kV transmission line to Albania. This project is of particular importance for our country because it will enable connection to the electricity distribution system to the Republic of Albania and will enable market connectivity to the countries of the region. This project is crucial because it will provide system reliability, safety of supply, reduction of electricity losses, growth of cross – border transmission capacity, increase of electricity transit within the systems in the region, and smoothing electricity price differences in the region, as well as connection of neighbouring electricity markets and selling the surplus of electricity produced, especially the electricity produced by the photovoltaic power plants. In addition to these benefits, there are other benefits such as: increased safety of supply, reduced investments in production facilities designated for national system reserves, regional dispatching and cost-effective production, electricity exchange, exchange of electricity from renewable sources, reduction of CO2 emissions, and management and control of power, frequency and reactive capacity.

The Energy Regulatory Commission on 22 December 2023 adopted a Decision for approval of the regulated maximum income, regulated average tariff and tariffs for calculation elements for 2024, as well as the basic income for 2024, 2025 and 2026 for performance of the regulated energy activity - transmission of electricity. Table 2.7 present

the total approved amount for investments by the Energy Regulatory Commission for the following three years.

Table 2.7 Approved amount for investments of JSC MEPSO for the period 2024-2026

JSC ESM Skopje	2024	2025	2026
mkd	568,915,528	1,147,002,635	1,747,347,773

2.6.3.3 LOSSES IN THE ELECTRICITY TRANSMISSION SYSTEM

The losses of the Electricity Transmission Network represent the difference between the electricity input in the electricity transmission network from domestic electricity production by power plants connected to the electricity transmission system, and electricity import and the overall electricity output from the electricity transmission network.

In 2024, the losses in the electricity transmission network were 119 GWh, i.e., 1.3%, indicating an increase by 16.67% compared to 2023, when the losses in the electricity transmission network were 102 Gwh. The reason for these increased loses reduction lies in the reduced output from the electricity transmission network, mostly towards the electricity distribution grids, due to the increased production in these grids and about 170 MW of the renewable energy sources which are connected to the electricity distribution network, all of which contributed to the load in the system decreasing, to the occurrence of increased voltages that affect the increase in losses in the power transmission network.

In the period 2015-2024 the losses in the electricity transmission network have tendency to increase, expressed either as an amount of electricity required to cover the losses or as a percentage of losses. The losses of electricity in the period 2015-2024 in the electricity transmission network are increased from 102 GWh to 119GWh.

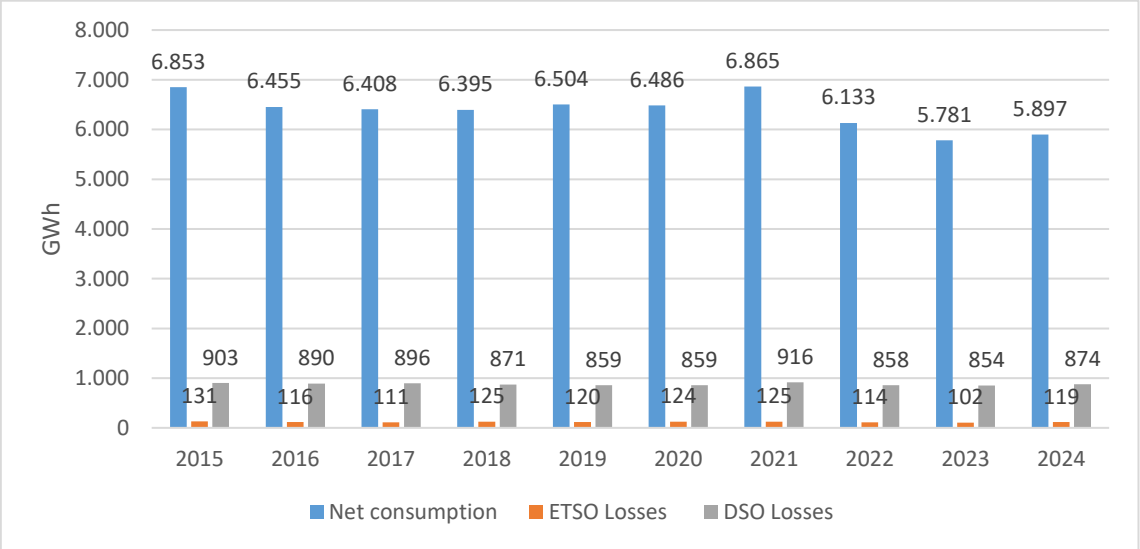


Chart 2.10 Net - consumption and losses in the electricity transmission and distribution networks in the period from 2014 to 2023 (in GWh)

Chart 2.10 provides an overview of net consumption and electricity losses in the electricity transmission and distribution network in the last 10 years.

The TSO purchases electricity to cover the losses in the electricity transmission network, in a transparent and non-discriminatory manner. The procedure for electricity purchase is carried out in line with the Rules on Electricity Purchase for covering the losses in the electricity transmission network, approved by the Energy Regulatory Commission. Namely, on 18 November 2024 the Energy Regulatory Commission approved the Rules on Electricity Purchase for covering the losses in the electricity transmission network in order to enable JSC MEPSO Skopje to procure electricity on the Macedonian electricity exchange.

In 2024 JSC MEPSO Skopje procured electricity to cover the losses in the electricity transmission network from supplier and electricity traders through a transparent procedure. Table 2.8 displays the data for procured amounts of electricity in 2024 from electricity traders and suppliers and the price achieved. The total amount of electricity procured to cover the losses in the electricity transmission system at the liberalized market from traders and suppliers amounts to 104,909 MWh where the realistic calculated losses amount to 118,726 MWh whereas the rest of 13,817 MWh are secured through the balance mechanism.

Table 2.8 Electricity purchase for covering the losses in the electricity transmission network (Grid) in 2024 (in MWh and MKD)

	MWh	mkd/MWh
Total/average	104,909	6,645.60
RES MK	43,321.0	6,352.36
EFT Skopje	26,672.0	7,554.33
EDS Skopje	22,244.0	8,298.56
Sole 24	6,491.0	5,532.10
JSC MEPSO	6,180.8	

The average price of purchased electricity for covering the losses is 6,645.60 MKD/MWh or 108.06 EUR/MWh which represents a decrease by 39.41 % compared to the average purchase price in 2023 when the same was or 178.33 EUR/MWh.

The Energy Regulatory Commission on 22 December 2023 adopted a Decision for approval of the regulated maximum income, regulated average tariff and tariffs for calculation elements for 2024, as well as the basic income for 2024, 2025 and 2026 for performance of the regulated energy activity - transmission of electricity for JSC MEPSO Skopje. The total approved cost for electricity purchase for covering the losses in the electricity transmission network is 693,339,405 MKD, for 98,032,999 kWh of electricity losses in the electricity transmission system, at a purchase price of 7,0726 MKD/kWh.

2.6.4 ELECTRICITY DISTRIBUTION SYSTEM

The electricity distribution network in the Republic of North Macedonia is composed of transmission lines of 110 kV, 35 kV, 20 kV, 10 kV, 6 kV and 0,4 kV voltage levels and of transformer stations TS 110/(20)10 kV/kV, TS 110/35/(20)10 kV/kV/kV, TS 35/10 kV/kV and TS 10(20)/0.4 kV/kV. The overall length of the electricity distribution network is 29.298 km,

whereby, 99,42 % or 29.128 km, are governed by Elektrodistribucija DOOEL Skopje. The remaining 170 km are owned and governed by JSC ESM Skopje.

In 2024 the length of the electricity distribution network of JSC ESM Skopje remained the same. In 2024, according to Elektrodistribucija DOOEL Skopje, the overall length of the network was 29,218 km which indicates that there is an increase of 351 km i.e., 1.21%

In 2024 Elektrodistribucija DOOEL Skopje constructed a total of 27 new transformer stations 10(20)/0,4 kV/kV. With the transformer stations TC 110/ xx kV/kV, TC 35/10 kV/kV the situation remains unchanged i.e., their number is the same as last year. The overall length of the overhead electricity distribution line of Elektrodistribucija DOOEL Skopje is 70.25%, while the cable line is 29.75%. Table 2.9 shows the length of the electricity distribution network according to voltage level of Elektrodistribucija DOOEL Skopje in 2024. Table 2.10 below displays the share of each voltage level in relation to the cable and overhead network. The percentage of the cable line in medium-voltage and low-voltage network is significantly lower, meaning that Elektrodistribucija DOOEL Skopje work in this issue in order to increase the reliability in the electricity distribution network and to provide continuous electricity supply.

Table 2.9 shows the length of the electricity distribution network according to voltage level of Elektrodistribucija DOOEL Skopje in 2024.

Voltage level (kV)	110 kV overhead network	110 kV cable network	35 kV overhead network	35 kV cable network	20(10) kV overhead network	20(10) kV cable network	0.4 kV overhead network	0.4 kV cable network
Length (km)	186	6	917	214	6,878	3,564	12,729	4,985

Table 2.10 Share of overhead and cable network according to voltage levels with Elektrodistribucija DOOEL Skopje 2024

Voltage level (kV)	110 kV overhead network	110 kV cable network	35 kV overhead network	35 kV cable network	20(10) kV overhead network	20(10) kV cable network	0.4 kV overhead network	0.4 kV cable network
%	96.69	3.31	81.08	18.92	65.87	34.13	71.86	28.14

The number of transformer stations, and the number of consumers connected to the electricity distribution network (Grid) of Elektrodistribucija is enclosed in Tables 2.11– 2.13.

Table 2.11 Number of transformer stations of Elektrodistribucija DOOEL Skopje in 2024

Voltage level (kV)	110/xx kV/kV Joint ownership with MEPSO	110/xx kV/kV	35/(20)/10 kV/kV	10/0,4 kV/kV
Number of TS	41	13	76	7,450

There is a total of 924,519 connection points in the electricity distribution network of Elektrodistribucija DOOEL Skopje. Out of the total number of consumers LV.2 912,562 are households, whereas the remaining 11,957 are other consumers.

Table 2.12 Number of connection points of the electricity distribution network of Elektrodistribucija DOOEL Skopje in 2024

Connection category	MV1	MV2	LV1.1	LV1.2	LV.2	Total
Total	**78**	**1,409**	**6,887**	**3,582**	**912,562**	**924,519**

Table 2.13 Number of connection points of the electricity distribution network of Elektrodistribucija DOOEL Skopje in 2024

Consumers	Large consumers	Small consumers	Households	Total
Total	**24,877**	**79,264**	**820,357**	**924,498**
Tariff	0	72,342	820,357	892,699
Qualified	24,877	6,922	0	31,799

With the electricity distribution network of JSC ESM Skopje there are no changes in the length of the network, as well as in the number of the transformer stations compared to last year. The reason for this is that JSC ESM Skopje is performing the energy activity electricity distribution on strictly defined geographic area in the circle of an industrial facility and there are no new objects constructed.

Tables 2.14 - 2.16 provide data for the number of transformer stations, the length of the electricity distribution network, as well as the number of consumers connected to the electricity distribution network of JSC ESM Skopje.

Table 2.14 Number of transformer stations of Elektrodistribucija DOOEL Skopje in 2024

Transformation of voltage levels (kV)	110/35/ 6	110/6	35/10/ 0.4	10/0.4	6/0.4
Number of TS	1	1	1	1	4

Table 2.15 Length of the electricity distribution network according to voltage level of Elektrodistribucija DOOEL Skopje in 2024

Voltage level (kV)	110	35	10	6	0.4
Length (km)	**20**	**10**	**0.1**	**90**	**50**

Table 2.16 Number of consumers connected to the electricity distribution network of JSC ESM Skopje in 2024

Consumers	Large consumers	Small consumers	Households	Total
Total	**13**	**39**	**0**	**52**
Tariff	0	6	0	6
Qualified	13	33	0	46

2.6.4.1 PLAN FOR DEVELOPMENT AND INVESTMENTS

In line with the Law in Energy* electricity distribution system operators, Elektrodistribucija DOOEL Skopje and JSC ESM Skopje, are obliged to prepare development plans of the electricity distribution system for the next five years and to submit them to the Energy Regulatory Commission for approval.

On 5 March 2024, Elektrodistribucija DOOEL Skopje submitted the Plan for Developing the electricity distribution system for the period 2024-2028. Following a Public Debate, the Energy Regulatory Commission approved the Plan on 4 July 2024. The plan comprised investments and maintenance for construction and reconstruction of the electricity distribution network, new metering devices, GSM meters, remote reading and disconnection meters, cabling a portion of the electricity distribution network, projects referring to the dislocation of metering equipment in regions with large commercial electricity losses, individual dislocation of meters due to commercial losses, projects for new customers, projects for connecting renewable energy sources, etc. The Plan also shows 10 kV outlets that have the largest number of outages in electricity supply and with the longest duration of outages, which is why they are the target of developing new technical solutions such as replacing part of the outlets and sections with new poles by replacing conductors with a larger cross-section or by replacing an insulated cable snob, replacing suspension equipment, insulators, cathodic arresters of surges, installation of line disconnectors in order to quickly select the sections of the outlets and quickly find faults, in order to improve the voltage for consumers and to shorten the duration of outages. Furthermore, the plan shows investments for connection of renewable energy sources which attracts an increased interest from the investors.

On 24 November 2023, JSC ESM Skopje, subsidiary Energetika submitted the Plan for Developing the electricity distribution system for the period 2024-2028. On 7 December 2023 the Energy Regulatory Commission approved the Plan. On 8 November 2024, JSC ESM Skopje, subsidiary Energetika submitted the Plan for Developing the electricity distribution system for the period 2025-2029. On 12 December 2024 the Energy Regulatory Commission approved the Plan.

On 22 December 2023, , following the adopted Decision for approving base revenues for 2024, 2025 and 2026, maximum allowed revenue for 2024, regulated average tariff and tariffs on calculation elements for 2024 for performing the regulated energy activity referring to electricity distribution of Elektrodistribucija DOOEL Skopje, the Energy Regulatory Commission approved the investments of Elektrodistribucija for the three years of the regulated period presented in Table 2.17.

On 31 December 2024, , adopted the Decision for approving base revenues for 2024, 2025 and 2026, maximum allowed revenue for 2024, regulated average tariff and tariffs on calculation elements for 2024 and tariffs for calculation elements for 2024 for performing regulated energy activity - electricity distribution by JSC ESM Skopje. The total amount of approved investments for JSC ESM Skopje is presented in Table 2.18.

Table 2.17 Approved amount for investments of Elektrodistribucija DOOEL Skopje for the period 2024-2026

Elektrodistribucija DOOEL Skopje	2024	2025	2026
mkd	**3,932,305,738**	**3,889,273,364**	**3,745,051,461**

Table 2.18 Approved amount for investments of JSC MEPSO for the period 2024-2026

JSC ESM Skopje	2024	2025	2026
mkd	**148,040,000**	**148,500,000**	**130,500,000**

2.6.4.2 LOSSES IN THE ELECTRICITY DISTRIBUTION SYSTEM

The losses in the electricity distribution network represent the difference between the total input of electricity at the electricity distribution network and the produced electricity from producers connected to the electricity distribution network and the total electricity output from the electricity distribution network (consumed electricity by consumers).

The percentage of electricity losses in the electricity transmission networks and, in the electricity, distribution networks, in the last 10 years is displayed in Chart 2.11.

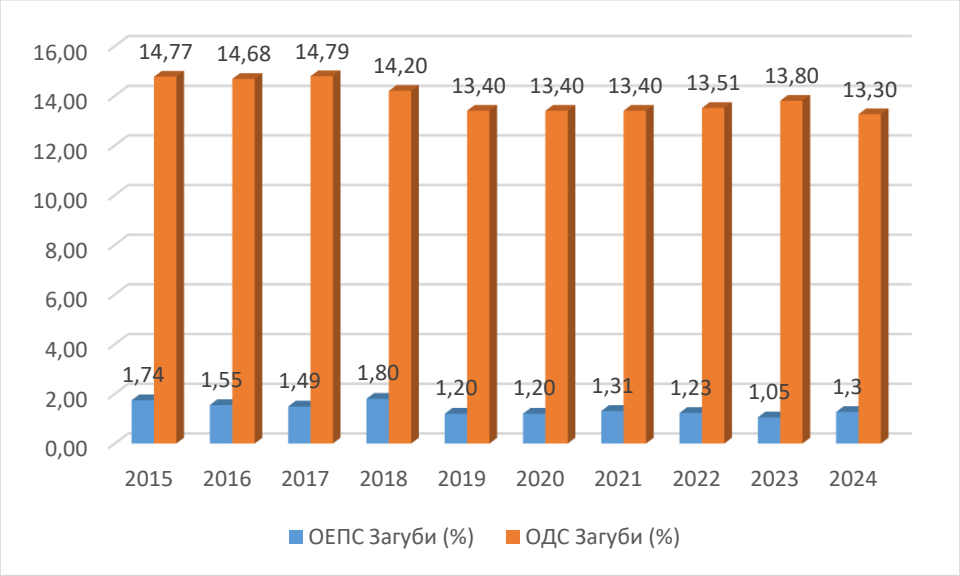


Chart 2.11 Losses in the electricity transmission and distribution networks in the period from 2015 to 2024 (in GWh)

From the chart 2.11 it can be concluded that the losses of electricity in the electricity distribution networks in the period 2015 - 2024 are mildly decreasing until 2021 with the exception of 2017. In 2022 and 2023 there was a mild increase in the losses and one of the reasons is the increase in the installed capacity of the photo voltaic power plants connected to the electricity distribution network, unproportionately allocated and concentrated in same regions, and as a consequence there is an overload in the voltages, as well as increase in the technical losses in the electricity distribution network. In 2024, losses in the electricity

distribution network amounted to 13.30%, which is a slight decrease compared to losses in the electricity distribution network in 2023, when they amounted to 13.80%. This decrease in losses is due to the increased number of prosumers who first use the generated electricity for their own needs and deliver the rest to the grid.

Electricity losses in the electricity distribution system of JSC ESM Skopje in 2024 amount to 2 GWh.

The electricity distribution system operator, in accordance with the Law on Energy*, has an obligation to procure electricity to cover losses in the electricity distribution network in a transparent and non-discriminatory manner. The electricity distribution system operator procures electricity based on the Rules for Procurement of Electricity to Cover Losses in the Electricity Distribution Network, which are approved by the Energy Regulatory Commission.

Elektrodistribucija DOOEL Skopje for 2024 procured electricity to cover losses in the electricity distribution network from electricity traders and suppliers in a transparent procedure. Table 2.19 shows data on electricity purchases for 2024 with purchase prices.

Table 2.19 Electricity purchase for covering the losses in the electricity transmission network (Grid) in 2024 (in MWh and mkd/MWh)

	MWh	mkd/MWh
Total/average	**876,367.6**	**6,359.37**
JSC ESM	779,055.0	6,462.48
MEMO	92,510.9	4,979.69
JSC MEPSO	4,801.7	16,211.49

The average price for purchase of electricity to cover the losses in 2024 was 6,359.37 mkd/MWh i.e., 103 EUR/MWh and has been reduced by nearly 6% compared to the average price for purchase of electricity to cover the losses in 2023 when it amounted to 6,778.49 mkd/MWh i.e., 110 EUR/MWh.

2.6.4.3 CHANGE OF CONNECTIONS CATEGORIES

In 2024, the Energy Regulatory Commission adopted an overall of 44 decisions for approving the change of connection category (Table 2.20), i.e., 3 decisions less compared to 2023.

The requests for approval to change the connection category, submitted by Elektrodistribucija DOOEL Skopje most often refer to planned dislocations by the operator of the electricity distribution system, requests submitted by the users, as well as wrongful established status in the Register of the electricity distribution system operator.

Table 2.20 Review of applications for switching of category in 2024

Number of total submitted requests	LV2 in LV1.2	LV1.2 in LV2	LV2 in MV2	MV1 in MV2	LV1.2 in MV2	LV2 in LV1.1
	requested/ approved	requested/ approved	requested/ approved	requested/ approved	requested/ approved	requested/ approved
47	**37/37**	**2/2**	**0/0**	**1/1**	**5/5**	**2/2**

Most of the decisions for approval to change the connection category is from LV2 to LV1.2. The reasons for which change of category is requested are planned dislocations by the

electricity distribution system operator, requests for meter dislocation by users, requests by users, after conducting technical control by the electricity distribution system operator, connection reconstruction and so on.

2.6.5 QUALITY OF ELECTRICITY SUPPLY

Quality of electricity supply is one of the most important parameters followed by the Energy Regulatory Commission and which are particularly important for all consumers, and this is one of the parameters for approval of investments and investment maintenance. The quality of supply comprises the quality of voltage, continuous supply, and commercial quality. The TSO and the DSO submit data to the Energy Regulatory Commission on the quality of electricity supply at a monthly, quarterly, and annual level. Continuous electricity supply comprises planned and unplanned outages in electricity supply according to voltage levels and their duration. The platform on market monitoring monitors outages for all voltage levels except for the voltage level of 0.4 kV, for which the DSO Elektrodistribucija DOOEL Skopje sends the data once in a year to the Energy Regulatory Commission.

Commercial quality comprises complaints, objections and petitions which refer to electricity supply or connections to the electricity distribution/transmission network, invoicing electricity, accuracy of electricity invoices, outages and damages caused by the electricity distribution system operator, and they are shown in the section of the report titled “Legal Affairs”, in the chapter “Consumer Protection”.

The quality of voltage in electricity distribution networks is one of the most important parameters of the quality of electricity supply. The deviation of the voltage in the electricity distribution network should be following the Standard MKS 50160:2012, as established by the Grid Code on Electricity Distribution. The quality of voltage, its allowed deviation, and continuous electricity supply in the electricity transmission and distribution network are clearly presented and defined in the Grid Code for Electricity Transmission. The electricity distribution system operator Elektrodistribucija DOOEL Skopje, meters the quality of voltage of low voltage at consumer's request and at the request of the Energy Regulatory Commission, if a large group of consumers of the same region file complaints. Hence, numerous non-static omniquant metering instruments were purchased, which are easily installed in the electricity distribution network. Metering is performed in a period of seven days with assistance of a mobile metering equipment which is installed in the electricity distribution network and if deviations of the voltage are detected, adequate technical solutions are undertaken for improving the quality of voltage. The quality of voltage is also metered by the State Inspectorate on Technical Inspection at the request of consumers, and with the installed metering equipment, seven-day metering of voltage quality is performed in the electricity distribution network, and finally the data are processed. If the metering demonstrates that the voltage level does not correspond to the prescribed standard, the operator of the adequate system is obliged to perform certain technical operations and he shall not charge the service of metering, on the contrary the metering shall be paid by the consumer.

The collection of data for planned and unplanned outages and the parameters SAIDI (System Average Interruption Duration Index – Index of average timeframe interruption duration in the system per consumer), and SAIFI (System Average Interruption Frequency Index – Index of the average number of interruptions in the system per consumer) on monthly level and under voltage levels from the electricity distribution system operators is conducted

through a monitoring web platform. In 2024 data were delivered for outages according to voltage levels, category planned and unplanned outages, as well as for the indexes for continuity in electricity supply.

In 2024 Elektrodistribucija DOOEL Skopje continued collecting and delivering the calculated indexes for continuity in electricity supply for 35 kV and 10kV voltage levels, but not for 0.4 kV voltage level, whereby indexes are presented cumulatively.

In the electricity transmission system for 2024 349 outages were registered with total duration of 39,654 hours out of which 340 outages were planned disconnections due to regular inspections or maintenance, whereas the other 9 were due to failures or certain events in the electricity transmission system (Table 2.21).

Table 2.21 Number of planned and unplanned outages in the electricity transmission network in the period 2018 - 2024

Year	Type of outages	Indicator	Transmission lines 400 kV	Transmission lines 100 kV	Lines - junction field	Lines - measurement field	Transformers 400/100 kV	Total
2018	Planned	Number	56	426	0	0	23	**505**
		(min)	39,929	274,251	0	0	878	**315,058**
	Unplanned	Number	15	283	0	0	6	**304**
		(min)	242	20,048	0	0	144	**20,434**
2019	Planned	Number	37	364	0	0	15	**416**
		(min)	154,380	379,368	0	0	5,156	**538,904**
	Unplanned	Number	15	203	0	0	3	**221**
		(min)	1,469	15,077	0	0	98	**16,644**
2020	Planned	Number	39	328	0	0	24	**392**
		(min)	56,774	476,909	0	0	83,903	**617,689**
	Unplanned	Number	12	271	0	0	4	**287**
		(min)	228	7.231	0	0	85	**7,544**
2021	Planned	Number	20	278	0	0	12	**310**
		(min)	370,961	364,767	0	0	110,580	**846,309**
	Unplanned	Number		17	0	0	3	**20**
		(min)		5,060	0	0	5,557	**10,617**
2022	Planned	Number	32	408	3	2	22	**467**
		(min)	71,085	1,011,294	11,906	158	97,259	**1,191,702**
	Unplanned	Number	3	216	0	0	6	**225**
		(min)	11	273,139	0	0	920	**274,070**
2023	Planned	Number	33	308	5	0	34	**380**
		(min)	106,108	1,540,121	64,191	0	292,153	**2,002,573**
	Unplanned	Number	0	4	0	0	0	**4**
		(min)	0	672	0	0	0	**672**
2024	Planned	Number	38	265	2	0	35	**340**
		(min)	413,487	1,188,020	421	0	738,687	**2,340,615**
	Unplanned	Number	0	8	0	0	1	**9**
		(min)	0	38,612	0	0	27	**38,639**

The average duration for repairing the failures in the electricity transmission network in 2024 is 113.62 hours. In 2024 the total number of outages was increased compared to 2023 when it was 87.4 hours, and the duration is also increased by 30%.

The graphic presentation of outages and duration of the outages in the electricity transmission network is presented in the following charts 2.12 and 2.13.

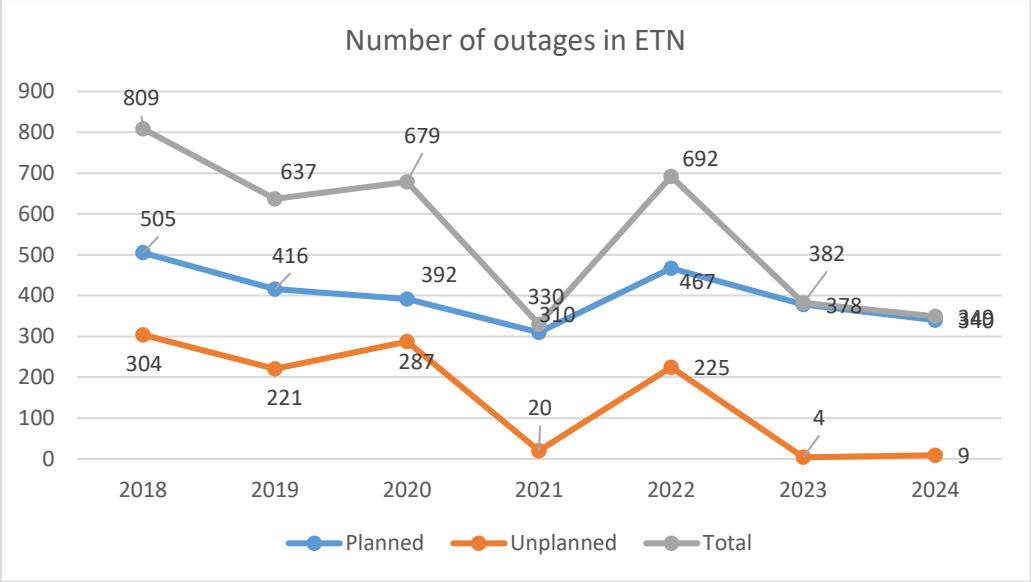


Chart 2.12 Number of planned and unplanned outages in the electricity transmission network in the period 2018 - 2024

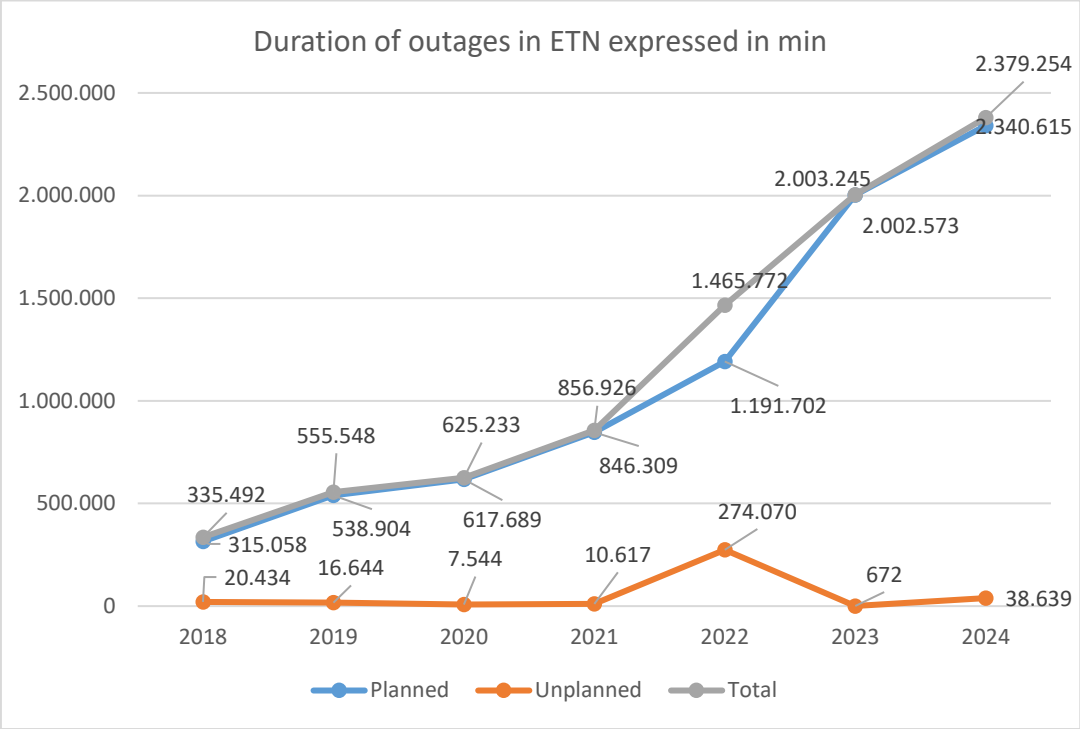


Chart 2.13 Duration of planned and unplanned outages in the electricity transmission network in the period 2018 - 2024

In 2024 in the electricity distribution system of Elektrodistribucija DOOEL Skopje the total number of outages was 49,147 with total duration of 283.3 (Table 2.22). Out of the total number of outages, planned outages were 2,476 which occurred due to regular inspections, maintenance and connection of new users of the electricity distribution network, whereas 46,672 outages were due to failures and other circumstances in the electricity distribution network. In 2023 the number of outages was 45,420 with total duration of 148.7 hours.

In 2024 the number of outages compared to 2023 was increased by 5.3%. When it comes to the total duration of the outages, this was also increased by 90.4%. This increase of the duration of the outages happened due to the failure of 110kV line Skopje 4 - Aerodrom and 110kV line Skopje 4 - East, caused by force majeure (storm) in the central city area of Skopje which took longer time for repair, and most of the consumers were left without electricity.

Table 2.22 Number and duration of planned and unplanned outages in the electricity distribution network in the period 2018 - 2024

Year	Type of outages	Indicator	35 kV	10(20) kV	0.4 kV	Total
2018	Planned	Number	106	3,225	NA	**3,331**
		(min)	24,187	682,188	NA	**706,375**
	Unplanned	Number	589	10,577	26,697	**37,863**
		(min)	54,623	1,532,722	5,051,916	**6,639,261**
2019	Planned	Number	112	3,395	NA	**3,507**
		(min)	18,323	621,899	NA	**640,222**
	Unplanned	Number	471	10,011	23,318	**33,800**
		(min)	24,644	1,105,335	5,816,320	**6,946,299**
2020	Planned	Number	92	2,971	NA	**3,063**
		(min)	10,767	639,850	NA	**650,617**
	Unplanned	Number	490	9,542	25,253	**35,285**
		(min)	19,033	1,252,818	5,791,362	**7,063,213**
2021	Planned	Number	119	3,031	NA	**3,150**
		(min)	18,743	562,420	NA	**580,163**
	Unplanned	Number	458	9,798	28,910	**39,166**
		(min)	31,407	1,468,326	7,152,740	**8,652,473**
2022	Planned	Number	92	2,861	NA	**2,953**
		(min)	13,016	605,376	NA	**618,392**
	Unplanned	Number	497	8,845	26,278	**35,620**
		(min)	27,608	1,117,612	6,801,536	**7,946,756**
2023	Planned	Number	141	2,762	NA	**2,903**
		(min)	15,880	532,009	NA	**547,889**
	Unplanned	Number	446	8,980	33,083	**42,517**
		(min)	37,395	1,387,763	6,951,806	**8,376,964**
2024	Planned	Number	139	2,337	NA	**2,476**
		(min)	15,480	442,894	NA	**458,374**
	Unplanned	Number	415	7,064	39,192	**46,671**

(min)	32,932	730,125	15,769,461	**16,532,508**

The graphic presentation of the number of outages and duration of the outages in the electricity transmission network is presented in the following charts 2.14 and 2.15.

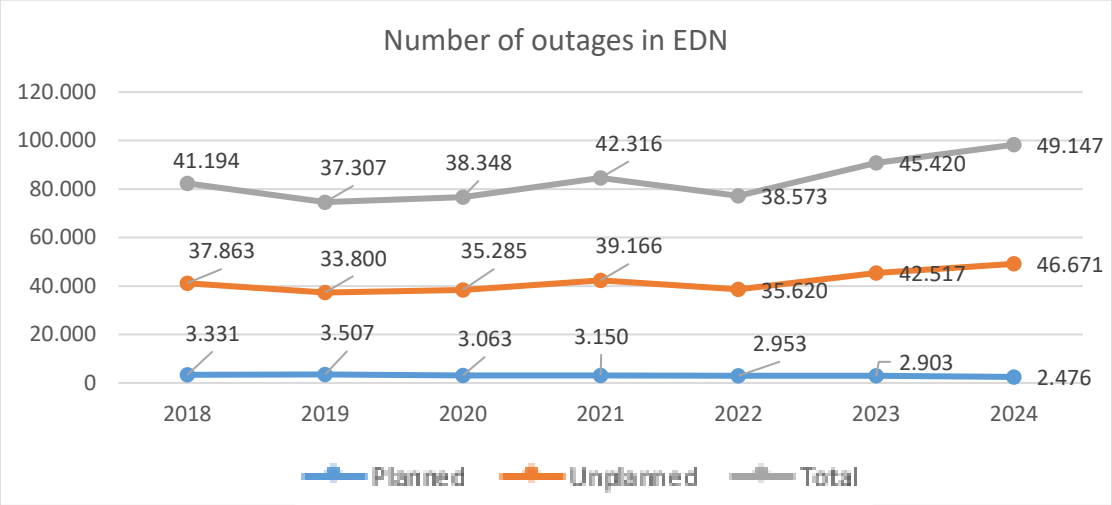


Chart 2.14 Number of planned and unplanned outages in the electricity distribution network in the period 2018 - 2024

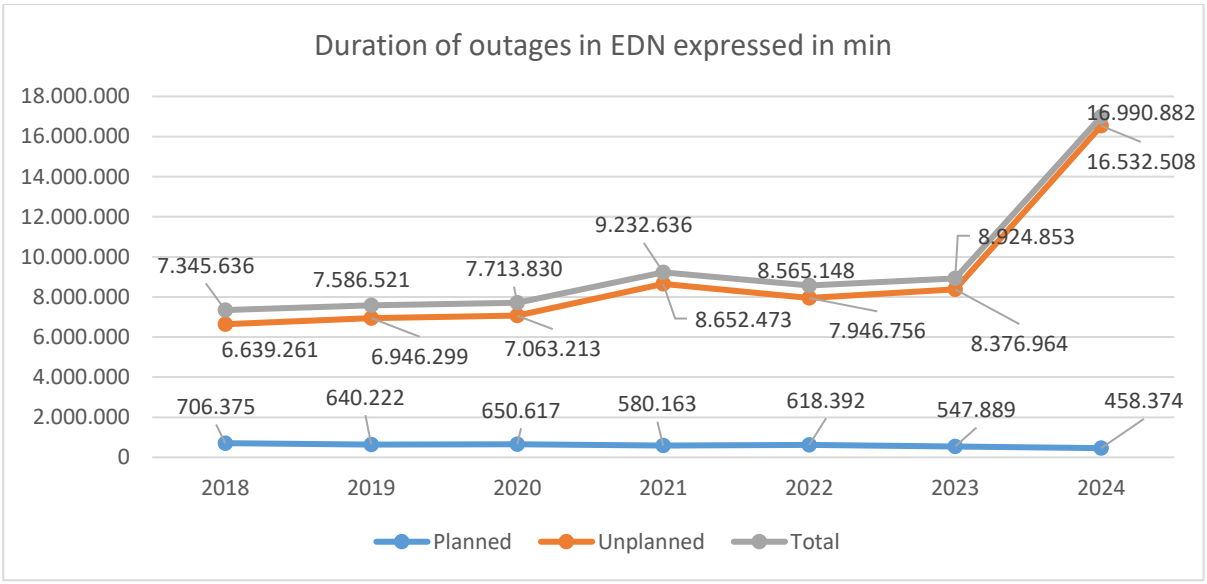


Chart 2.15 Duration of planned and unplanned outages in the electricity transmission network in the period 2018 - 2024 (in min)

Values of the indicators for continuity in the supply are presented in Table 2.23.

Table 2.23 Continuity indicators in the supply of the electricity distribution network of Elektrodistribucija DOOEL Skopje in 2024

Type of indicator	35 kV	10 kV	average
SAIDI	60	571	631
SAIFI	3	18	21

One of the activities of the Energy Regulatory Commission in the following period shall be the setting of target levels for establishing an awarding and fines system for DSOs if they are not within the frames of target levels of the values of the indicators of continuous supply.

2.6.6 FEES FOR GRID SERVICES

In line with the Law on Energy*, the Energy Regulatory Commission adopts Decisions for setting Maximum Allowed Revenue, the Regulated Average Tariff and Tariffs on Calculation of Elements for performing the regulated energy activity of – electricity transmission, electricity distribution and organization and management of the electricity market while it controls the prices for electricity supply for households and small consumers.

When determining the tariffs for conducting energy activities electricity transmission, organization and management of the electricity market and electricity distribution, the Rules for Method and Conditions for defining the regulated maximum revenue and regulated average tariffs and Tariff Systems for electricity transmission and for electricity market, i.e., the Tariff system for electricity distribution for the consumers connected to the electricity distribution system to Elektrodistribucija DOOEL Skopje and the tariff system for electricity distribution for the consumers connected to the electricity distribution system of JSC ESM Skopje.

In December 2023 the Energy Regulatory Commission made decisions for prices and tariffs for transmission, distribution, organization and management of the electricity market applicable as of January 1st, 2024.

The Energy Regulatory Commission, while making the decisions, regulates the regulated maximum allowed revenue which, in addition to the basic revenue, takes into account the costs for procurement of electricity to cover losses, liquidity assets, transferred costs and the correction factor which presents the difference between recognized and estimated costs.

JSC MEPSO Skopje invoices the fee for use of the electricity transmission system defined based on the tariffs for the calculation elements which consist of the top active power, the active electricity and the reactive electricity.

The fee for use of the electricity transmission system is paid by all users of the electricity transmission system: consumers directly connected to the electricity transmission system, that are independent in the electricity market, electricity producers connected to the electricity transmission system for electricity who consume electricity for their own needs, electricity suppliers, electricity traders and DSOs.

The fee for using the electricity distribution system is paid by all users of the electricity distribution system, the consumers connected to it and electricity producers, connected to the electricity transmission and distribution system for personal needs, in the cases when they are in the capacity of consumers when they do not produce electricity.

The amount of regulated average tariffs on electricity transmission in the last six years is enclosed in Table 2.24 and Chart 2.16.

Table 2.24 Average tariffs for electricity transmission 2018 - 2024 (in mkd/kWh and %)

Year	2018	2019	2020	2021. 6.30	2021. 12.31	2022. 6.29	2022. 12.29	2023. 6.27	2023. 12.22	2024. 02.22	10/9 (%)
	1	2	3	4	5	6	7	8	9	10	11
Average transmission tariffs for electricity (mkd/kWh)	0.2053	0.1757	0.1952	0.2754	0.3409	0.3407	0.3113	0.2582	0.2935	0.3101	+5.65

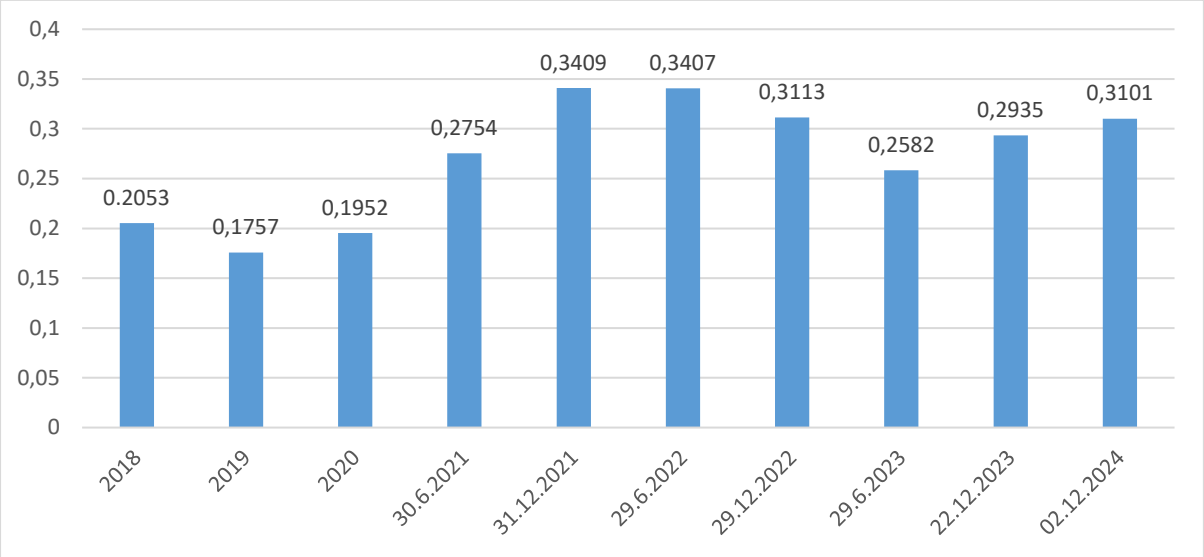


Table 2.16 Average electricity transmission tariffs in the period 2018 - 2024 (in mkd/kWh)

The tariffs of calculation elements for consumer categories are composed by power, active electricity, and reactive electricity and prices are determined for them, based on which Elektrodistribucija DOOEL Skopje, as a performer of the energy activity of electricity distribution, invoices the fee to respective consumers, for using the electricity distribution system.

The amount of regulated average tariffs for electricity distribution of the electricity distribution system of Elektrodistribucija DOOEL Skopje, without the average tariff for electricity transmission in the past six years, is presented in Table 2.25 and Chart 2.17 below.

Table 2.25 Average tariffs for electricity transmission 2018 - 2024 for Elektrodistribucija DOOEL Skopje (in mkd/kWh and %)

Year	2018	2019	2020	2021. 6.30	2021. 12.31	2022. 6.29	2022. 12.29	2023. 6.27	2023. 12.22	2024. 02.12	10/9 (%)
	1	2	3	4	5	6	7	8	9	10	11
mkd/ kWh	1.4084	1.4963	1.5393	1.5192	2.1325	2.579	2.0697	2.1135	2.3960	2.2638	-5.52

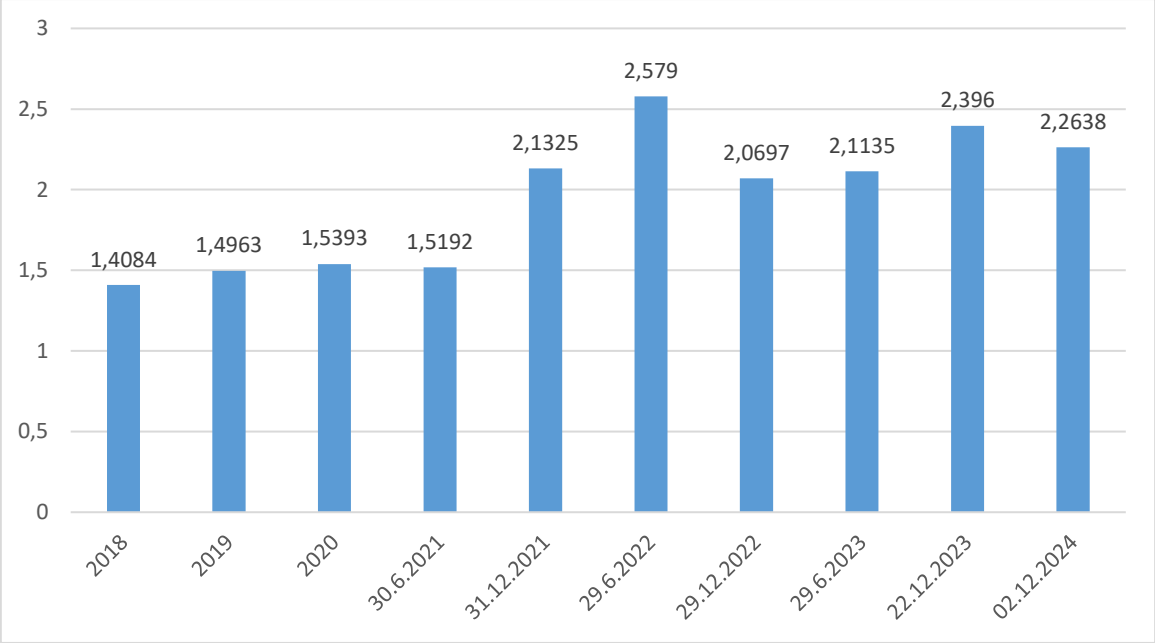


Chart 2.17 Average tariffs for electricity distribution 2018 - 2024 for Elektrodistribucija DOOEL Skopje (in mkd/kWh and %)

The amount of regulated average tariffs for electricity distribution of the electricity distribution system of JSC ESM Skopje, without the average tariff for electricity transmission in the past six years, is presented in Table 2.26 and Chart 2.18 below.

Table 2.26 Average tariffs for electricity transmission 2018 - 2024 for JSC ESM Skopje (in mkd/kWh and %)

2018	2019	2020	2021. 6.29	2021. 7.29	2021. 12.31	2022. 7.29	2022. 7.12	2023. 6.29	2024. 1.31	2024. 1.31	11/9 (%)
1	2	3	4	5	6	7	8	9	10	11	12
0,2258	0,1943	0,1895	0,2106	0,2106	0,2106	0,1964	0,1964	0,2184	0,2810	0,3199	+13,84

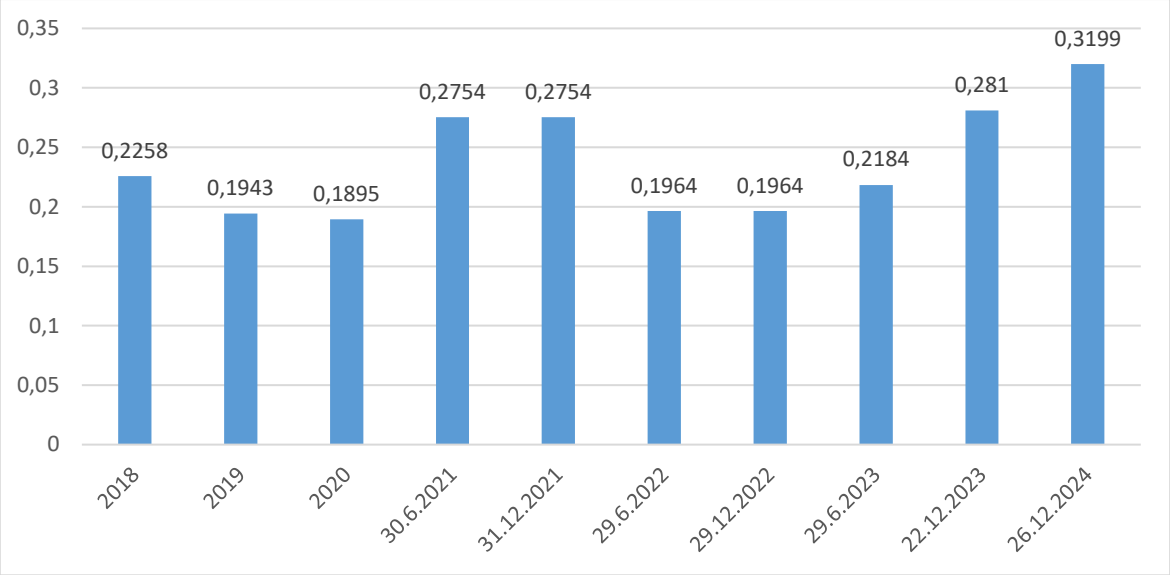


Chart 2.18 Average tariffs for electricity distribution 2018 - 2024 for JSC ESM Skopje (in mkd/kWh and %)

Annexes 12.4, 12.5 and 12.6 provide an overview of tariffs for calculation elements for electricity transmission and distribution for the period between 2018 - 2024.

2.7 ELECTRICITY MARKET

In 2024 the electricity market continued its trends from 2023, thus marking the year of stabilization following the crisis in energy supply which struck the energy sector of the Republic of North Macedonia as a whole.

In the course of 2024, the number of active electricity suppliers was 21, and they supplied the consumers for prices which were formed freely at the electricity market. This means that the electricity market maintains the competitiveness and the consumers receive offers from the suppliers/traders. The market activities were such that the electricity consumers who are not part of the small consumers category had prices which were by 8.56% lower than the average prices for this category of consumers compared to 2023.

The gross consumption in 2024 marks a growth of 2.24% compared to 2023 whereas compared to 2022 there is a fall amounting to 3.05%. Compared to 2023 the net consumption in 2024 marks an increase of 1.99% whereas in comparison to 2022 there is a decrease of 3.87%.

2.7.1 ELECTRICITY MARKET OPERATOR

MEMO DOOEL Skopje performs the energy activity referring to the electricity market organization and management, based on the license issued by the Energy Regulatory Commission.

Each year the Energy Regulatory Commission approves the maximum allowed revenue and the regulated average tariff for regulated energy activity performance referring to organization and management of the electricity market. Table 2.27 presents the fee for use of the electricity market in the last 5 years.

Table 2.27 Fees for the electricity market in the period from 2018 to 2024 (in MKD per kWh)

2018	2019	2020	2021	2022	2023	2024
0.0018	0.0049	0.0081	0.0080	0.0086	0.0090	0.0122

The fee for using the electricity market on behalf of consumers is paid by suppliers or traders under concluded contract on supply, i.e., electricity sale, as well as consumers, which in accordance with the Rules on Electricity Market, are registered to participate in the electricity market. The fees for the electricity market are paid by both the TSO and the DSOs in purchasing electricity to cover losses.

2.7.2 ALLOCATING CROSS-BORDER CAPACITIES

One of the obligations of JSC MEPSO Skopje, as a TSO, is to allocate cross-border transmission capacities in a transparent, non-discriminatory, and market-oriented manner, according to which all parties shall have equal access.

JSC MEPSO Skopje, allocates cross-border transmission capacities in accordance with the Rules on Allocation of Cross-Border Transmission Capacities ("Official Gazette of the Republic of North Macedonia'' no. 228/19 and ''Official Gazette of the Republic of North Macedonia'' no. 294/2020) approved by the Energy Regulatory Commission. In accordance with these rules, cross-border capacities can be allocated via coordinated auction, joint auction with neighbouring TSOs and one share (50%) of the available cross-border transmission capacity can be allocated unilaterally.

In the border with Greece and in the border with Kosovo, a coordinated auction is conducted through the Coordinated Auction Office in Southeast Europe in Podgorica, Montenegro.

In the border with Bulgaria and Serbia, joint auctions are performed in an annual, monthly, daily, and intra-day level. In the border with Serbia JSC MEPSO Skopje conducts annual and monthly auction with Serbia, while Elektromreza of Serbia, the electricity transmission operator of Serbia, conducts daily and intra-day auctions. In the border with Bulgaria, JSC MEPSO Skopje, conducts annual and monthly auction, while Elektroenergetski Sistem Operator of Bulgaria, the electricity transmission system operator of Bulgaria, conducts daily auction. The intra-day auction is not conducted in this border. Bilateral rules for joint auctions in both borders are approved by the Energy Regulatory Commission.

Table 2.28 Revenues (in EUR) deriving from congestions of cross-border capacities for the period from 2018 to 2024 according to border and type of auction

Year	Type of auction	BG-MK	GR-MK	KS-MK	MK-BG	MK-GR	MK-KS	MK-RS	RS-MK	Total
2018	**Total**	**5,408,656**	**1,121,175**	**0**	**57.748**	**11,738,481**	**0**	**2,335,514**	**1,472,003**	**22,133,577**
	Annual	974.280	216.804	0	42.360	3,790,884	0	262.800	459.899	5,747,027
	Monthly	4,398,390	642.258	0	11.040	5,568,075	0	1,486,315	682.870	12,788,948
	Daily	35.986	262.113		4.348	2,379,522	0	586.399	329.234	3,597,602
2019	**Total**	**4,242,040**	**1,290,044**	**0**	**34.675**	**12,994,310**	**0**	**973.472**	**1,806,734**	**21,341,275**
	Annual	3,164,600	477.420	0	0	3,114,180	0	350.400	306.600	7,413,200
	Monthly	963.860	633.788	0	26.587	8,376,422	0	456.552	1,124,528	11,581,737

	Daily	113.580	178.836	0	8.088	1,503,708	0	166.520	375.606	2,346,338
2020	**Total**	**997.434**	**450.581**	**352**	**129.318**	**6,366,419**	**90.808**	**429.992**	**2,895,550**	**11,360,454**
	Annual	254.875	162.504	0	42.480	2,415,600	0	175.680	439.200	3,490,339
	Monthly	610.890	109.241	0	56.324	3,923,609	0	137.897	1,986,000	6,823,961
	Daily	131.669	178.836	352	30.514	27.210	90.808	116.415	470.350	1,046,154
2021	**Total**	**2,826,335**	**852.010**	**324.887**	**31.514**	**3,957,594**	**709.906**	**1,520,016**	**3,725,876**	**13,948,138**
	Annual	388.800	166.440	163.704	0	1,322,760	51.696	12.996	647.917	2,754,313
	Monthly	2,126,200	630.394	150.936	18.592	2,530,266	644.390	400.408	2,201,846	8,703,032
	Daily	311.335	55.176	10.247	12.922	104.568	13.820	1,106,612	876.113	2,490,793
2022	**Total**	**13,148,308**	**3,309,593**	**362.165**	**31.514**	**8,210,505**	**2,139,170**	**9,218,832**	**7,797,509**	**44,217,596**
	Annual	1,236,700	538.740	151.200	0	919.800	341.280	259.200	1,166,400	4,613,320
	Monthly	11,613,499	2,417,215	206.191	18.592	6,328,731	1,686,268	5,096,536	5,146,972	32,514,004
	Daily	298.109	353.638	4.774	12.922	961.974	111.622	3,863,096	1,484,137	7,090,272
2023	**Total**	**7,687,815**	**3,178,435**	**391.543**	**1,063,922**	**11,431,384**	**3,204,924**	**4,961,354**	**7,026,317**	**38,945,694**
	Annual	4,241,227	1,859,304	133.920	758.880	3,449,244	1,339,200	1,755,110	2,008,360	15,545,245
	Monthly	2,749,323	1,299,412	247.786	53.640	7,884,492	1,856,686	2,651,985	3,998,060	20,741,384
	Daily	697.265	19.719	9.837	251.402	97.648	9.038	554.259	1,019,897	2,659,065
2024	**Total**	**3,446,607**	**2,660,970**	**484.129**	**1,499,857**	**8,113,217**	**2,301,021**	**2,454,516**	**4,787,455**	**25,747,772**
	Annual	1,415,167	1,152,900	209.664	127.880	3,656,340	729.792	776.159	1,380,060	9,447,962
	Monthly	1,478,405	1,335,380	254.417	420.102	4,392,200	1,549,573	1,021,107	2,662,470	13,113,654
	Daily	553.035	172.690	20.048	951.875	64.677	21.656	657.250	744.925	3,186,156

JSC MEPSO Skopje charges for cross-border capacities only in the case when congestions occur.

The revenues that derive from congestions, as enclosed in the table below, are considered as a revenue when setting the maximum allowed revenue and tariff for performing the activity of electricity transmission, because the Energy Regulatory Commission accepts the costs for the construction of new interconnection transmission lines and the maintenance of the existing ones when setting the base revenue.

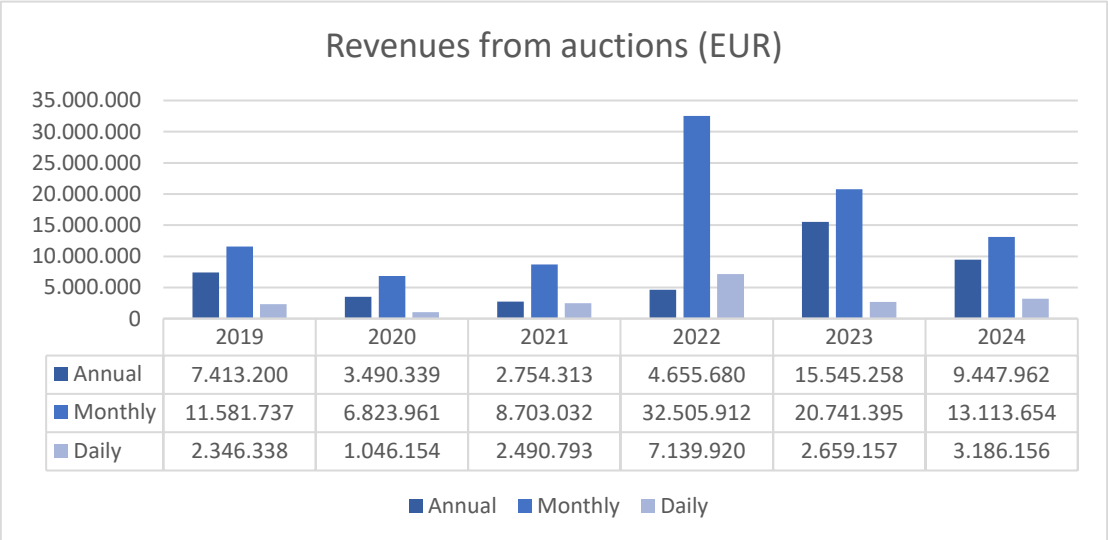


Table 2.19 Revenues (in EUR) deriving from congestions of cross-border capacities for the period from 2019 to 2024 according to border and type of auction

The data enclosed in Table 2.28 demonstrate that the revenues of the electricity transmission system operator, which derive from the allocation of cross-border transmission capacities, in 2024 are lower by 33/89% compared to the revenues accomplished in 2023. Compared to previous years, the revenues of allocating cross-border transmission capacities are gradually restoring to the level of the period before the health crisis. As in the recent years presented on Chart 2.19 the largest portion of revenues in 2024 was realized in monthly auctions, while the lowest revenues were realized in daily auctions.

The electricity transmission system operator realized the largest revenue in the MK-GR border in a value of more than 4.4 million EUR.

The tendency is to reduce congestions in the cross-border transmission capacities through different regulatory mechanisms, improving the processes and procedures that are conducted by TSOs, through transparent calculation of the net-transmission capacity, efficient capacity usage etc. In addition, it is expected that when applying coordinated calculation of the net transmission capacities, will contribute to changes in the current situation.

2.7.3 WHOLESALE ELECTRICITY MARKET

The electricity wholesale market comprises the market on bilateral agreement, the organized market, the day-ahead and the intra-day market, and balancing market.

Since 1 July 2019, the wholesale electricity market is fully liberalized, i.e., the suppliers, traders, and producers of electricity without prior consents, i.e., approvals by the Energy Regulatory Commission, are entitled to conclude mutual agreements on electricity purchase and sale. This is due to the dissolution of the Energy Regulatory Commission in regulating the price on electricity production by the largest electricity producer in the Republic of North Macedonia, JSC ESM Skopje since 1 July 2019.

EVN HOME DOO Skopje, participates in the wholesale electricity market, performing the activity of electricity supply and it has the obligation to provide universal service in line with its license. EVN HOME DOO Skopje is a universal electricity supplier and electricity supplier as a last resort.

2.7.3.1 BILATERAL AGREEMENTS MARKET

In 2024, there were 827 active participants in the electricity market on bilateral agreement, whereby 34 appeared as traders / suppliers, and 792 as electricity producers (Table 2.29).

Table 2.29 Number of active domestic producers and traders / suppliers in the Market on Bilateral Agreement

YEARS	2022	2023	2024
TOTAL ACTIVE DOMESTIC PRODUCERS	**251**	**613**	**792**
TOTAL ACTIVE TRADERS/SUPPLIERS	**27**	**34**	**34**
Traders/suppliers that purchased from domestic producers	14	18	19
Traders/suppliers that purchased from other traders/suppliers	26	31	33

Traders/suppliers that imported	18	20	23
Traders/suppliers that purchased from TSO for compensation	1	0	0
Traders/suppliers selling to other traders/suppliers	15	16	20
Traders/suppliers selling to TSO for compensation	3	0	0
Traders/suppliers exporting	18	27	13
Traders/suppliers transiting	18	19	23

2.7.3.2 DOMESTIC PRODUCERS

The share of electricity sold by domestic electricity producers in the electricity market on bilateral agreements in 2024 is presented in Chart 2.20:

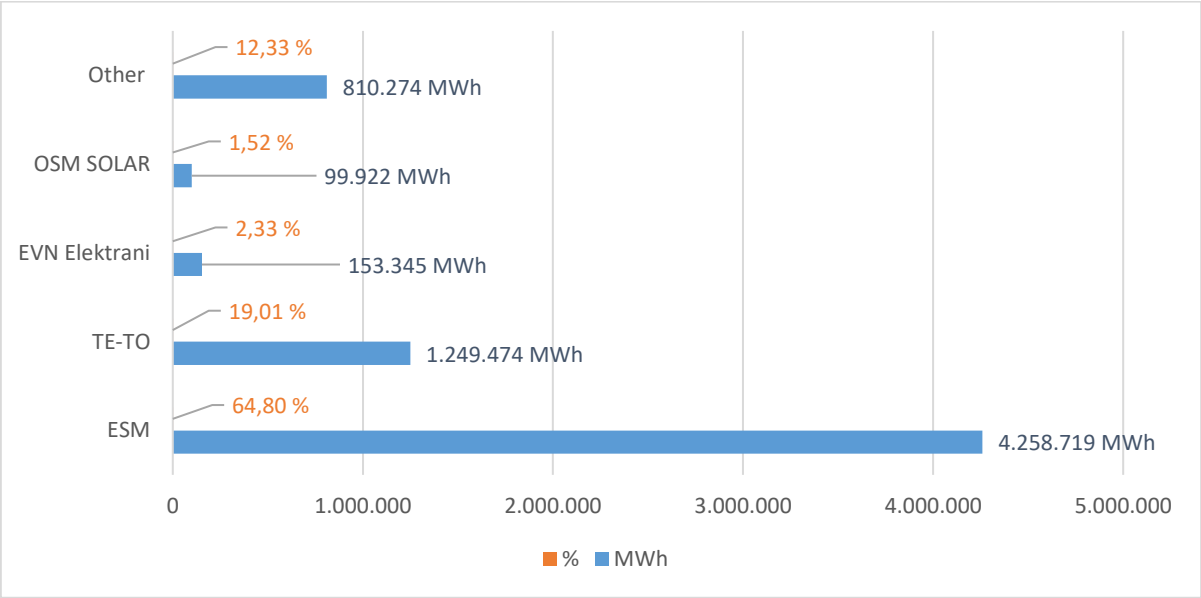


Chart 2.20 Share of domestic producers in the electricity market on bilateral agreements in 2024 (in MWh and %)

Chart 2.20 shows that the greatest part in the sale on the market of bilateral agreements was achieved by JSC ESM Skopje with 64.80%, followed by JSC TETO Skopje with 19.01%, EVN Elektrani with 2.33% and OSM Solar with 1.52%, whereas the remaining producers have 12.33% share in the sale on the market of bilateral agreements.

The accomplished sales and average prices of domestic producers in the electricity market on bilateral agreements in 2022, 2023 and 2024 are presented in Table 2.30.

Table 2.30 Accomplished sales and average prices of domestic producers in the electricity market on bilateral agreements in 2022, 2023 and 2024

Year	2022		2023		2024	
	MWh	mkd/MWh	MWh	mkd/MWh	MWh	mkd/MWh
Total/average	6,138,869	7,189.76	6,910,047	5,280.67	6,751,734	4,760.91

The analysis of the data in Table 2.30 indicates that in 2024, the achieved sale by domestic producers in the electricity market on bilateral agreement has decreased by 2.29 % when compared to 2023. Annually, in 2024, the average sale price is 9.84% lower than in

2023. This price fluctuation is due to the fact that after the energy crisis, which was mostly felt in 2022, in 2023 stabilization of the situation started and it continued in 2024.

2.7.3.3 TRADERS AND SUPPLIERS

The overall quantity of electricity traded in the wholesale electricity market in 2024 is 3,612,391 Mwh which is 3.8% % lower in relation to 2023. The largest share in the traded quantities on the domestic market in 2024, are by TE-TO JSC Skopje with 32.15%, followed by ESM Prodazhba with 16.70 %, and GEN-I Prodazhba with 8.76% (Chart 2.21).

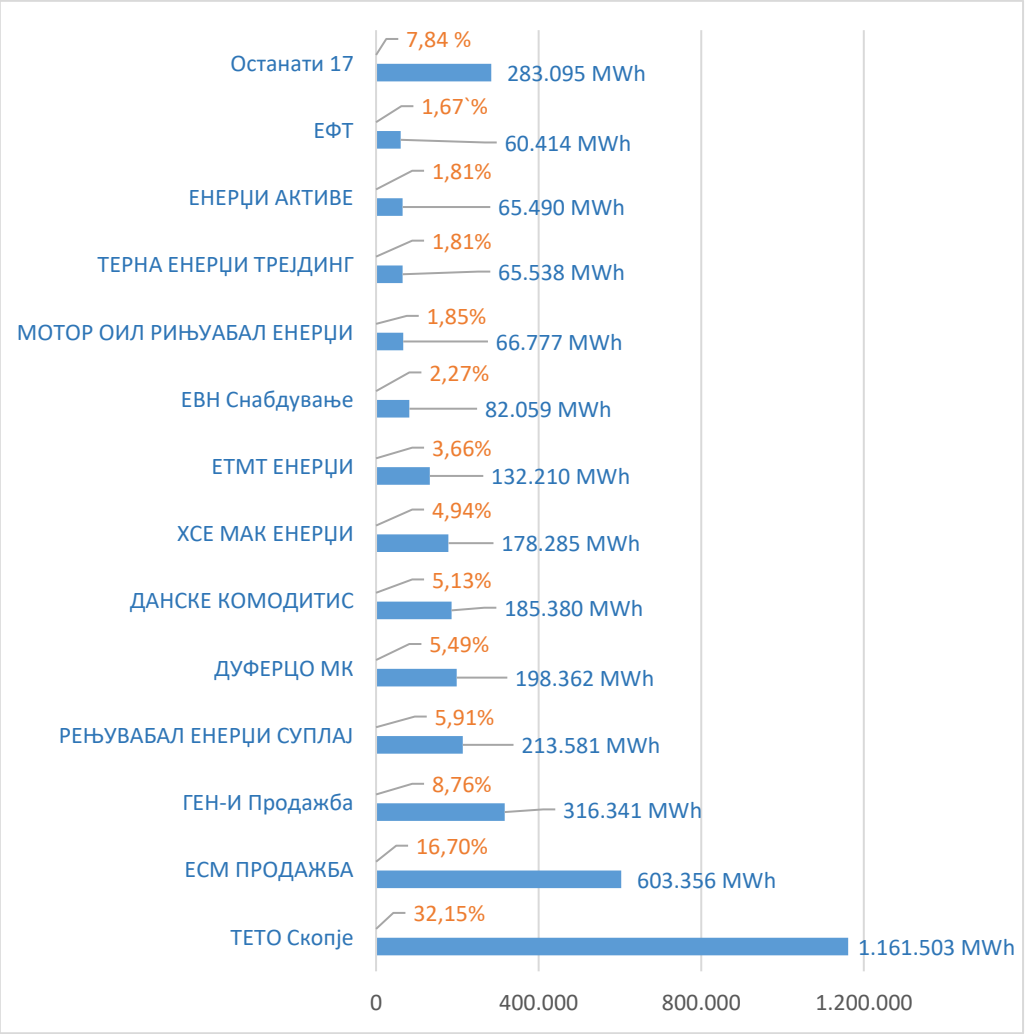


Chart 2.21 Market share of traders/suppliers in sale accomplished on the electricity market on bilateral agreements in 2024 (in MWh and %)

Tables 2.31 and 2.32 give overall presentation of the accomplished sales and market shares int he trade transactions on the wholesale electricity market in 2024, as well as a presentation of the accomplished sales and average prices from traders/suppliers on the electricity market of bilateral agreements in 2022, 2023 and 2024.

The average selling price for electricity from traders/suppliers on the wholesale market in 2024 was 6,450.6 MKD/MWh, i.e., 104.88 €/Mwh and was by 10.08% lower than the price in 2023 (7,174.1 MKD/MWh), i.e., by 60% lower than the price in 2022 which amounted to 16,131.9 MKD/MWh i.e., 262.31 EUR/MWh.

Table 2.31 Accomplished sales and market share of traders/suppliers on the electricity market of bilateral agreements in 2024

Ред. Бр.	Трговец/снабдувач	MWh	%
1	ТЕТО Скопје	1,161,503	32.15
2	ЕСМ ПРОДАЖБА	603,356	16.70
3	ГЕН-И Продажба	316,341	8.76
4	РЕЊУВАБАЛ ЕНЕРЏИ СУПЛАЈ	213,581	5.91
5	ДУФЕРЦО МК	198,362	5.49
6	ДАНСКЕ КОМОДИТИС	185,380	5.13
7	ХСЕ МАК ЕНЕРЏИ	178,285	4.94
8	ЕТМТ ЕНЕРЏИ	132,210	3.66
9	ЕВН Снабдување	82,059	2.27
10	МОТОР ОИЛ РИЊУАБАЛ ЕНЕРЏИ	66,777	1.85
11	ТЕРНА ЕНЕРЏИ ТРЕЈДИНГ	65,538	1.81
12	ЕНЕРЏИ АКТИВЕ	65,490	1.81
13	ЕФТ	60,414	1.67
14	СОЛЕ 24	57,556	1.59
15	ФУТУРЕ ЕНЕРЏИ	40,072	1.11
16	ПЕТРОЛ ЕНЕРГЕТИКА	37,826	1.05
17	УНИВЕРЗАЛ ЕНЕРЏИ	29,633	0.82
18	ПРОТЕРГИА	25,986	0.72
19	ИНФИНИТ ЕНЕРЏИ	25,131	0.70
20	АОТ ЕНЕРЏИ	16,567	0.46
21	ЕНЕРЏИ СУПЛАЈ М	15,867	0.44
22	ЕДС	10,416	0.29
23	ИНТЕРЕНЕРГО	8,828	0.24
24	ЕЛНОР	7,450	0.21
25	МЕГА КОНЦЕПТ	4,507	0.12
26	ГРИНКОР ТРЕЈД Гевгелија	1,850	0.05
27	ГРИН ГРИД ДООЕЛ Скопје	1,122	0.03
28	ГРИН ГРИД ДООЕЛ Скопје	184	0.01
29	ТРЕЛИНГ	100	0.00
30	ЏИ ЕНЕРЏИ Скопје	1	0.00

Table 2.32 Accomplished sales and average prices of traders/suppliers on the electricity market on bilateral agreements in 2022, 2023 and 2024

Year	2022		2023		2024	
	MWh	mkd/MWh	MWh	mkd/MWh	MWh	mkd/MWh
Total/average	3,148,066	16,131.9	3,754,800	7,174.1	3,612,391	6,450.6

In order to see the corelation of the trade activities on the wholesale electricity market in the country, Table 2.33 gives presentation of the average annual prices for base energy day-ahead and for the top energy day-ahead, accomplished on the Hungarian electricity market (HUPX), as well as on the Macedonian electricity market MEMO PDO. The data for MEMO PDO presents only data for 2024 because that is the first whole year in which the Macedonian market has functioned. In 2024 the average import price of electricity was by 11.7% lower compared to the average price for base energy day-ahead accomplished on the HUPX. Also, in 2023 the average import price was higher than the average price for base energy day-ahead accomplished on HUPX by 9.37% whereas in 2022 the average import price was lower than the average annual prices for base energy day-ahead accomplished on HUPX by 6.18% in 2022. More specifically, in 2024 the price for import of electricity was higher by 9.32% than the average price which was used for trading on the Macedonian market.

Table 2.33 Presentation of HUPX DAM prices for base and peak energy and average import price of electricity in 2022, 2023 and 2024 (in EUR for MWh)

Average annual prices	2022 EUR/MWh	2023 EUR/MWh	2024 EUR/MWh
HUPX Base load average	271.67	106.82	100.81
HUPX Peak load average	288.64	110.05	100.71
Import price	248.69	116.83	112.07
MEMO PDO average			102.51

On the other hand, the comparison of the average import price to the average price for peak energy day ahead, accomplished on HUPX, points out to the fact that in 2024 the average import price is by 11.28% higher than the price on the HUPX market, in 2023 higher by 5.74%, whereas in 2022 the import prices were by 13.84% lower compared to the prices on the HUPX for peak energy day ahead.

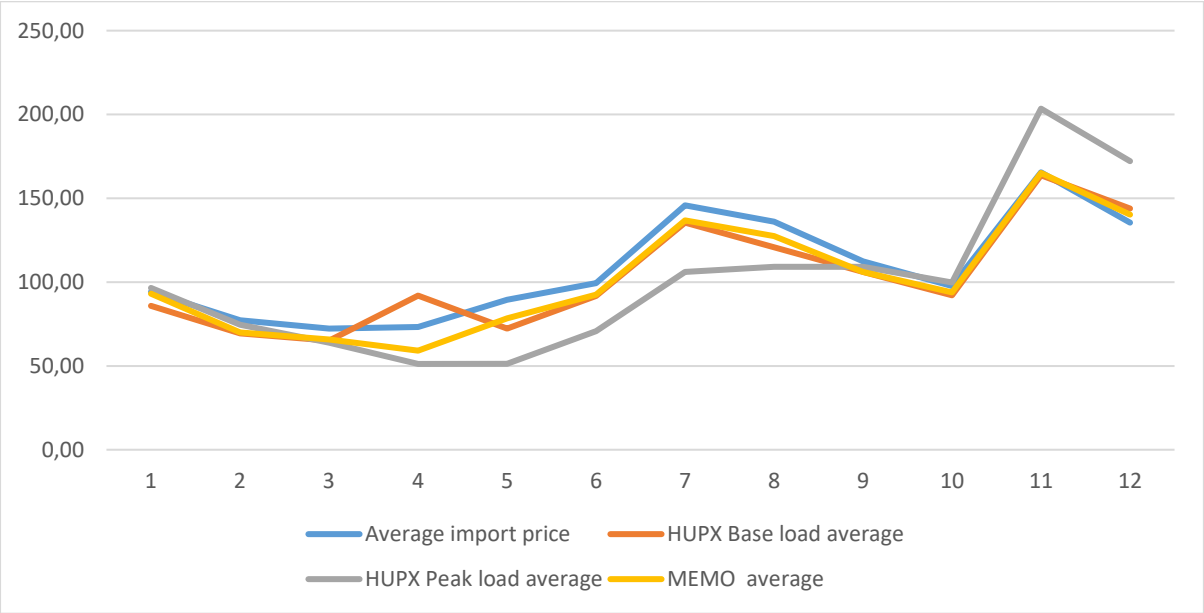


Chart 2.22 Presentation of average monthly HUPX DAM prices for base and peak energy and average monthly import prices of electricity in 2024 (in EUR for MWh)

The accomplished import of electricity from traders/suppliers in 2024 is presented on Chart 2.23.

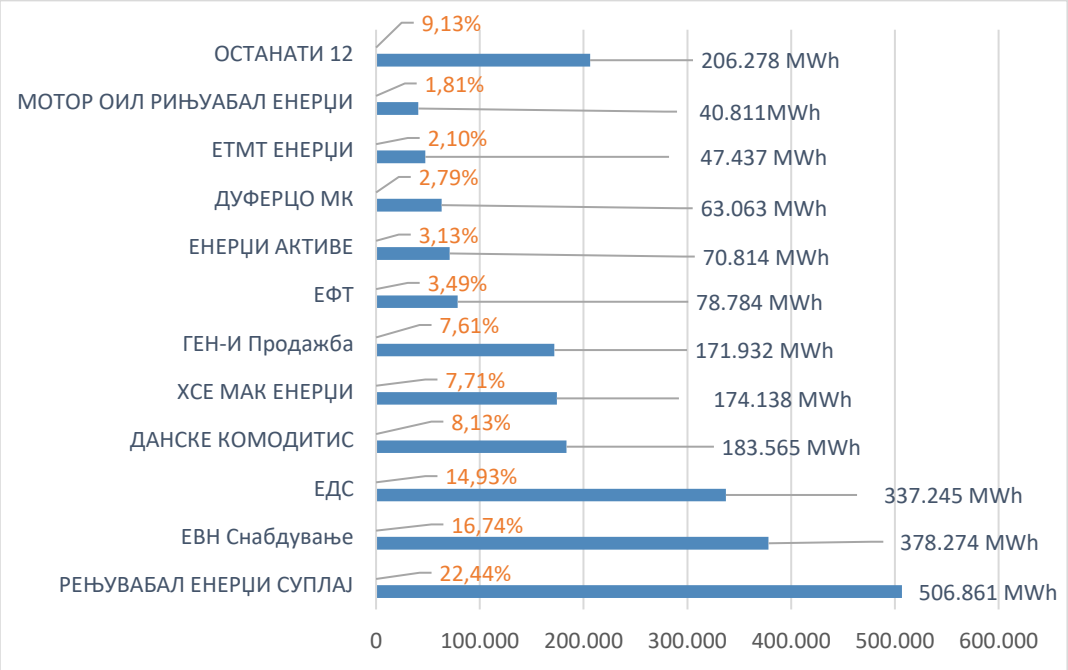


Chart 2.23 Accomplished import of electricity from traders/suppliers in 2024

With regards to the import of electricity in 2024 23 traders/suppliers have been active, out of which the largest is RES Energy Supply 2ith 22.44% int he total import, followed by EVN Elektrosnabduvanje with 16.74% and the others presented in Chart 2.23.

2.7.3.4 MARKET OF BALANCE ENERGY

In 2024 JSC MEPSO Skopje determined that the electricity energy system, beside the primary reserves, needs capacity for secondary (aFRR) and tertiary reserve (mFRR) for regulation, as presented in Table 2.34.

Table 2.34 Necessary capacity for secondary (aFRR) and tertiary (mFRR) reserve in 2024

Value	aFRR		mFRR	
min	neg.	pos.	neg.	pos.
min	-33	16	-30	140
max	-16	33	-30	140

In December 2024, JSC MEPSO Skopje conducted an auction on annual reserve purchase for secondary regulation for 2024 on monthly level, while the auctions for reserve purchase for tertiary regulation were conducted for each month separately. During 2024, depending on the needs, JSC MEPSO conducted day-ahead auctions for energy of tertiary regulation.

In accordance with the method, determined in the Balancing Rules of the Electricity System, in 2024, two electricity producers that can provide secondary and tertiary reserve of regulation were qualified, that is as JSC ESM Skopje and JSC TE-TO Skopje and three producers that can provide reserves for tertiary regulation (additionally EVN Elektrosnabduvanje with HPP Matka). At the same time, the Register of Balance Service Providers lists 14 registered generation units for secondary regulation and 24 generation units for tertiary regulation. 11 generator units are registered for the black start service.

Table 2.35 displays the average hour data for securing system services and the average price for capacity and energy for every hour during 2020, 2021, 2022, 2023 and 2024.

Table 2.35 Average hour data for securing system services and the average price for capacity and energy for every hour during 2020, 2021, 2022, 2023 and 2024.

Година		aFRR+	aFRR-	mFRR+	mFRR-
2020	**Потребен капацитет (MW)**	26,27	26,27	140	50
	Понуден капацитет (MW)	21.70	21.70	139.10	55.00
	Активиран капацитет (MW)	18,45	17,91	109,59	42,39
	Цена за капацитет (Eur/MW)	12,49	12,49	6,24	6,19
	Активирана електрична енергија (MWh)	8,97	8,51	37,14	27,53
	Цена за активирана електрична енергија (Eur/MWh)	56,91	19,67	48,74	18,10
2021	**Потребен капацитет (MW)**	26.23	26.23	140	50
	Понуден капацитет (MW)	14.80	14.80	132.50	66.30
	Активиран капацитет (MW)	13.57	13.57	106.78	43.23
	Цена за капацитет (Eur/MW)	12,49	12,49	6,24	6,16
	Активирана електрична енергија (MWh)	7,54	6,74	40,78	31,55
	Цена за активирана електрична енергија (Eur/MWh)	160.06	43.16	103.95	48,74
2022	**Потребен капацитет (MW)**	26.23	26.23	140	50
	Понуден капацитет (MW)	20.50	20.50	91.40	48.60
	Активиран капацитет (MW)	18.55	18.13	46.43	36.88
	Цена за капацитет (Eur/MW)	34.86	34.86	19.04	19.35
	Активирана електрична енергија (MWh)	9.48	7.73	25.94	27.62
	Цена за активирана електрична енергија (Eur/MWh)	384.69	123.52	275.35	81.56
2023	**Потребен капацитет (MW)**	24.04	24.04	140	50
	Понуден капацитет (MW)	21.70	21.70	140.00	30.00
	Активиран капацитет (MW)	16.97	17.1	122.48	29.09
	Цена за капацитет (Eur/MW)	33.42	33.42	16.11	16.11
	Активирана електрична енергија (MWh)	9.02	9.86	34.43	34.16
	Цена за активирана електрична енергија (Eur/MWh)	152.12	48.01	137.05	31.49
2024	**Потребен капацитет (MW)**	26.24	26.24	140	30
	Понуден капацитет (MW)	21.90	21.90	116.70	25.00
	Активиран капацитет (MW)	18.46	18.69	107.81	17.49
	Цена за капацитет (Eur/MW)	31.44	31.44	8.84	8.84
	Активирана електрична енергија (MWh)	10.22	9.77	34.69	25.63
	Цена за активирана електрична енергија (Eur/MWh)	166.78	50.76	108.35	25

Table 2.35 shows that during the reviewed period the necessary system services were not fully provided, while the same was happening in the previous years.

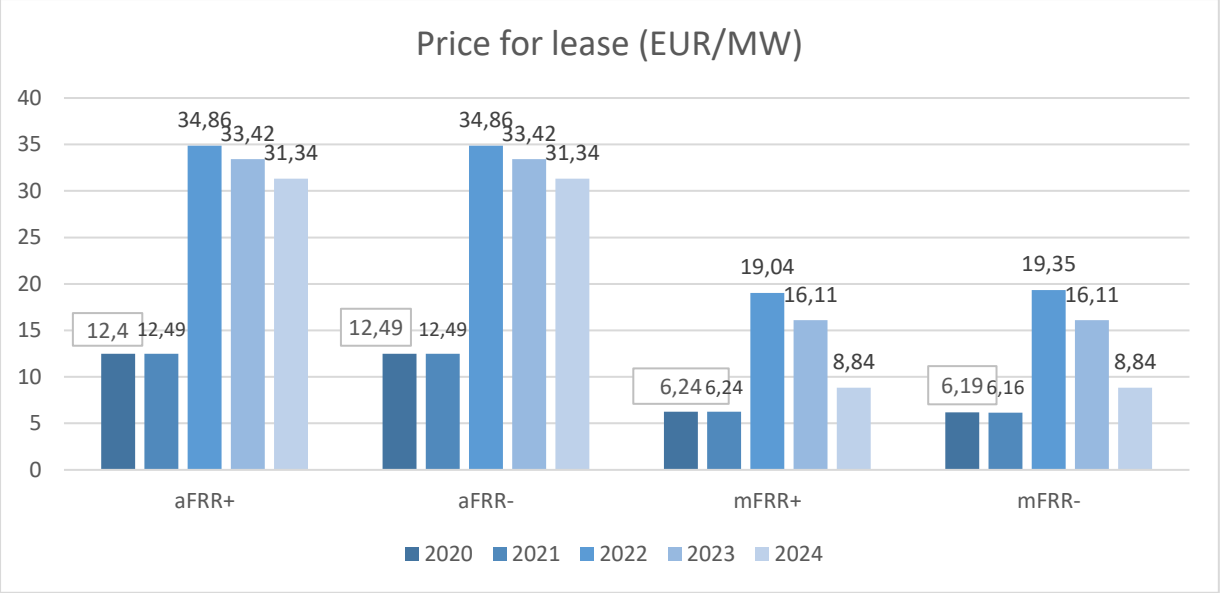
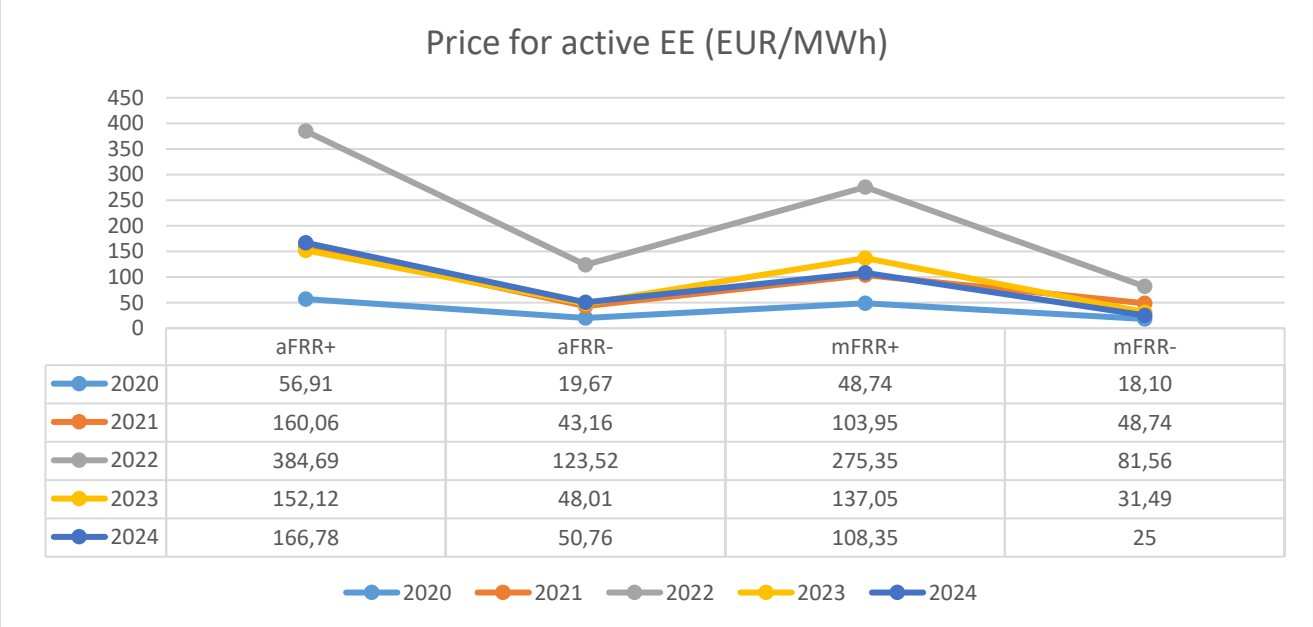


Chart 2.24 Price for leasing balance capacity for secondary and tertiary regulation in 2020, 2021, 2022 2023, and 2024 (EUR/MWh)

Chart 2.24 shows that the prices for lease of balance capacity for secondary and tertiary regulation in 2024 are lower compared to 2023. The price for balance capacity of tertiary regulation is lower by 45% compared to 2023. The price for balance capacity of secondary regulation is lower by 6.22% compared to 2023.



	aFRR+	aFRR-	mFRR+	mFRR-
2020	56,91	19,67	48,74	18,10
2021	160,06	43,16	103,95	48,74
2022	384,69	123,52	275,35	81,56
2023	152,12	48,01	137,05	31,49
2024	166,78	50,76	108,35	25

Chart 2.25 Price for active electricity 2020, 2021, 2022 2023, and 2024 (EUR/MWh)

On the other hand, pursuant to the data in Chart 2.25 it can be seen that the price for active electricity is lower compared to 2023. The price of active electricity for tertiary regulation in 2024 is lower by 20.94% compared to the accomplished one in 2023 whereas the price for active electricity for secondary regulation is higher by 9.63% compared to 2023. This is related to the offers submitted by system service providers, i.e., the price in the HUPX

stock market because the maximum limit for paying active electricity is ++50 % of HUPX for secondary, i.e., +30% and -70 % of HUPX for tertiary regulation.

In the part of system services, JSC MEPSO Skopje realized costs for providing capacity and activation of electricity upwards, while it has also achieved revenue when activating electricity downwards by system service providers (Table 2.36).

Table 2.36 Costs of JSC MEPSO Skopje for adequate usage of system services, i.e., capacity for secondary and tertiary reserve and activation of energy for secondary and tertiary regulation and revenues of activating energy for downward regulation in 2021, 2022, 2023 and 2024 (in EUR)

Year	2022		2023		2024		2022	2023	2024	
Eur	JSC ESM	JSC TE-TO	JSC ESM	JSC TE-TO	JSC ESM	JSC TE-TO	Total	Total	Total	Percentage (%)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(9)/(8)
I . Total costs	**55,477,007**	**1,221,140**	**41,381,777**	**2,067,906**	**25,950,432**	**472.409**	**56,698,147**	**43,449,683**	**26,422,841**	-39.19
Capacity costs (MW)	**25,490,843**	**0**	**27,658,335**	**709,460**	**13,979,438**	**0**	**25,490,843**	**28,367,795**	**13,979,438**	-50.72
aFRR+ costs	**4,282,746**	**0**	**3,479,709**	**354,730**	**2,854,155**	**0**	**4,282,746**	**3,834,439**	**2,854,155**	-25.57
aFRR- costs	**4,282,746**	**0**	**3,479,709**	**354,730**	**2,854,155**	**0**	**4,282,746**	**3,834,439**	**2,854,155**	-25.57
mFRR+ costs	**12,229,008**	**0**	**18,068,525**	**0**	**7,261,954**	**0**	**12,229,008**	**18,068,525**	**7,261,954**	-59.81
mFRR- costs	**4,696,343**	**0**	**2,630,392**	**0**	**1,009,174**	**0**	**4,696,343**	**2,630,392**	**1,009,174**	-61.63
Energy costs (MWh)	**29,986,164**	**1,221,140**	**13,723,442**	**1,358,446**	**11,970,994**	**472.409**	**31,207,304**	**15,081,888**	**12,443,403**	-17.49
aFRR+ costs	**15,343,534**	**0**	**5,726,582**	**516,221**	**4,446,435**	**0**	**15,343,534**	**6,242,803**	**4,446,435**	-28.78
mFRR+ costs	**14,642,629**	**1,221,140**	**7,996,860**	**842,225**	**7,524,559**	**472.409**	**15,863,770**	**8,839,085**	**7,996,968**	-9.53
II. Energy revenues (MWh)	**9,822,870**	**2,340,712**	**2,713,786**	**2,266,858**	**2,567,215**	**1,122,777**	**12,163,582**	**4,980,644**	**3,689,992**	-25.91
aFRR- revenues	**4,386,573**	**0**	**1,426,074**	**200,467**	**1,563,204**	**0**	**4,386,573**	**1,626,541**	**1,563,204**	-3.89
mFRR- revenues	**5,436,298**	**2,340,712**	**1,287,712**	**2,066,391**	**1,004,011**	**1,122,777**	**7,777,009**	**3,354,103**	**2,126,788**	-36.59

Table 2.36 shows that, for providing system services, in 2024, JSC MEPSO Skopje had costs in the amount of 26.4 million EUR, which were given to system service providers and revenues in the amount of 3.69 million EUR, which were received from system service providers for activating the energy for regulation downwards. The overall costs for system services in 2024 were reduced 39.11% in relation to the costs for 2023 due to the costs for capacity, which were reduced by 50.72%. The costs for activated electricity were reduced by 17.49% which is related to the possibility for securing electricity and the prices in the HUPX power exchange.

Of these total costs, 13.98 million EUR are for capacity, while 12.44 million EUR are for activated electricity.

In 2024, 31 balance groups were formed, which represents the largest number of balance groups in this period (Table 2.37). The grouping of electricity market participants is voluntary, and each participant in the electricity market can choose its balance group and it can voluntarily change groups.

Table 2.37 Review of activities according to balancing groups, in the period from 2020 to 2024

Year		Positive deviations			Negative deviations		
	Number of BGs	hours	EE (MWh)	Money (MKD)	hours	EE (MWh)	Money (MKD)
2024	31	86,770	346,257	1,325,891,198	97,180	382,268	2,851,252,564
2023	32	84,587	335,508	928,610,256	88,001	160,582	1,212,397,632
2022	25	88,660	345,970	3,117,093,426	75,463	321,026	5,587,239,662
2021	24	69,270	338,463	1,824,712,476	79,582	551.59	5,706,514,892
2020	20	66,607	305,628	507,560,541	73,840	406,678	1,217,053,930

Table 2.37 indicates increase of hours and quantities of electricity with deviations of balance groups in positive and negative directions compared to 2023.

The overall financial implication of the balancing groups due to the negative imbalances, amounts to 2,851,252,564 MKD (approximately 46.36 EUR). Balance groups are paid for deviations if they have left electricity in the system, i.e., when there are positive deviations. The total financial benefit from the balancing process of balance groups is 1,325,891,198 MKD (approximately 21.56 million EUR).

According to the data available to the Energy Regulatory Commission, the average balancing price for positive deviations in 2024 is 3,829 MKD/MWh (62 EUR/MWh), i.e., 7,459 MKD/MWh (121 EUR/MWh) for negative deviations. The average price for balancing positive deviations was increased in relation to 2023 (45 EUR/MWh) by 38%, while the average price for balancing negative deviations in relation to 2023 (123 EUR/MWh) indicates decrease by approximately 1.63%.

In 2024, the largest balance group in aspect of nominations was the balance group for which EVN HOME DOO Skopje is a balance responsible party, followed by EVN Elektrosnabduvanje, EDS JSC Skopje, RES, etc.

In 2024 the most negative deviations are noted in the balance group of EVN Home DOO Skopje by 112 GWh, followed by JSC ESM by 45 GWh, MEMO DOOEL Skopje with 34 GWh, RES by 30 GWh etc. (Chart 2.26).

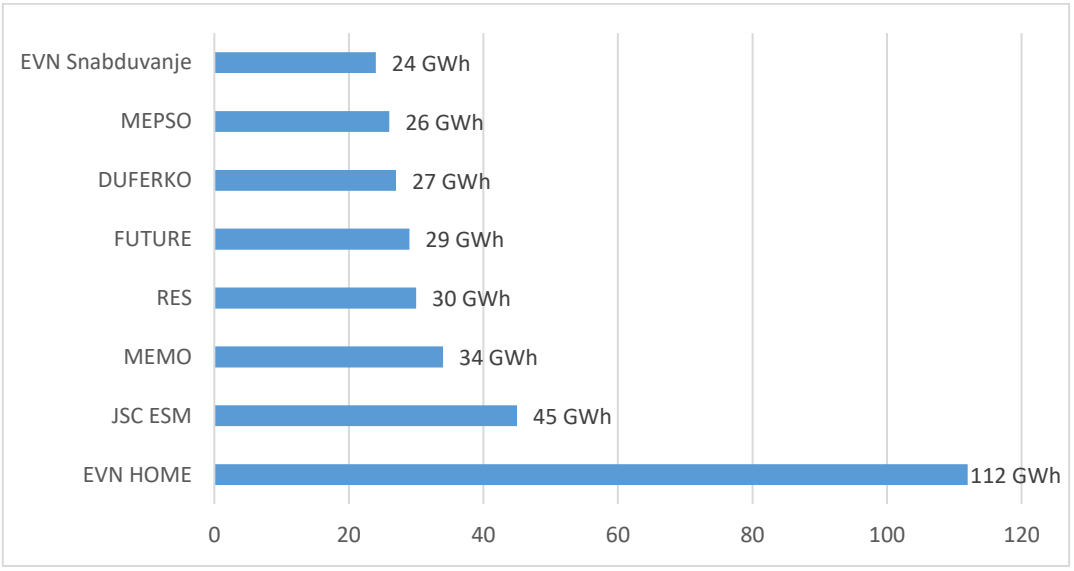


Chart 2.26 Review of negative deviations according to balance responsible party in 2024 (in MWh)

2.7.3.5 ORGANIZED ELECTRICITY MARKET

In May 2023, for the first time in the Republic of North Macedonia the Macedonian power exchange started its operation for the day-ahead period, managed by the organized electricity market operator, MEMO DOOEL Skopje. The operation of the power exchange is conducted pursuant to the Rules on Operation of the Organized Electricity Market, approved by the Energy Regulatory Commission, as well as the Decision on the Amount of the Fee for Participation in the Organized Electricity Market, approved by the Energy Regulatory Commission on May 2, 2024.

Pursuant to the information found at the website of the Macedonian exchange for 2024, as of December 2024, there were 37 companies registered for day-ahead market participation. The total trading in electricity at the day-ahead market in 2024 was 969,554.7 MWh. The highest power was 459 MW at 12:00h on 28.01.2024, while the lowest was 2.2 MW at 03:00 h on 26.05.2024. The highest price of 50,000 MKD was registered on 03.09.2024 at 20:00h and on 26.05.2024 at 03:00h, whereas the lowest was 0.10 MKD on 07.04.2024 (13:00 - 16:00 h), 13.04.2024 at 13:00 h, 14.04.2025 (14:00 and 14:00 h), 28.04.2024 (13:00 - 16:00), 01.05.2024 (12:00 - 16:00), 11.05.2024 (11:00 - 15:00 h) and 12.05.2024 (11:00 h and 14:00 - 16:00 h).

MEMO DOOEL Skopje, being the electricity market operator and the organized electricity market operator, with the function of a nominated operator of the electricity market cooperates with the regional electricity markets for possible merging of electricity markets.

2.7.4 STRUCTURE OF ELECTRICITY CONSUMPTION

The year 2024 has recorded an increase in electricity consumption, compared to 2023 and decrease compared to 2022. The displayed data in Table 2.38 show an increase of gross consumption by 2.24% in 2024 compared to 2023, while in relation to 2022, the decrease amounts to 3.05%. Compared to 2023 the net consumption in 2024 marks an increase of 1.99% whereas in comparison to 2022 there is a decrease of 3.87%. The increase of the gross and net consumption in the above-mentioned percentage is a normal increase, whereas the decrease compared to 2022 is the result of the significant consumption of electricity as a result of the activities following the health crisis.

Table 2.38 Gross and net electricity consumption in 2022, 2023 and 2024 (in Mwh)

Year (MWh)	2022	2023	2024	2024/2023 (%)	2024/2022 (%)
Gross consumption	**7,106,110**	**6,737,968**	**6,889,125**	2.24	-3.05
Net consumption	**6,133,984**	**5,781,678**	**5,896,569**	1.99	-3.87
Transmission consumers	**643,378**	**559,418**	**464.978**	-16.88	-27.73
Consumers at the US	**3,754,300**	**3,489,793**	**3,455,297**	-0.99	-7.96
Other consumers	**1,736,306**	**1,732,467**	**1,976,295**	14.07	13.82
Losses	**972,126**	**956,290**	**992.556**	3.79	2.10
Transmission	**114,442**	**101,783**	**118.726**	16.65	3.74
Distribution	**857,685**	**854,506**	**873.830**	2.26	1.88
Elektrodistribucija	**855,601**	**852,190**	**871.684**	2.29	1.88
ESM-Energetika	**2,083**	**2,316**	**2.146**	-7.36	3.02

In 2024, the Universal Supplier marks a decrease of electricity consumption, whereas when compared to 2023 the decrease was 0.99%, while in relation to 2022 it was 7.96%.

2024 has recorded decrease in the quantities of electricity to cover the losses within respective grids, in the amount of 3.79 % in relation to 2023, and by 2.10 % compared to 2022. The increase of electricity quantities for covering the losses in grids is expected since there was an increase in electricity consumption in 2024.

The structure of net consumption of electricity in 2022, 2023, and 2024, according to types of connections is displayed in Table 2.39 and Chart 2.27.

Table 2.39 Structure of net-consumption of electricity in 2022, 2023 and 2024, according to types of connections (in MWh)

Year	2022	2023	2024	2024/2023 (%)	2024/2022 (%)
Connected to the transmission network (110kV)	643,378	559,418	464.978	-16.88	-27.73
MV1	315,701	300,807	317.098	5.42	0.44
MV2	885,893	847,407	895.536	5.68	1.09
LV.1.1 - Public lightning	69,416	62,586	64.947	3.77	-6.44
LV1.2	376,138	340,330	353.559	3.89	-6.00
LV2 - Households	3,080,244	2,995,531	3,069,507	2.47	-0.35
LV2 - Others	763,214	675,599	730.945	8.19	-4.23

Table 2.39 indicates decrease of electricity consumption in consumers connected to the transmission network.

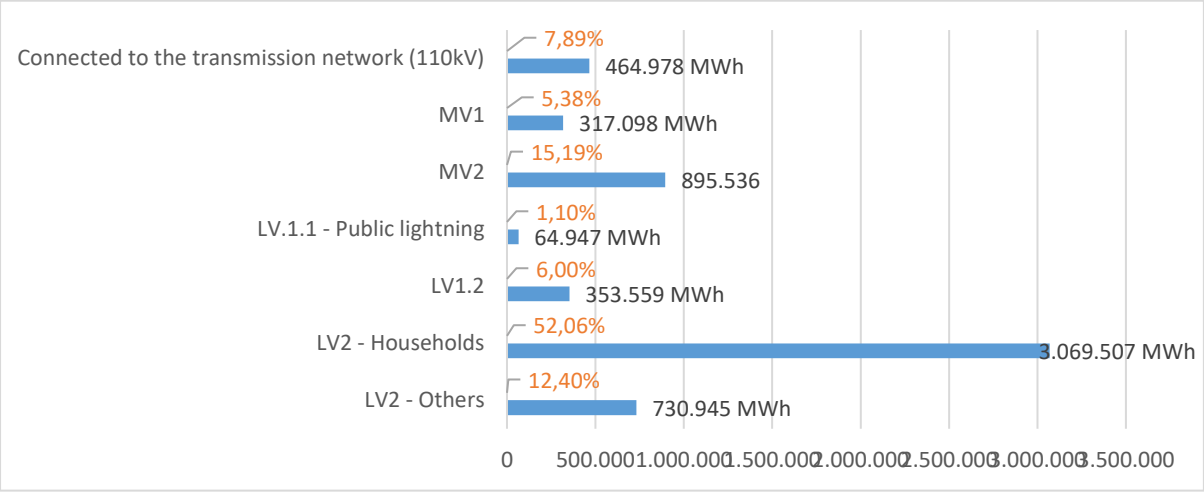


Table 2.27 Structure of net-consumption of electricity in 2024 according to types of connections (in Mwh and %)

Public lightning registers an increase of electricity consumption in the 2024 compared to 2023; however, in the reviewed three-year period, the consumption marks a decrease compared to 2022. This is because numerous municipalities responsible for public lightning, apply energy efficiency measures, and due to the fact that public lightning consumption may belong to another connection category.

At the end of 2023 the total number of electricity consumers, pursuant to the number of measuring points in the electricity distribution systems is 924,670 which is by 1.20% higher compared to 2023 (Table 2.40). The data for consumers connected to the electricity transmission system are by legal entities and it does not take into consideration the electricity distribution system operators, in order to make comparison with the consumption of direct consumers.

Table 2.40 Electricity consumers in 2022, 2023 and 2024, according to metering points

Year	2022	2023	2024	2024/2023 (%)	2024/2022 (%)
Total	904,888	913,734	924,687	1.20	2.19
Consumers on electricity transmission network	14	16	17	6.25	21.43
Consumers on electricity distribution network	904,874	913,720	924,670	1.20	2.19
MV1	82	80	80	0.00	-2.44
MV2	1,236	1,312	1,474	12.35	19.26
LV1.1	6,894	6,893	6,905	0.17	0.16
LV1.2	3,490	3,558	3,582	0.67	2.64
LV2 Households	800,804	809,447	820,573	1.37	2.47
LV Others	92,368	92,430	92,056	-0.40	-0.34

In 2024, the number of consumers connected to the electricity transmission networks is 17. Out of the consumers connected to the electricity distribution networks, the number of connected households in 2024 is 820,573, indicating an increase by 1.37% compared to 2023.

2.7.5 RETAIL MARKET

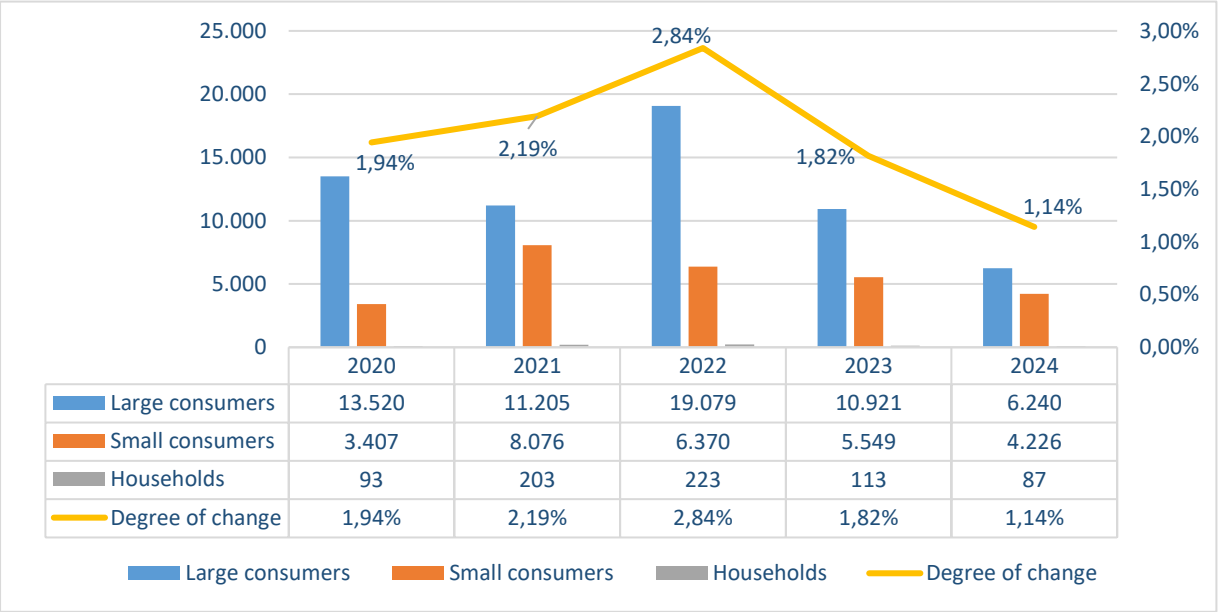
The electricity retail market includes the purchase and sale of electricity by traders / suppliers of electricity, and end consumers of electricity. During 2024, approximately 30.56% of legal entities were supplied with electricity in the open market, while households and others were supplied by the Universal Supplier EVN HOME DOO Skopje. The rate of supplier change, as a ratio between the number of suppliers change according to categories and the total connection numbers in the system managed by Elektrodistribucija DOOEL Skopje, marks a decrease compared to the last three years. This is due to the stabilization of electricity prices in the electricity market.

2.7.5.1 LIBERALIZED MARKET

In 2024, less than half of the total consumption of electricity, i.e., 49.84% of the needs were secured at the open electricity market. This percentage includes electricity purchased to cover losses of electricity in the electricity transmission grid i.e., the electricity distribution grids. This share marks an increase compared to 2023 when 48.2% of the needs for electricity was secured at the liberalized market, and it also means increase compared to 2022 when 47.3% of the needs of electricity were met at the liberalized market. This comes as a result of the gradual restoration of trust in the electricity suppliers and more favourable offers.

CHANGE OF SUPPLIER

The changes of supplier, as one of the more important indicators for assessment of the functionality of the retail electricity market, mark continuous growth in the period 2020-2022, after what a decrease in the following years, i.e., 2023 and 2024, is marked.

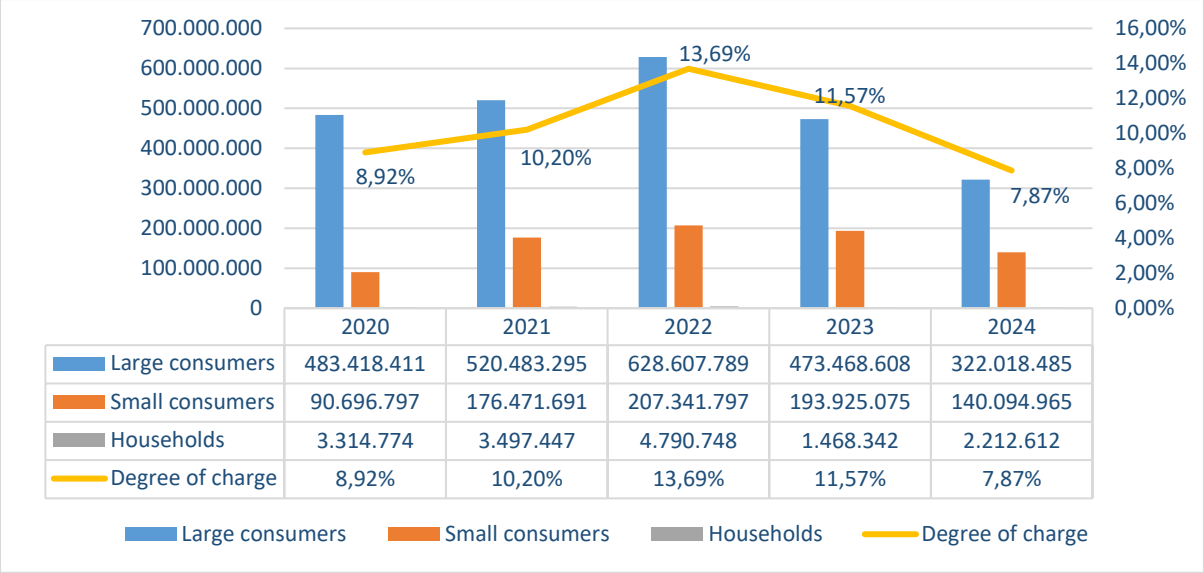


	2020	2021	2022	2023	2024
Large consumers	13.520	11.205	19.079	10.921	6.240
Small consumers	3.407	8.076	6.370	5.549	4.226
Households	93	203	223	113	87
Degree of change	1,94%	2,19%	2,84%	1,82%	1,14%

Large consumers Small consumers Households Degree of change

Chart 2.28 Number of supplier change according to connections for consumer categories in 2020, 2021, 2022, 2023 and 2024 in the system managed by Elektrodistribucija DOOEL Skopje

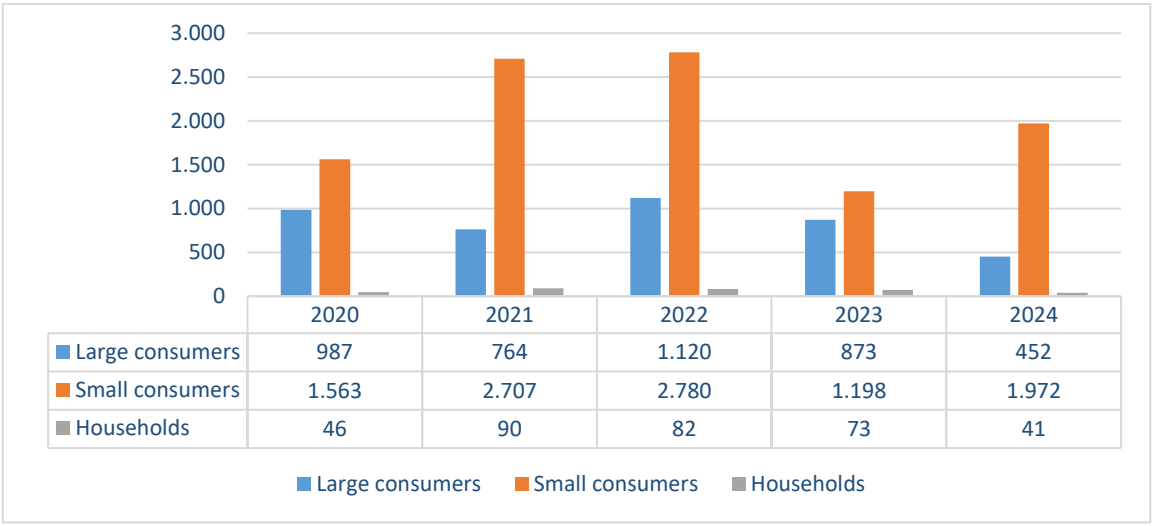
The data presented in Chart 2.28 show that the rate of supplier change, as a ratio between the number of supplier change according to categories and the total connection numbers in the system managed by Elektrodistribucija DOOEL Skopje, in 2024 marks a decrease compared to previously presented period. This comes as a result of the restoration of trust in the electricity market, including the prices of electricity, so there was no need for the consumers to make changes in shorter periods.



	2020	2021	2022	2023	2024
Large consumers	483.418.411	520.483.295	628.607.789	473.468.608	322.018.485
Small consumers	90.696.797	176.471.691	207.341.797	193.925.075	140.094.965
Households	3.314.774	3.497.447	4.790.748	1.468.342	2.212.612
Degree of charge	8,92%	10,20%	13,69%	11,57%	7,87%

Chart 2.29 Annual consumption of electricity of the consumers that made change of supplier (in MWh) and rate of change in 2020, 2021, 2022, 2023 and 2024 in the system managed by Elektrodistribucija DOOEL Skopje

Also, this trend can be seen in the rate of change of supplier according to the annual consumption of electricity in the period 2020-2024 presented in Chart 2.29. In 2024 there was a reduction in the electricity consumption among the consumers who made change of supplier compared to 2023, as well as the years in the previously presented period.



	2020	2021	2022	2023	2024
Large consumers	987	764	1.120	873	452
Small consumers	1.563	2.707	2.780	1.198	1.972
Households	46	90	82	73	41

Chart 2.30 Number of consumers connected to the system managed by Elektrodistribucija DOOEL Skopje, that switched their supplier in 2020, 2021, 2022, 2023 and 2024

In 2024, the total number of consumers that changed supplier marks an increase compared to 2023 and is nearly at the level of 2020, however it did not reach the level of 2021 and 2022 (Chart 2.30).

Table 2.41 Ratio of the number of changes of electricity supplier after a connection with number of connections where change is made in 2020, 2021, 2022 and 2023.

	2020	2021	2022	2023	2024
Number of changes of supplier per connection	17,020	19,484	25,672	16,583	11,273
Number of connections where change is made	16,210	15,123	22,985	15,277	10,553
Ratio	**1.05**	**1.29**	**1.12**	**1.09**	**1.07**

Starting from 2020, the number of supplier change according to connection is higher than the number of connections where change was made. In 2024, on average, for every connection, 1.09 supplier changes were made (Table 2.41).

SUPPLY OF END CONSUMERS

Chart 2.31 shows the share of electricity suppliers and traders in electricity supply to large and small consumers in the liberalized electricity market in 2024, including sales towards the operators of respective systems for covering electricity losses. This chart does not display the share of electricity sale by JSC ESM Skopje for operators of power distribution systems to cover electricity losses.

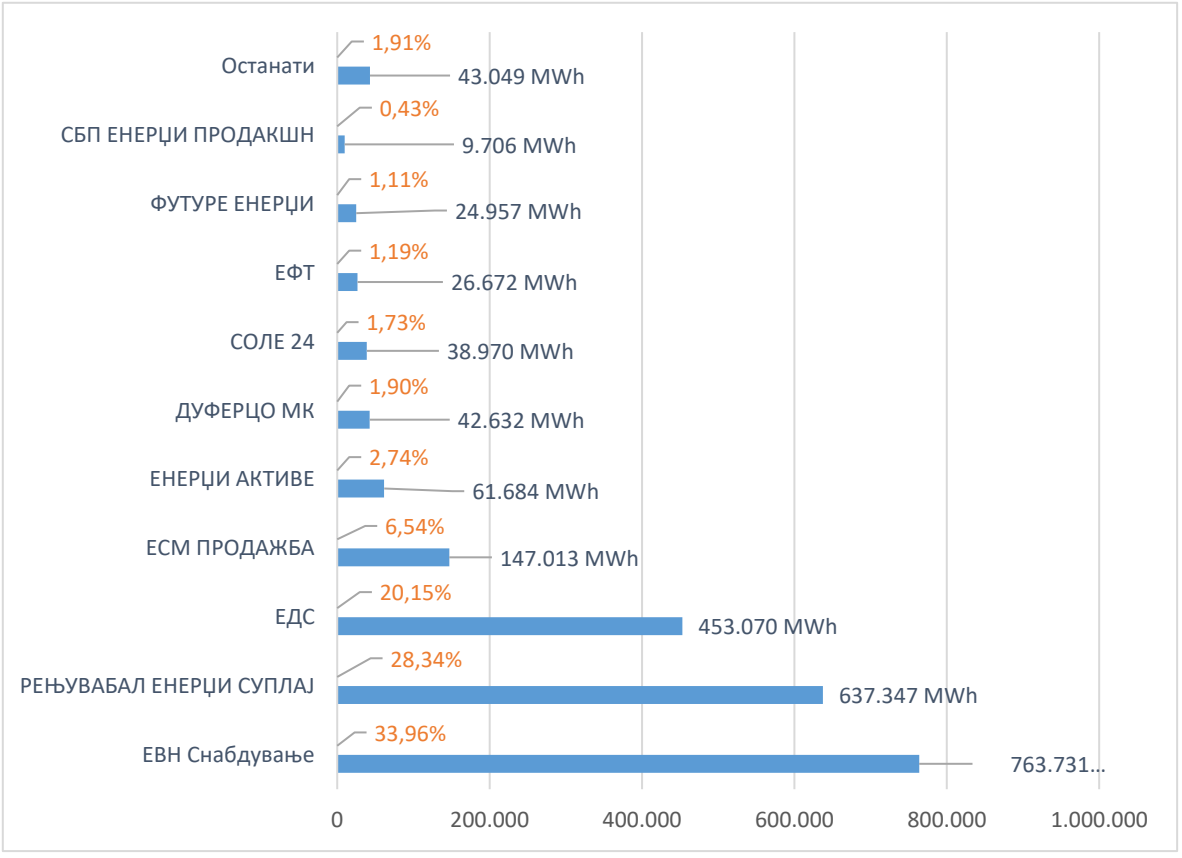


Chart 2.31 Market shares of traders and suppliers in electricity sale to end consumers in the liberalized market in 2024 (in % and in MWh)

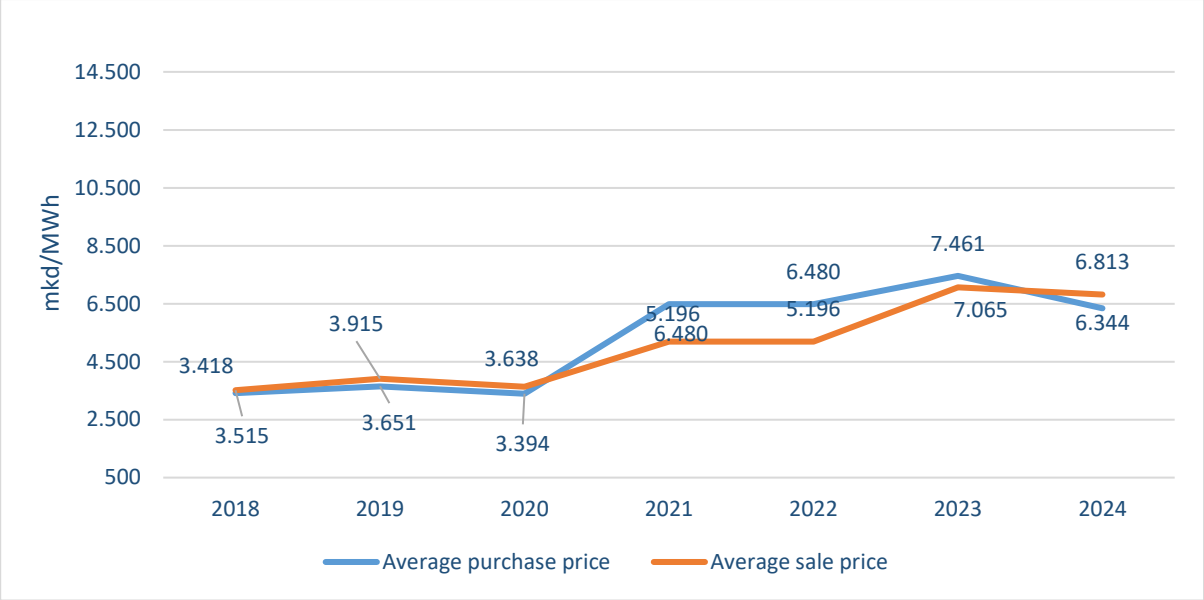


Chart 2.32 Average purchase and sale prices by traders and suppliers of electricity sold to end consumers in the liberalized market in the period from 2018 to 2024 (in MKD / MWh)

In 2024, the average sale price of traders and suppliers of electricity intended for end consumers was 6,813 MKD/ MWh or 110.78 €/MWh. This price is by 3.57 % lower than the average price in the liberalized market in 2023 which was 7,065 MKD/MWh, i.e., 114.88 €/MWh (Chart 2.32).

Chart 2.32 displays the effect of the energy crisis and the rise of electricity prices which began in 2021, and which was even more expressed in 2022. After three years in a row, we can note that the average purchase price is lower than the average sale price.

SUPPLY OF CONSUMERS

During 2024, there were 21 active electricity suppliers providing supply to large and small consumers in the liberalized retail electricity market, i.e., in 2024 the number was same as in 2023. Their market share is displayed in the chart below.

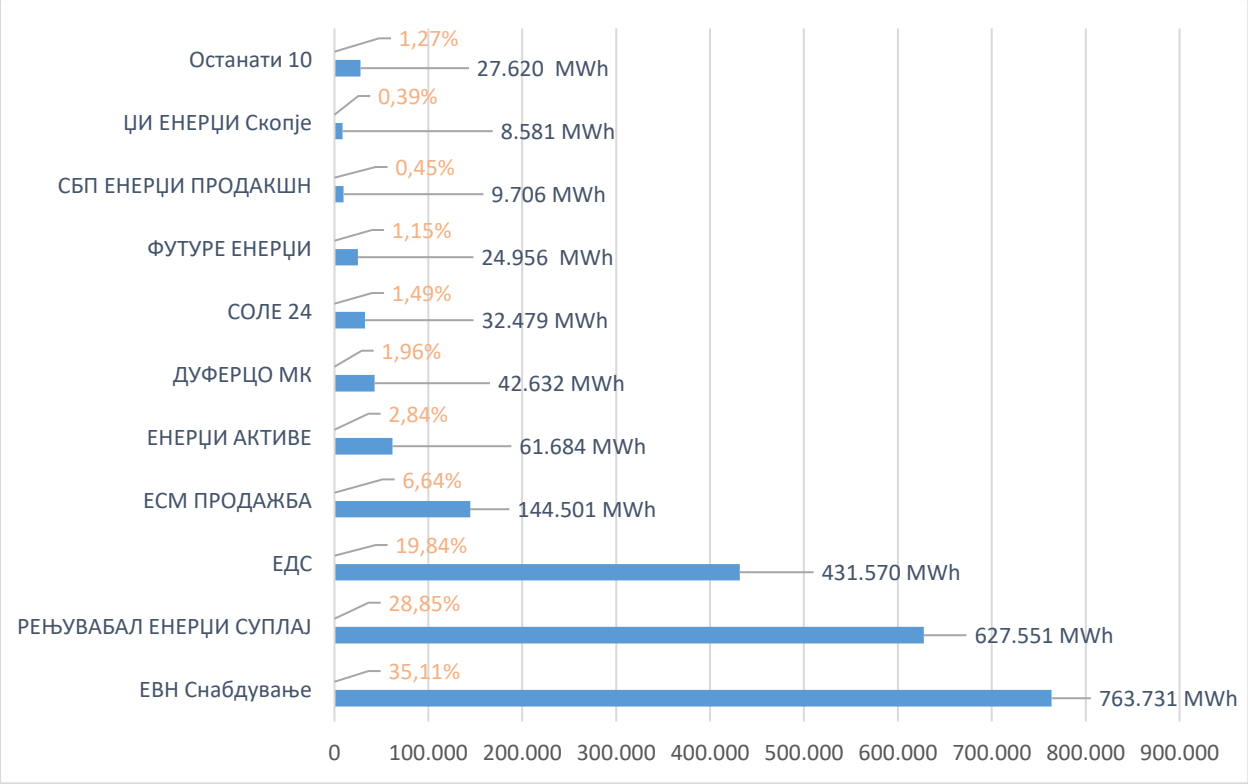


Chart 2.33 Market share and realized sale of suppliers in the liberalized retail electricity market in 2024 (in % and MWh)

In 2024, dominant suppliers in the retail market, which comprises large and small consumers are EVN Snabduvanje (EVN Supply) with 35.11%, RENEWABLE ENERGY SUPPLY with 28.85%, EDS with 19.84% and ESM PRODAZBA (ESM SALE) with 6.64%, followed by the remaining of 16 electricity suppliers who have a share of approximately 9.56%.

If we analyse separately the sales of small and large consumers in the electricity market, we can note certain differences in the market share and realized sales by electricity suppliers.

In the following charts, 2.34 and 2.35 market shares and realized sales are displayed separately by suppliers of small and large electricity consumers during 2024.

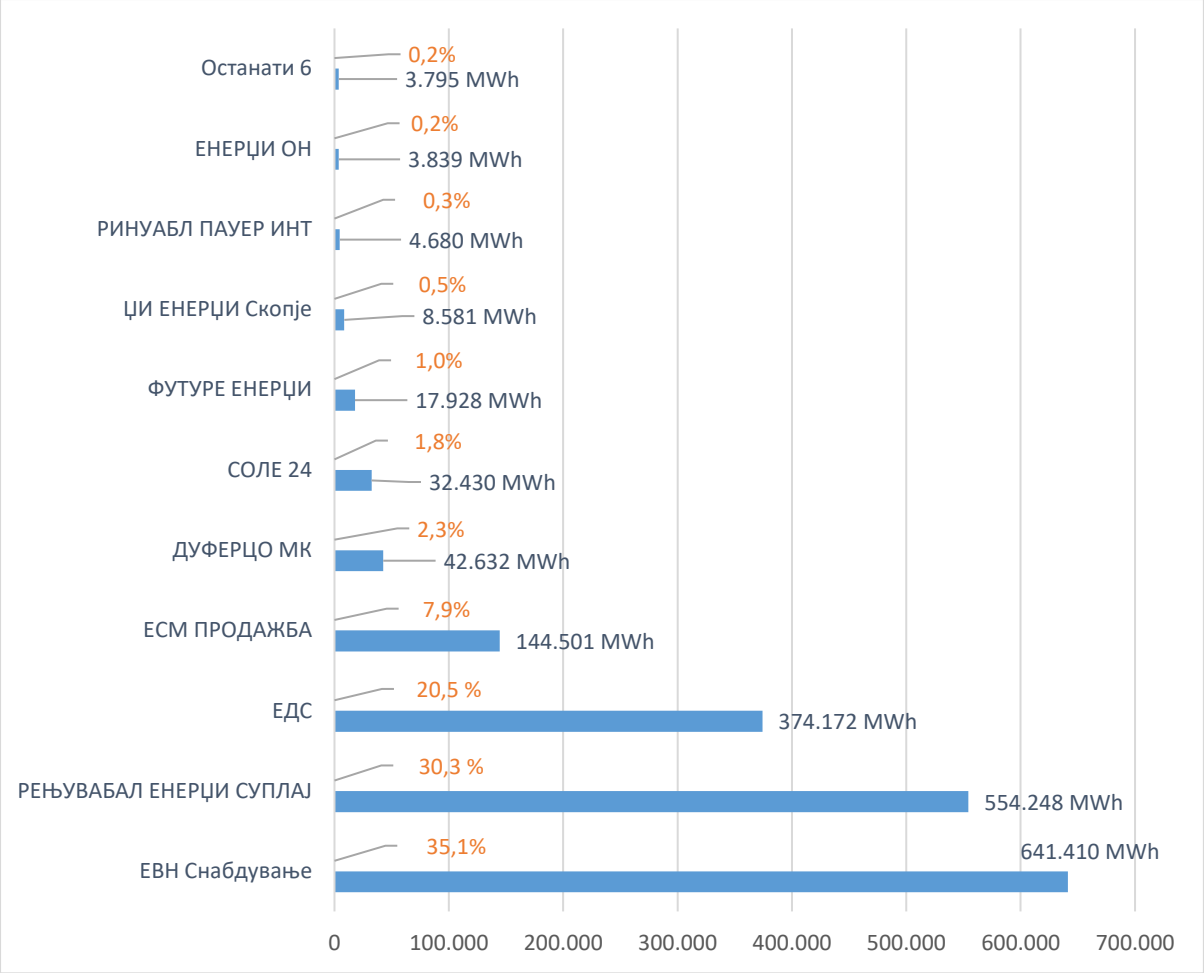


Chart 2.34 Market share and realized sale of suppliers of large consumers in the liberalized retail electricity market in 2024 (in % and MWh)

The total delivered electricity for consumers in wholesale by the suppliers in 2024 was 1,828,217 MWh.

The supply of large consumers with electricity during 2024 was realized by 16 electricity suppliers/traders, where dominant supplier is EVN Snabduvanje with market share of 35.1%, followed by RENEWABLE ENERGY SUPPLY with 30.3%, EDS with 20.5%, ESM Prodazhba with 7.9%, whereas the other 12 suppliers have a share lower than 6.2%.

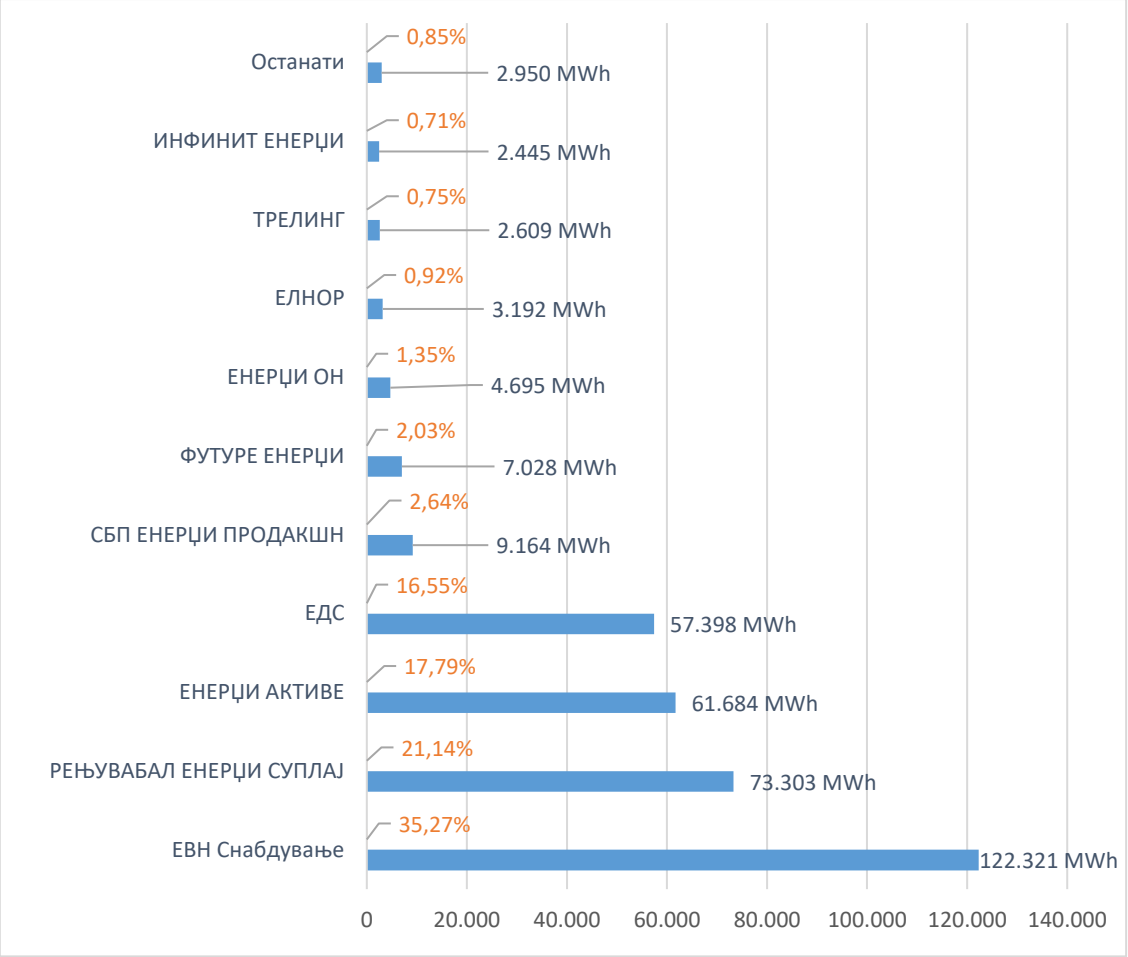


Chart 2.35 Market share and realized sale of suppliers to small consumers in the retail electricity market in 2024 (in % and MWh)

In 2024, small electricity consumers were supplied with 346,788 MWh and was realized by 15 electricity suppliers, three more than the active suppliers of small consumers in 2023. As in the segment of supply of large consumers, here also the dominant supplier is EVN Snabduvanje with 35.27% market share, followed by RENEWABLE ENERGY SUPPLY with 21.14%, Energy Active with 17.79%, EDS with 16.55%, whereas the other 11 suppliers have a share lower than 10% i.e., 9.25%.

It should be noted that the total amounts for supply of both large and small consumers in the amount of 2,175.005 MWh, do not take into consideration the amounts of the electricity supplier of last resort, which is obligated to supply these consumers when, due to various circumstances, will remain without electricity supplier. The total delivered electricity from this supplier is 38,153 MWh for an average price of 9,1681 MKD/kWh. During 2024 281 consumers were supplied.

Chart 2.36 provides a review of the average sale prices of suppliers in the open retail electricity for large and small consumers, in the period from 2018 to 2024.

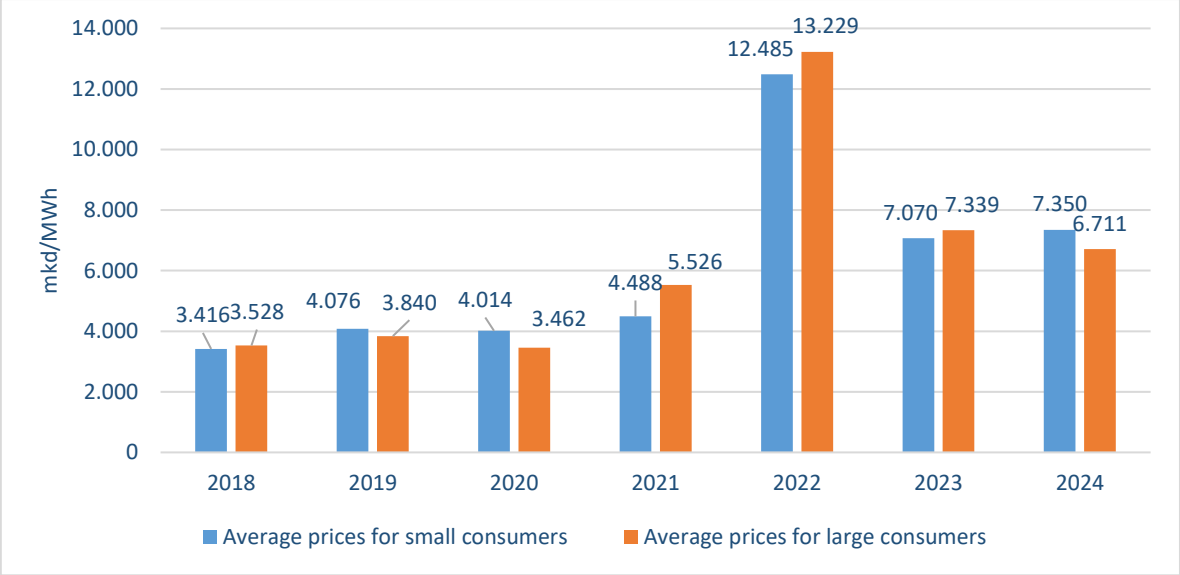


Chart 2.36 Average purchase and sale prices by traders and suppliers of electricity sold to end consumers in the liberalized market in the period from 2018 to 2024 (in MKD / MWh)

The presented data indicate that the average sale price for large consumers in 2024 was 6,711 MKD/MWh or 109.12 €/MWh and is 8.56 % lower than the average sale price for large consumers in 2023. On the other hand, the average sale price for small consumers in 2024 was 7.350 MKD/MWh or 119.51 €/MWh and is 3.96% lower than the average sale price for small consumers in 2023.

The presented average prices reached in the liberalized electricity market exclude the fees on electricity transmission and distribution, i.e., in accordance with the Rules on Electricity Supply, for using respective systems, consumers receive separate invoices by the respective operators.

2.7.5.2 REGULATED MARKET

EVN HOME DOO Skopje, being the universal supplier and the last resort electricity supplier in 2024 supplied households and small consumers who did not select a supplier at the liberalized market, decided to use the universal supplier or due to certain circumstances, remained without electricity supplier. EVN HOME DOO Skopje supplied the consumers by prices and tariffs approved by the Energy Regulatory Commission.

Other consumers deprived of the right to use the universal service who due to specific reasons fail to acquire supply on the liberalized market, shall be entitled to the right to use the electricity supply as a last resort, which is also provided by EVN HOME DOO Skopje within 90 days, unless they conclude a new contract with any supplier in the liberalized market. In such a case, the electricity selling prices are not regulated by the Energy Regulatory Commission, i.e., these prices are set each month based on the monthly prices reached on the day-ahead market on the Macedonian power exchange market, increased by 40 %.

Table 2.4 presents the amounts and average prices of electricity from the universal supplier EVN HOME DOO Skopje in 2024.

Table 2.42 Volume and average prices of electricity purchase from the Universal Supplier, in 2024 (in kWh and MKD/kWh)

	Amount (kWh)	Price (MKD/kWh)
Total/average	**3,484,864,278**	**3.4886**
JSC MEPSO	47,469,658	14.6939
JSC ESM	3,164,432,000	3.5974
MEMO PDO	12,353,800	7.9603
MEMO Preferential	225,665,881	6.5223

In 2024, EVN HOME DOO Skopje, provided the largest volume of the electricity required for households and small consumers supply from JSC ESM Skopje.

Table 2.4 presents the amounts and average prices of electricity from the universal supplier EVN HOME DOO Skopje for the period 2022 - 2024.

Table 2.43 Volume and average prices of electricity purchased from the universal supplier EVN HOME DOO Skopje, in the period from 2022 to 2024 (in MWh and MKD/MWh)

Year	2022		2023		2024	
	MWh	mkd/MWh	MWh	mkd/MWh	MWh	mkd/MWh
Total/average	3,749,148	3,316.2	3,484,864	3,488.6	3,449,921	3,957.1
JSC ESM	3,594,859	2,718.8	3,353,866	3,365.3	3,164,432	3,597.4
Preferential producers	40,826	8,409.7	110,418	5,476.3	225.666	6,522.3
Procurement on liberalized market	109,266	15,699.7	6,681	9,663.6	12.354	7,960.3
JSC MEPSO	4,197	14,305	13,900	14,482.9	47.470	14,693.9

In 2024 JSC ESM Skopje provided most of the electricity at a lower price, whereby in a transparent procedure, EVN HOME DOO Skopje concluded an agreement with JSC ESM Skopje for providing all the electricity necessary for that period. In 2024, the price of purchased electricity in the open market was reduced by 17.63% when compared to 2023.

The above-mentioned table indicates that in the last three years, EVN HOME DOO Skopje paid to JSC ESM Skopje a total of 38,251,900,212 MKD (622 million EUR) for electricity or 13,651,682,381 MKD (222 million EUR) in 2024, 11,286,765,250 MKD (183.5 million EUR) in 2023, and 9,773,702,649 MKD (158.9 million EUR) in 2022. Moreover, EVN HOME DOO Skopje, has paid 2,360,421,074 MKD (38,4 million EUR) for electricity from preferential electricity producers, as follows: 343,334,412 MKD (5.6 million EUR) in 2022, and 604,682,093 MKD (9.8 million EUR) in 2023 and 1,471,861,352 MKD (24 million EUR) in 2024. Table 2.42 indicates that in the three-year period, electricity purchase was lowest in 2022 due to the proclaimed state of crisis in electricity supply, i.e., the amendment of the Rules on Electricity Market, according to which MEMO DOOEL Skopje did not charge EVN HOME DOO Skopje for preferential producers from renewable sources.

EVN HOME DOO Skopje in the last three years at the liberalized electricity market has procured electricity in total value of 1,878,347,478 MKD (30.5 mil EUR), out of which 1,715,443,420 MKD (27.9 mil EUR) in 2024, 64,562,512 MKD (1,049,797) in 2023 and 1,715,443,420 MKD (27.9 mil EUR) in 2022.

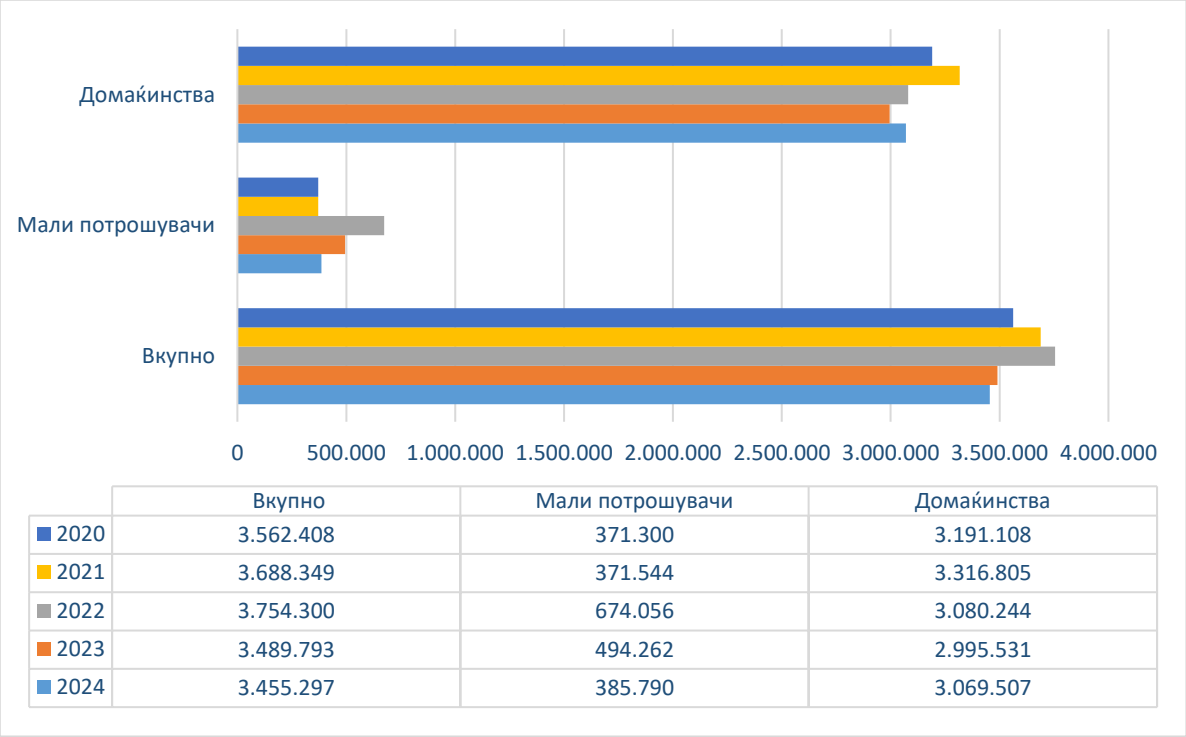
The universal supplier EVN HOME DOO Skopje in 2024 has accomplished sales of 3,455,296,570 kWh, for an average price of 4,7935 MKD/kWh, thus accomplishing a total income of about 269 mil EUR based on sold electricity. EVN HOME DOO Skopje, paid the income for the fee of electricity transmission and distribution, based on an invoice, to ELektrodistribucija DOOEL Skopje, which also, based on an invoice, pays the transmission fee to JSC MEPSO Skopje.

Table 2.44 Quantities, average prices exempt of fees for grid services and share of electricity sold by the universal supplier according to consumer categories, in 2024 (in kWh, in MKD/kWh, and in %)

Category of consumers	Amount (kWh)	Price (MKD/kWh)	Share in sales (in %)
Total/average	3,455,296,570	4.7935	100.00%
Small consumers	385,789,818	11.9411	11.17
Households	3,069,506,752	3.8952	88.83

The data in table 2.44 refer to achieved electricity prices which do not comprise tariffs on electricity distribution. In 2024, for households, the average tariff on electricity distribution, i.e., the fee for using the power distribution system was 2.89 MKD/kWh.

The greatest share of electricity sale of EVN HOME DOO Skopje in 2024, 88.83% comes from the category of households, whereas 11.17% of the sales is directed as small consumers.



	Вкупно	Мали потрошувачи	Домаќинства
2020	3.562.408	371.300	3.191.108
2021	3.688.349	371.544	3.316.805
2022	3.754.300	674.056	3.080.244
2023	3.489.793	494.262	2.995.531
2024	3.455.297	385.790	3.069.507

Chart 2.37 Structure of sale to small consumers and households by the regulated supplier in the period from 2020 to 2024 (in MWh)

For comparing the data referring to the sale by EVN HOME DOO Skopje, in the period from 2020 to 2024, Chart 2.37 represents the structure of sale by the universal supplier EVN

HOME DOO Skopje to small consumers and households, in line with the separation of consumer categories according to the new Tariff System. The data displayed in Chart 2.37 indicates that the electricity sale to households in 2024 is by 2.5% lower than the sale in 2023. In 2024, electricity sale to small consumers indicates a decrease by 21.95% compared to the previous 2023. The increased consumption of electricity among the households is within the frames of the normal flows and it depends mostly on the weather conditions, such as the extremely high temperatures in the summer period, which came on few occasions. On the other hand, the decrease in consumption by small consumers is due to the fact than the most companies decided to provide electricity from the liberalized market due to the stabilization of prices, as well as due to the lower prices compared to the prices on the regulated market for this category of consumers. Furthermore, some consumers installed solar panels for providing electricity from their own production.

STRUCTURE OF ELECTRICITY PRICE

According to the complete liberalization of the electricity market and the transfer of competences for establishing sales prices to the regulated market, the ERC no longer hast the authority to set electricity sale prices, i.e., this competence is now given to the universal supplier, and the ERC has no impact over the final electricity prices. Pursuant to the existing laws and bylaws, the electricity price is determined in accordance with the components presented in Table 2.45.

Table 2.45 Structure of average electricity price in accordance with the data for 2024

No.		*2024 (pursuant to the Decision dated December 2023)*		*2024 (pursuant to the Decision dated June 2023)*		
No.	*Description*	***Average prices (MKD/kWh)***	*% share in final price*	***Average prices (MKD/kWh)***	*% share in final price*	*Method of defining*
1	**Total average procurement price**	**3.6356**	**50.04%**	**3.7604**	**50.53%**	**liberalized market / legal obligation**
1.1	ESM	**3.5055**	**44.27%**	3.6900	45.88%	**liberalized market (tender)**
1.2	Procurement on liberalized market	**7.3800**	**0.20%**	5.4065	0.15%	**liberalized market (tender)**
1.3	Renewable sources	**5.2592**	**4.60%**	5.7500	3.48%	**Legal obligation**
1.4	Balancing	**4.1525**	**0.97%**	2.7375	1.01%	**Legal obligation**
2	**Transmission tariffs**	**0.2935**	**4.04%**	**0.2935**	**3.94%**	**ERC**
3	**Market operator tariff**	**0.0122**	**0.17%**	**0.0122**	**0.16%**	**ERC**
4	**Distribution tariff**	**2.5755**	**35.45%**	**2.7063**	**36.36%**	**ERC**
5	**Margin of universal supplier**	**0.7494**	**10.31%**	**0.6704**	**9.01%**	**Defined on a tender for a period of 5 years**
6	**Correction factor**	**0.0000**	**0.00%**	**0.0000**	**0.00%**	**ERC**
7	**Total**	**7.2663**	**100.00%**	**7.4428**	**100.00%**	

In 2024 two decisions were made for determining the electricity prices for the consumers who are supplied by the universal supplier. The first one was made towards the end of 2023 pursuant to the regular procedure prescribed in the Tariff System for sale of

electricity to the consumers supplied by the universal supplier and the last resort supplier, while the adoption of the second decision made in June 2024 was a result of the change in the percentage of a margin which was achieved on the new tender for selection of a universal supplier. The decision made in December 2023 was applied as of January 1 to June 30, 2024, whereas the second one in the period July 1 - December 31, 2024.

In accordance with this, the table above presents the structure of the average electricity price for 2024 pursuant to the Decisions made in December 2023 and June 2024 and what can be seen is that the structure of the price i.e., the share of certain components of the structure, do not differ significantly.

The data in Table 2.45 indicate that the most dominant influence over the electricity price paid by consumers supplied by the universal supplier is by the purchase price of electricity by more than 50% in both decisions. The tariff of electricity distribution which participates in the Decision made in December 2023 participates with 37.77%, whereas pursuant to the Decision made in June 2024, it has a share of 36.36%. The margin in the Decision made in December 2023, using the percentage pursuant to the first tender procedure for selection of a universal supplier (11.5%) participates with 10.99%, whereas with the decreased percentage of margin achieved at the second organized tender for universal supplier (9.9%) participation of the margin, this was decreased, and it amounts to 9.01%. As in all previous decisions, in these two, the impact of the transmission tariff and the tariff for organizing and managing the electricity market is small, i.e. it amounts to just over 4%.

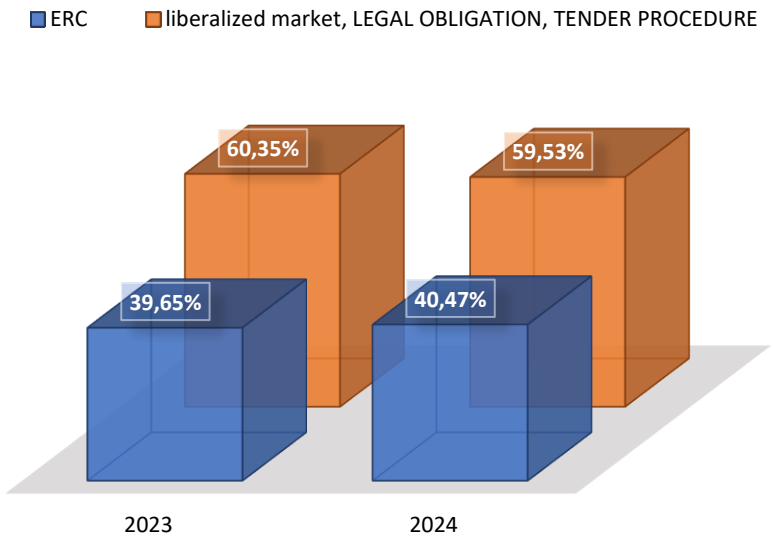


Chart 2.38 Share of components that form the electricity price paid by consumers that are supplied by the universal supplier

The data from Table 2.45 and Chart 2.39 indicate that the Energy Regulatory Commission sets four of the overall six components that form the electricity price paid by end consumers.

The four components that are set by the Energy Regulatory Commission have a share of 39.65% in the final price set in December 2023 and 40.47% in the price set in June 2024, and in the rest 60.35% and 59.53% respectively, the Energy Regulatory Commission does not have any influence at all.

NATURAL GAS

2024

III. NATURAL GAS

During 2024, the natural gas transmission system operated by the state-owned Joint Stock Company for Energy Activity Natural Gas Transmission NOMAGAS Skopje transmitted 3,735,851,163 kWh of natural gas, which is approximately at the level of consumption from last year. Following the crises in 2022, the transmitted amount of natural gas in 2023 and 2024 are increased and stabilized.

One of the most important activities in 2024 was the procedure of certification of the natural gas transmission system operator of the Republic of North Macedonia, the Joint Stock Company for performance of energy activity - transmission of natural gas NOMAGAS Skopje in State Ownership.

Based on the model of ownership separation established in the Law on Energy*, as well as on the data, information and evidence claiming that JSC NOMAGAS Skopje has fulfilled the requirements of the Directive on the Internal Natural Gas Market 2009/73 of the European Parliament and the Council from 19 July 2009, in October 2023, the Energy Regulatory Commission started the procedure for certification of the Natural Gas Transmission System Operator of the Republic of North Macedonia, and the final certification decision was made on 4 July 2024.

The Natural Gas Transmission System Operator - NOMAGAS JSC Skopje, state-owned, plans to put into operation new sections to Negotino, Gostivar and Bitola, which shall cover approximately 70 percents of the overall population in the state. In the following period, new interconnection lines are planned to be built, going to Greece, Serbia, Kosovo, and Albania.

In the course of 2024, the ERC approved several bylaws of the natural gas distributors, Kumanovo - Gas, Strumica Gas and DTIDZ. During November amendments to the Tariff System for natural gas transmission and the organization and management of the natural gas market were made, as well as amendments to the Tariff system for natural gas distribution. Furthermore, amendments to the Rules for Natural Gas Supply were made.

In November 2024, the Energy Regulatory Commission adopted a new tariff for natural gas transmission for 2025. The average tariff is 0,1370 MKD/kWh and notes an increase by 3.71 % compared to the tariff for 2024, which was 0,1321 MKD/kWh.

In the Republic of North Macedonia, the below listed natural gas distribution systems are built, located in:

- the Technological and Industrial Development Zone (TIDZ) Skopje 1 and Skopje 2, located in the village Bunardzik, with 7,7 km length of the Distribution Grid;
- the Municipality of Kumanovo, with 22.5 km length of the distribution grid, and
- the Municipality of Strumica, with 44 km length of the built Distribution Grid.

The above-mentioned natural gas distribution systems serve to deliver the natural gas requirements to industrial and commercial consumers, to public institutions and households.

The energy infrastructure in the natural gas sector in the Republic of North Macedonia, enclosed in Chart 3.1, provides:

- Natural gas import;
- Natural gas transmission;
- Natural gas distribution, and
- Natural gas supply.

Chart 3.1 The energy infrastructure in the natural gas sector in the Republic of North Macedonia

The Republic of North Macedonia does not possess its own natural gas sources, and the entire quantity of natural gas is imported through the gas pipeline system of the Republic of Bulgaria.

3.1 NETWORK SERVICES

3.1.1 NATURAL GAS TRANSMISSION SYSTEM

The transmission system in the Republic of North Macedonia is composed by one main interconnection gas pipeline with the Republic of Bulgaria, entering the Republic of North Macedonia at Deve Bair / Zhidilovo, and extends in length of 98 km through Kriva Palanka, Kratovo and Kumanovo, reaching Skopje. Also, there is a gas pipeline distribution network from the main pipeline to the cities of Kriva Palanka, Kratovo, Kumanovo, the Technology and Industry Development Zone – Skopje (Bunardzik), TAV Makedonija - Petrovec and the City of Skopje with 32 km in length, and the City Gas Pipeline Network with 80 km in length (Kriva Palanka, Kratovo, Kumanovo and Skopje), with an overall of 210 km. The transmission system is composed by GMS (main metering station), located in the entrance to the Republic of North Macedonia, by six GMRS (main metering and regulating stations), installed in the entrance to the cities of Kriva Palanka, Kratovo, Kumanovo, two in Skopje, i.e., Skopje Sever (North) and

Skopje Jug (South), and one in the Technology and Industry Development Zone Skopje and TAV - Makedonija Petrovec.

The overall capacity of the natural gas transmission system is 800 million nm3/annually, with operational pressure of 54 bar, and a diameter of the main pipeline of 530 mm. The capacity of the system can reach 1.200 million nm3/annually. The maximum flow of the main gas line is 180.000 nm3/hour.

Table 3.1 provides a review of the overall transmitted natural gas quantities within the past three years, according to months and Chart 3.2 displays the natural gas quantities in the natural gas transmission system in the Republic of North Macedonia in 2022, 2023 and 2024, according to months.

Table 3.1 Review of transmitted quantities of natural gas in 2022, 2023, and 2024 in kWh

Month	2022	2023	2024	2024/2022 (%)	2024/2023 (%)
January	395,186,183	361,945,547	503,719,562	27.46	39.17
February	415,778,022	408,697,004	424,179,126	2.02	3.79
March	472,453,323	373,917,908	255,189,207	-45.99	-31.75
April	76,707,811	378,502,215	132,843,009	73.18	-64.90
May	40,301,892	44,850,007	41,180,515	2.18	-8.18
June	33,564,992	269,552,210	204,246,492	508.51	-24.23
July	135,831,092	332,348,672	339,521,801	149.96	2.16
August	245,655,577	350,619,003	379,913,788	54.65	8.36
September	344,529,668	316,542,132	352,568,084	2.33	11.38
October	58,823,155	366,862,450	197,288,586	235.39	-46.22
November	370,666,888	366,226,862	467,704,324	26.18	27.71
December	417,426,663	336,364,964	437,496,669	4.81	30.07
Total	**3,006,925,267**	**3,906,428,974**	**3,735,851,163**	**24.24**	**-4.37**

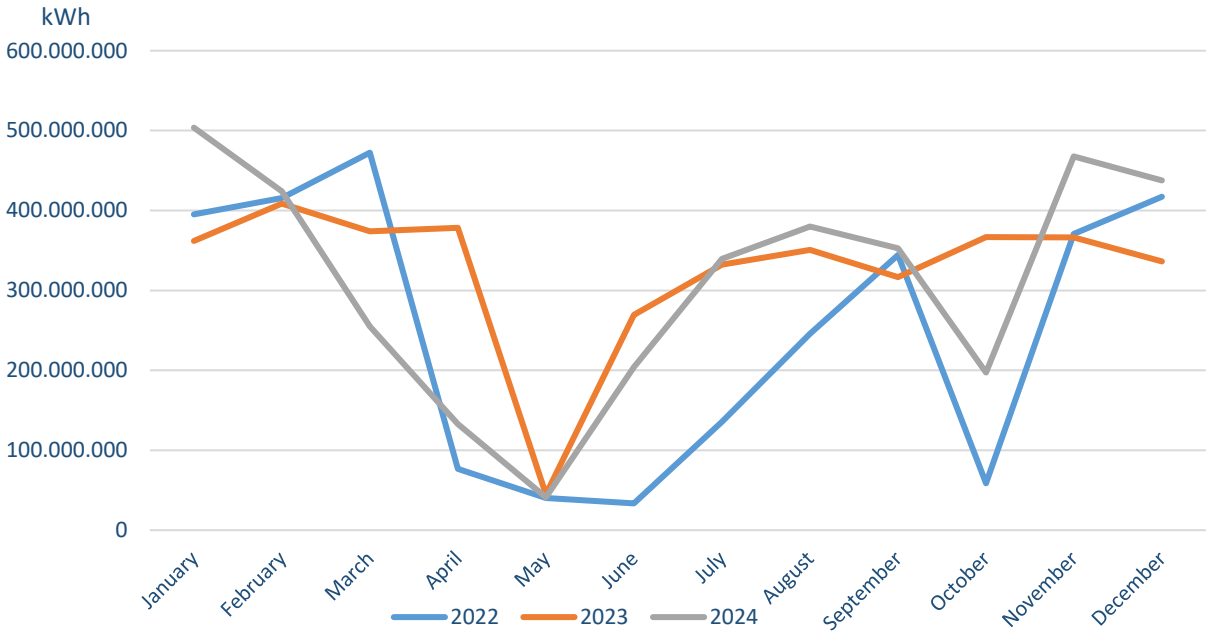


Chart 3.2 Monthly dynamics on Natural Gas Quantities in the Natural Gas Transmission System

The largest consumption of natural gas is in the winter months, which is expectable considering that natural gas is mostly exploited for production of electricity and district heating. The highest share of consumption is noted by the cogeneration plant, owned by TE-TO JSC Skopje. Chart 3.2 indicates that in May natural gas consumption was lowest, because during this month, the plant usually does not work.

In the months when natural gas registers minimum consumption, only the industrial consumers using natural gas for technological processes are registered as consumers during the entire year.

Chart 3.3 displays the trend of natural gas consumption in the Republic of North Macedonia, starting from 2004 until 2024.

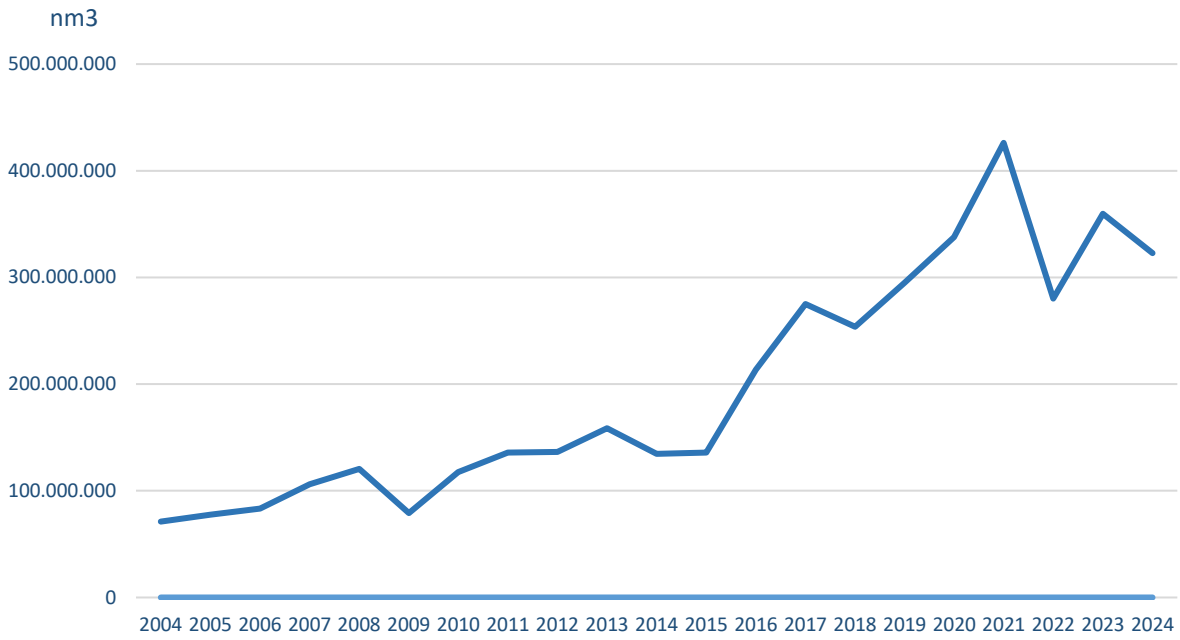


Chart 3.3 History of natural gas consumption in the period from 2004 to 2024 (in nm3)

The chart above indicates the decrease of natural gas consumption in 2022, compared to 2021. In 2021, natural gas consumption was 426 million nm3, while in 2022 it was 280 million nm3. In 2023 natural gas consumption increased again to approximately 360 million nm3, only to experience a slight decline in 2024 to almost 323 million nm3.

Considering the seasonal variation in natural gas consumption, the utilization of the system fluctuates throughout the year. . Historically, the lowest system usage occurs in April and May, with daily levels in the range between 5% to 15%, whereas during the winter months, when natural gas consumption is at its peak, the system's utilization significantly rises, reaching daily levels of 50% to 80% daily usage of the natural gas transmission system.

The number of connections to the natural gas transmission system in the period from 2015 to 2024 is displayed in Chart 3.4.

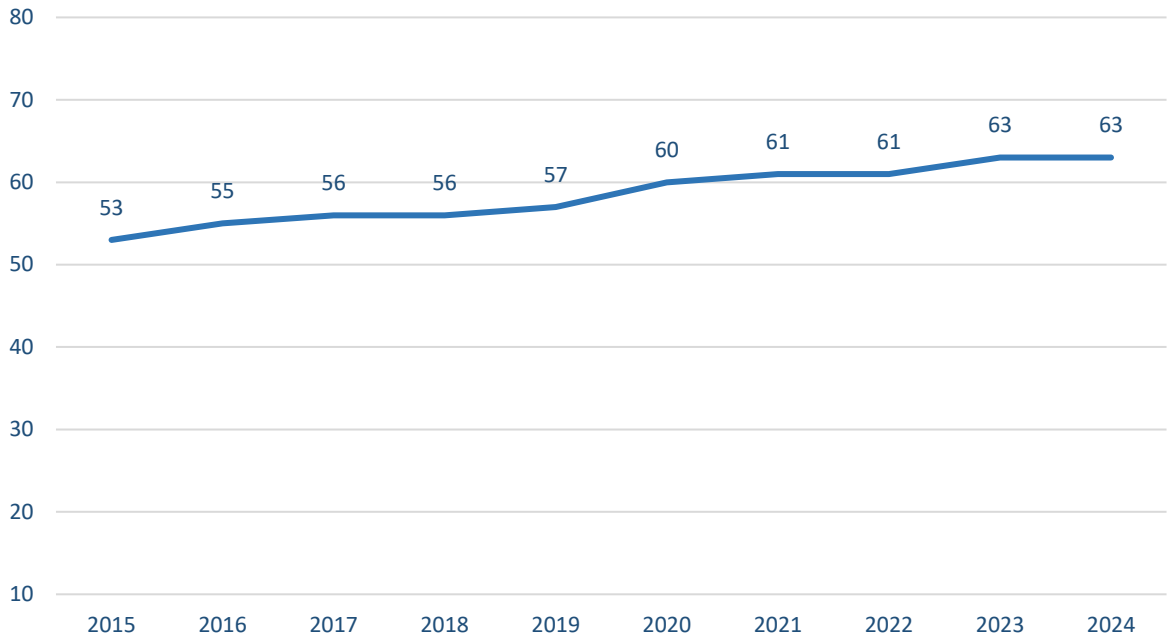


Chart 3.4 The number of connections to the natural gas transmission system in the period from 2015 to 2025

The number of connections to the natural gas transmission system in recent years indicates growth; in 2015 had 53 connections and has grown to 63 connections in 2023 and 2024. In 2024, out of 63 connections to the natural gas transmission system, 44 were active connections.

In 2024, natural gas losses in the natural gas transmission system are within the allowed level of technical losses by 0,5 %, in accordance with article 10 of the Rulebook for Setting Maximum Allowed Revenue and Regulated Average Tariffs on Natural Gas Transmission, Natural Gas Market Organization and Management and Natural Gas Distribution.

3.1.1.1 CERTIFICATION OF THE OPERATOR OF THE NATURAL GAS TRANSMISSION SYSTEM

The Law on Energy provides ownership separation of the natural gas transmission system operator, and its certification in line with the third package of the European Union legislation on internal energy market.

Pursuant to Article 113, paragraph (2) of the Law on Energy and Article 3 of the Rulebook on Certification, the natural gas transmission system operator of the Republic of North Macedonia, JSC NOMAGAS Skopje in state ownership, on 2 October 2023 submitted an application to the Energy Regulatory Commission for certification of the natural gas transmission system operator. no. 11-2075/1

On 29 January 2024, the Energy Regulatory Commission prepared a draft-decision for the certification of the natural gas transmission system operator of the Republic of North Macedonia, Joint Stock Company for performing the energy activity of natural gas transmission NOMAGAS Skopje, state-owned, which was submitted for an opinion to the Secretariat of the Energy Community.

On 21 May 2024 the Energy Regulatory Commission received the Opinion No. 1/2 for the certification of JSC NOMAGAS Skopje issued by the Secretariat of the Energy Community

(Opinion 1/24 pursuant to Article 3(1) of Regulation (EC) No 715/2009 and Article 10(6) of Directive 2009/73/EC – Republic of North Macedonia – Certification of NOMAGAS). With this Opinion, the Secretariat provided its full support to the process of certification of JSC NOMAGAS Skopje; by pointing out the decoupling of activities related to the natural gas market from the activities performed by the natural gas transmission system operator, in pursuance with the law. The Energy Regulatory Commission, on its session held on 4 July 2024, adopted a Decision for certification and appointing of a natural gas transmission system operator of the Republic of North Macedonia No. 11-1255/1, thus accepting the recommendations issued by the Energy Community. With this decision the assigned natural gas transmission system operator of the Republic of Macedonia is obligated to report to the Energy Regulatory Commission, in every six months, about the undertaken activities related to the decoupling procedure for the function of the market operator in a separate company which will perform the works referring to organization, efficient functioning and development of the natural gas organized market.

3.1.1.2 DEVELOPMENT AND INVESTMENT PLANS

The Development and Investment Plans shall secure safe and permanent natural gas transmission, distribution, and supply, increase the efficiency of the systems under respective planning, construction and maintenance of the gas pipeline, the metering regulatory stations and equipment, with careful management and supervision of the transmission grid, and by inspecting all works within the protection area of the gas pipeline.

In 2024, NOMAGAS JSC Skopje shall continue to construct the new main gas pipelines providing connectivity of all main urban centres in the country to the Natural Gas Transmission System.

In the following period, JSC NOMAGAS Skopje has the following program targets:

- Putting into operation of the main gas pipeline, the section Klechovce - Negotino (Kavadarci), with a length of 93 km and connection of first consumers to the gas pipeline,
- Putting into operation of the main gas pipeline, the section Negotino (Kavadarci) – Bitola with a length of 92 km and connection of first consumers to the gas pipeline,
- finishing the construction and making technical inspection of the main gas pipeline, section Skopje - Tetovo - Gostivar and connecting the first consumers to the gas pipeline,
- Preparing the infrastructural project, Study for Environmental Impact Assessment and Basic project for the main gas pipeline section 8 Sv. Nikole - Veles and initiating the procedure for acquiring building permit (deadline: second quarter of 2025),
- Preparing the infrastructural project, Study for Environmental Impact Assessment and Basic project for the main gas pipeline section 7 Kichevo - Ohrid;
- Preparing the infrastructural project, Study for Environmental Impact Assessment and Basic project for the main gas pipeline section Gostivar - Kichevo;
- Preparing the infrastructural project, Study/Elaboration for Environmental Impact Assessment and Basic project for construction of branches towards:
    - Kavadarci
    - TPP NEGOTINO
    - TIDZ Shtip

- TIDZ Tetovo
- TIDZ Prilep

- Preparing the infrastructural project, Study for Environmental Impact Assessment and Basic project for the main gas pipeline section Bitola-Ohrid;
- Preparing the infrastructural project, Study for Environmental Impact Assessment and Basic project for the interconnection MK-KO;
- Construction of a discharge clearing station and receiving clearing station on the section Klechovce-Negotino;
- Urban project, conceptual project, basic project and elaborations for GP 6.26 CM Razhanichino, municipality of Petrovec;
- Construction of an interconnective pipeline with the Hellenic Republic;
- LNG terminal Alexandroupolis;
- Construction of new connections;
- Procurement of cathode stations;
- International projects for gasification and regional cooperation;
- System for monitoring and detecting gas leaks from the gas pipeline network in order to reduce losses in the natural gas transmission system;
- Installation of an appropriate software for detecting and reporting losses, and for system balancing;
- Telemetric system and SCADA - system in new gas line facilities and additional construction of existing facilities of the gas line,
- Construction of a new administrative facility with warehouse space, purchase, and installation of receiving /discharge clearance station.

The company is planning on constructing more interconnection lines, which shall enable connection of the Republic of North Macedonia with neighbouring countries, whereby, interconnections are foreseen with Greece, Kosovo, Serbia, Albania and Bulgaria.

The best envisaged perspective is the interconnection to Greece, an interconnection line for natural gas transmission connecting the Republic of North Macedonia and Greece. The project documentation was prepared and all necessary permits for project realization were acquired. An agreement for oversight of the construction was executed which had administrative support (management). By the end of 2025 tender documents for an inspection body shall be prepared in line with the rules of the European International Bank.

3.1.1.3 NATURAL GAS TRANSMISSION TARIFF

In line with the Rulebook for Setting Maximum Allowed Revenue and Regulated Average Tariffs on Natural Gas Transmission, Organization and Management of the Natural Gas Market, and Natural Gas Distribution („Official Gazette of the Republic of North Macedonia'' no. 234/23), on 30 September 2024, NOMAGAS JSC Skopje applied to the Energy Regulatory Commission for approving regulated revenue and tariffs for 2025, no. 11-4545/3.

On 28 November 2024, the Energy Regulatory Commission adopted the Decision for approving the average tariff of 0,1370 MKD / kWh for performing natural gas transmission. In line with this decision:

- The tariff for district heating and electricity producers in cogeneration plants, whereby electricity and district heating and / or mechanical energy is simultaneously and in a single process produced, amounts with 0,1337 MKD/ kWh of natural gas,
- The tariff for district heating producers and industrial consumers is in the amount of 0, 1470 MKD/kWh of natural gas, and
- The tariff for other consumers with natural gas consumption lower than 150.000 nm³ in the previous year, is in the amount of 0.1537 MKD/kWh of natural gas.

This decision increased the average tariff, and it reached 0.1370 MKD/kWh which, compared to the 2024 tariff of 0.1321 MKD/kWh is an increase of 3.71%. Considering the relatively small size and insufficiently developed system, the tariff on transmission is dependable by the quantities of natural gas transmission.

Chart 3.5 below reviews the previous data on the amount of average tariff for natural gas transmission, in the period from 2015 to 2025.

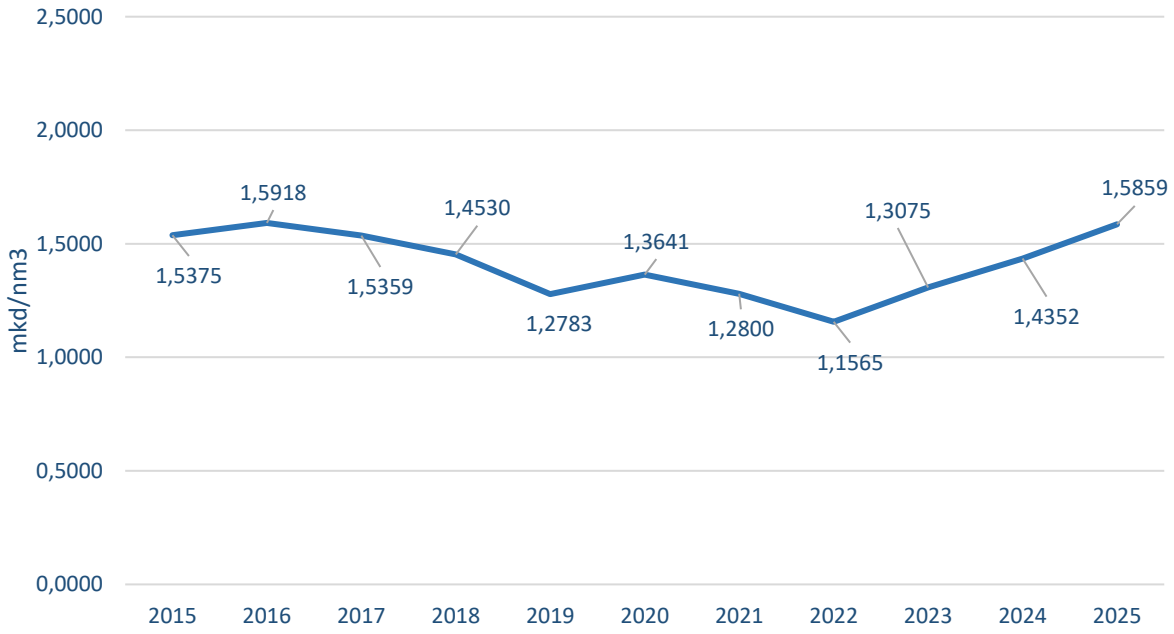


Table 3.5 Average electricity transmission tariffs in the period 2015 - 2025 (in mkd/kWh)

3.1.2 NATURAL GAS DISTRIBUTION TARIFFS

Natural gas distribution systems in the country are still in the early stages of development. Notwithstanding, the distributed quantities of natural gas within the systems are low, there is a continuant noticeable growth during the years. In the Republic of North Macedonia, there are three active natural gas distribution systems:

- The Directorate of the Technology and Industry Development Zones Skopje (DTIDZ Skopje),
- JPED Strumica Gas, Strumica and
- PP "Kumanovo - Gas", Kumanovo.

Table 3.2 Quantities of natural gas distribution in the distribution grids

Distribution system	2022 (kWh)	2023 (kWh)	2024 (kWh)	2024/2022 (%)	2024/2023 (%)
DTIDZ Skopje	54,248,853	54,805,919	54,264,693	0.03	-0.99
PPED Strumica Gas	9,303,577	8,373,589	8,890,649	-4.44	6.17
PP Kumanovo - Gas	2,673,667	3,842,383	5,505,403	105.91	43.28
Total	**66,226,098**	**67,021,892**	**68,660,745**	**3.68**	**2.45**

Table 3.2 gives an overview of the distributed quantities of natural gas through the above-mentioned systems. The largest quantities of natural gas distribution are within the distribution system of DTIDZ Skopje, where industrial consumers are located, and use the natural gas within their production processes, and for district heating.

The distributed natural gas quantities in DTIDZ, JP Strumica Gas, and JP Kumanovo Gas in the period from 2015 to 2024 are presented in Chart 3.6.

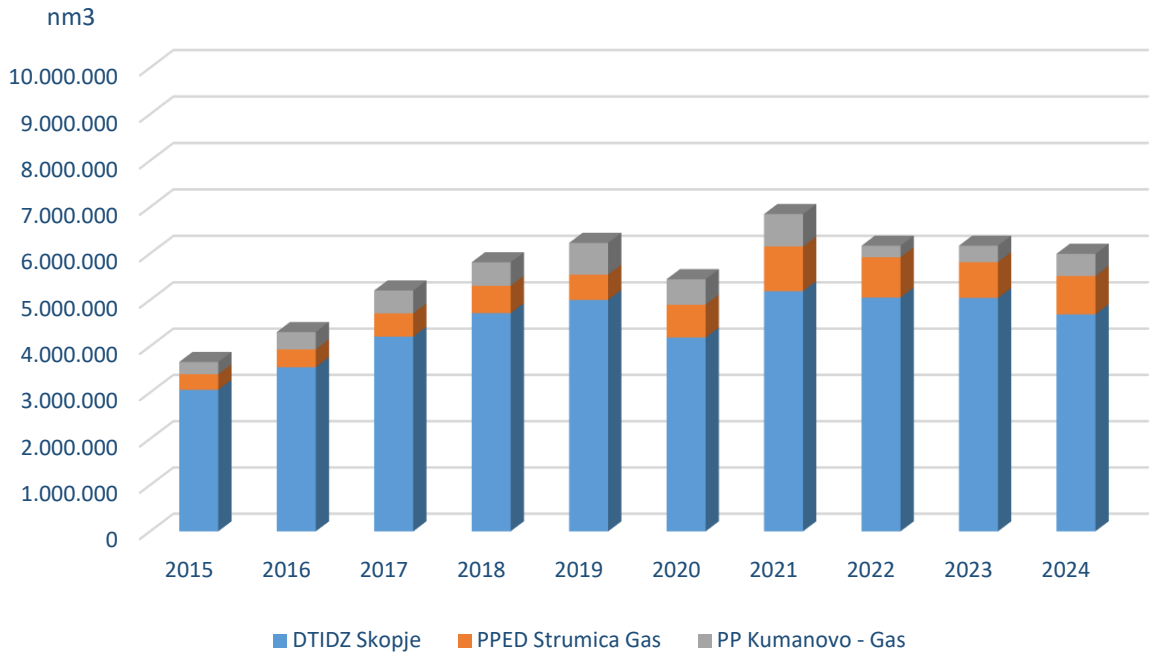


Chart 3.6 Distributed natural gas quantities in the period between 2015 and 2024

In 2024, transmitted natural gas quantities are approximately at the same level as 2023, except with JP "Kumanovo-Gas" which marks an increase of about 43%.

Table 3.3 Number of consumers in the natural gas distribution systems in the period between 2015 and 2024

Year	DTIDZ Skopje	PPED Strumica Gas	PP Kumanovo - Gas	Total
2015	7	202	37	**246**
2016	8	202	40	**250**
2017	7	240	57	**304**
2018	10	263	69	**342**
2019	9	294	86	**389**

2020	12	315	100	**427**
2021	14	355	117	**486**
2022	15	359	129	**503**
2023	16	360	158	**534**
2024	17	411	235	**663**

Table 3.3 and Chart 3.7 provide a review of the number of consumers, according to connection in the distribution systems, within the past 10 years. The highest number of consumers is in the distribution system managed by JPED "Strumica Gas", in 2024 with an overall 411 consumers. JP "Kumanovo Gas" has an overall of 235 consumers, and the least, i.e., 17 consumers are registered in the distribution system of DTIDZ Skopje.

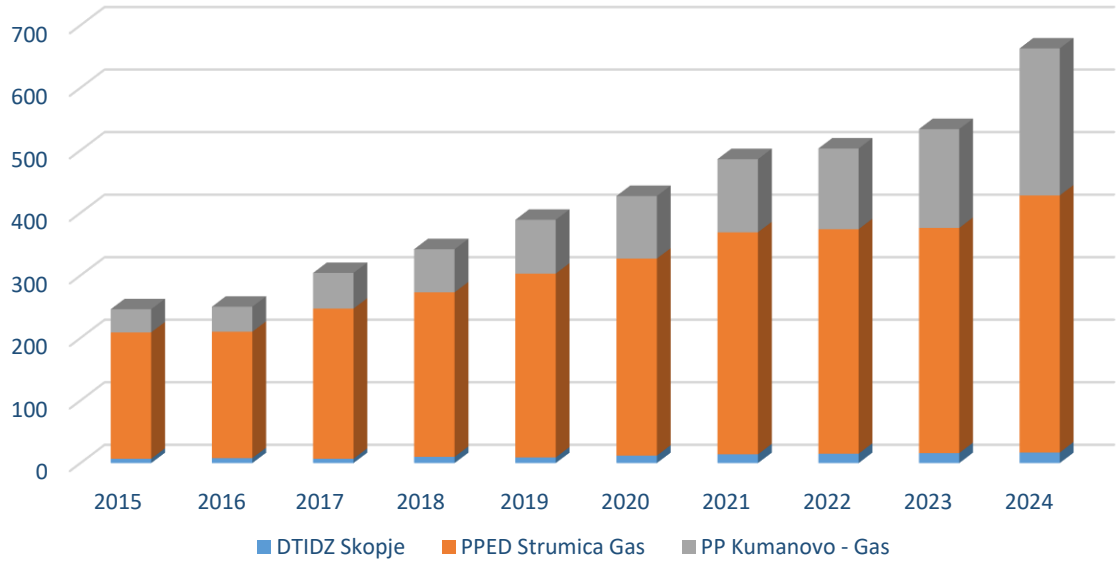


Chart 3.7 Number of consumers in the natural gas distribution systems in the period between 2015 and 2024

Typical for the number of consumers in JPED "Strumica Gas" and JP "Kumanovo Gas", is the continuous increase in the past period, and the most significant growth is in 2015 with further continuous increase of the number of consumers, which in 2024 is especially noticeable in JP "Kumanovo - Gas".

The above presented data indicate that the distribution system of the DTIDZ Skopje has the largest distributed quantity of natural gas to the least number of consumers, out of which most of them are industrial consumers.

In 2024, natural gas losses in the natural gas distribution system are within the allowed level of technical losses by 0.7 %, in accordance with article 14 of the Rulebook for Setting Maximum Allowed Revenue and Regulated Average Tariffs on Natural Gas Transmission, Natural Gas Market Organization and Management and Natural Gas Distribution.

3.1.2.1 DEVELOPMENT PLANS FOR THE NATURAL GAS DISTRIBUTION SYSTEMS

The bearers of licenses for performing energy activity - natural gas distribution pursuant to the Law on Energy are responsible for long-term planning of the development of the natural gas distribution systems which, mostly depends on the number and needs of the existing consumers, i.e., the interest and need for connecting new consumers, increasing the service quality, as well as the realistic and technical opportunities for realization. Furthermore, the natural gas distribution systems' operators have an obligation, according to the Energy Law, to submit a System Development Plan for the next five years to the ERC for approval each year. The main points of the development plans for each of the three operators are presented below.

DTIDZ Skopje, bearer of license for distribution of natural gas as of 2009 is an operator of a distribution gas pipeline grid with about 7.7 km length connected to the natural gas transmission system. In the upcoming years an increase of the number of users in the zone is expected, and thus, the number of consumers, so consequently, the following investments are expected:

- Projection and initiating the construction of the branch in TIDZ Skopje 3 in length of 2,600 meters,
- Construction of new branches in TIDZ Skopje 1 and 2,
- Integrating new metering equipment with telemetric.

In the course of 2024, the ERC approved the DTIDZ Skopje' Development Plan.

JP "Kumanovo - Gas", Kumanovo was established in 2006, and it is the first natural gas distribution system connected to the natural gas transmission system. The current implementation of the construction of the distribution network of 22.5 km and 235 connections is planned to successively increase over the next five years from 295 in 2025 to 1,000 connections in 2029, as well as the phased development of the distribution network with the construction of a secondary gas pipeline 30 km long, which will be able to supply up to 3000 users. The expected successive delivery of natural gas is from about 9 million kWh in 2025 to about 11.6 million kWh in 2029.

During 2024, the ERC approved the Network Rules for the Distribution of Natural Gas, the Rules for the Procurement of Natural Gas and System Services for Covering Losses in the Distribution Network, and the Reminder for Consumers of PE "Kumanovo - Gas".

JPED "Strumica Gas" Strumica was established in 2010, and it is the only natural gas distribution system operator which is not connected to the natural gas transmission system in the Republic of North Macedonia. This distribution system is so-called virtual gas pipeline system i.e., a system where the natural gas is a system of compressed natural gas in transportation modules under pressure of 200 bar to 250 bar, which are later transported to the decompressor station of JPED "Strumica Gas" in the vicinity of Strumica. The distribution of the natural gas through the distribution system is conducted after the natural gas is decompressed to the level of 4 bar. JPED "Strumica Gas" has already constructed the most significant sections in the city and at the end of 2024 the total length of the gas pipeline network will be over 44 km. Taking into consideration the lack of usage of the existing grid, construction of smaller sections for new connections is planned, as well as gradual increase of the number of connections and the quantities of natural gas. In that regard, in addition to the subsidies from the municipality of Strumica for new connections

amounting to 100 EUR, as of June 2024 the municipality adopted a decision for complete subsidizing of the connection. A new website, new software solutions for the users, as well as new management system are planned. A graphic presentation of the distributive grid is presented in the next image.

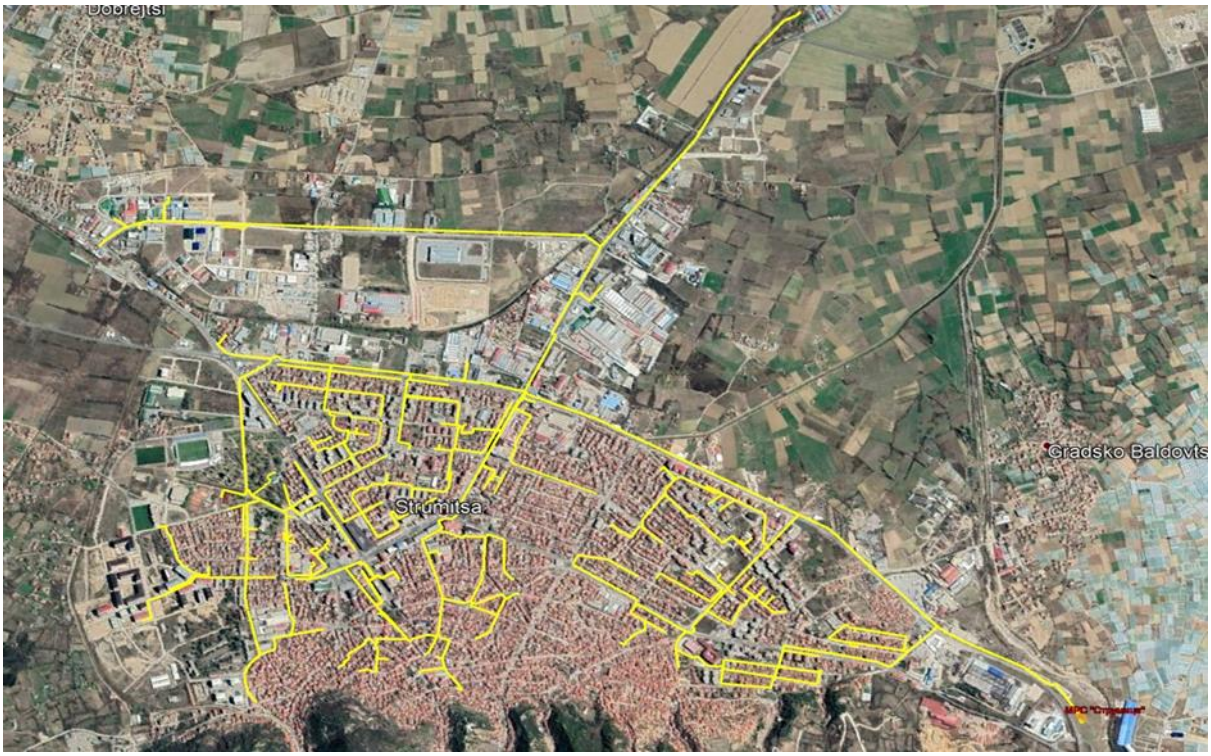


Image 3.1 Presentation of the distributive gas pipeline grid of Strumica Gas

In 2024, in addition to the Development Plan, the ERC approved the Rulebook for procurement of compressed natural gas and system services for covering the losses in the distributive grid and the Reminder for Consumer, while also discussing the submitted Procedure for acting upon objections of JPED "Strumica Gas".

3.1.2.2 NATURAL GAS DISTRIBUTION TARIFFS

At the end of December 2024, the Energy Regulatory Commission adopted Decisions on new tariffs on natural gas distribution referring to the three active distribution system operators, commencing application from 2025 (Table 3.4), and the tariffs are expressed in MKD per kWh.

Table 3.4 Tariffs on natural gas distribution in 2025 (MKD/kWh)

DTIDZ Skopje	PPED Strumica Gas	PP Kumanovo - Gas
0.2223	0.4274	0.4216

Table 3.5 gives a presentation of the tariffs for natural gas distribution by individual distribution systems which the Energy Regulatory Commission has approved for the period 2015-2025. The tariffs are expressed in MKD/nm^3 for comparison, because previously the tariffs were defined for nm^3.

Table 3.5 Tariffs on natural gas distribution in the period 2015 - 2025 (MKD/nm^3)

Year	DTIDZ Skopje	PPED Strumica Gas	PP Kumanovo - Gas
2015	2.6213	2.8700	/
2016	2.2879	2.8700	/
2017	2.8418	2.8700	3.0000
2018	2.7957	2.8700	3.0000
2019	2.7127	2.8700	3.0000
2020	2.6603	2.8700	3.0000
2021	2.4992	2.8700	3.0000
2022	2.5791	2.9500	3.0000
2023	2.3690	3.6864	4.4554
2024	2.4151	3.8177	4.5803
2025	2.5733	4.9474	4.8803

DTIDZ Skopje has the longest period in history data in relation to the tariff on distribution, pointing to some fluctuations of the tariff within this distribution system operator. Compared to JP Kumanovo Gas and JPED Strumica Gas, the tariff was almost fixed considering the relatively low quantities distributed through these systems, whereby an insignificant increase is noted with the last decision on price, which is also the case with the last price decision.

3.2 WHOLESALE NATURAL GAS MARKET

The natural gas market in the Republic of North Macedonia is fully liberalized as of 2015 when the legal preconditions were met, and thus the Energy Regulatory Commission no longer determines the monthly selling price of the natural gas in the country. Following the liberalization in 2015 the Energy Regulatory Commission determines only the tariffs for regulated energy activities transmission and distribution of natural gas.

In 2023 additional free capacity at the interconnector with Bulgaria was provided, enabling increased competitiveness in relation to the natural gas import in the country.

Chart 3.8 below displays a review of all participants entitled to participate in the natural gas market in the Republic of North Macedonia, in 2024.

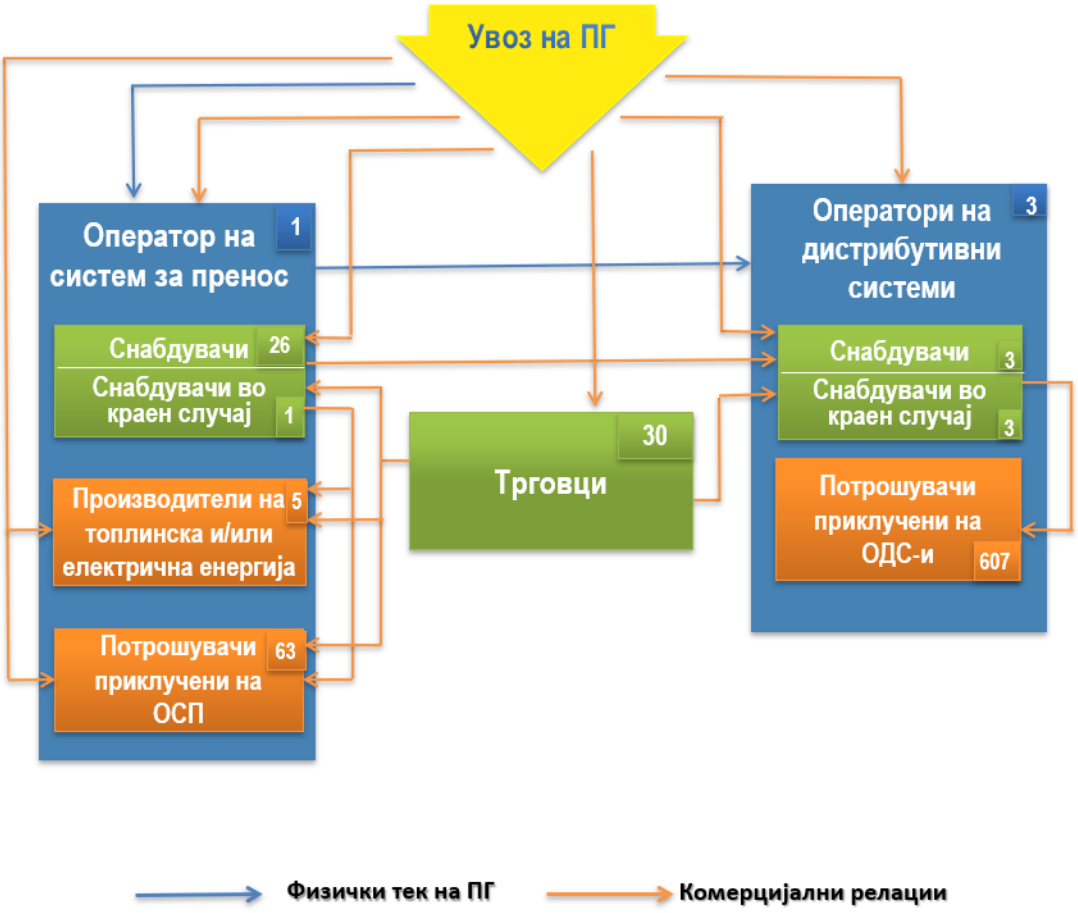


Chart 3.8 Participants in the natural gas market in the Republic of North Macedonia in 2024

In 2024 seven natural gas traders participated individually in the procurement of natural gas from import, which is a record number of importers.

This is an additional indicator that there is dynamics and movement on the natural gas market and increased competitiveness.

Chart 3.9 presents the market share of the wholesale traders on the natural gas market in 2024. In 2024, a dominant share in the import and wholesale trade of natural gas has TE-TO JSC Skopje with 71.9 %, followed by JSC Makpetrol Skopje, whose share is 15.8%.

Typical for TE-TO JSC Skopje, as a dominant participant in the wholesale natural gas market is the lack of classic trade activities, i.e., this company uses the imported natural gas primarily for personal needs, in the part of the combined production of electricity and district heating.

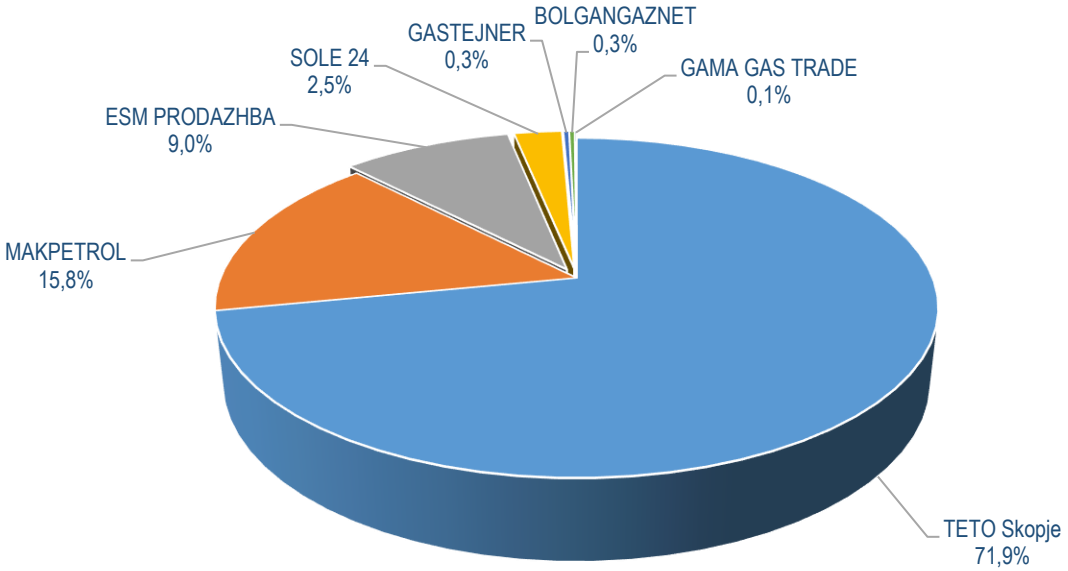


Chart 3.9 Market share of the wholesale traders on the natural gas market in 2024

Chart 3.10 represents the share in natural gas consumption according to type of consumers in 2024, whereby a dominant share of 85 % of natural gas consumption in North Macedonia is by cogeneration plants of electricity and district heating production.

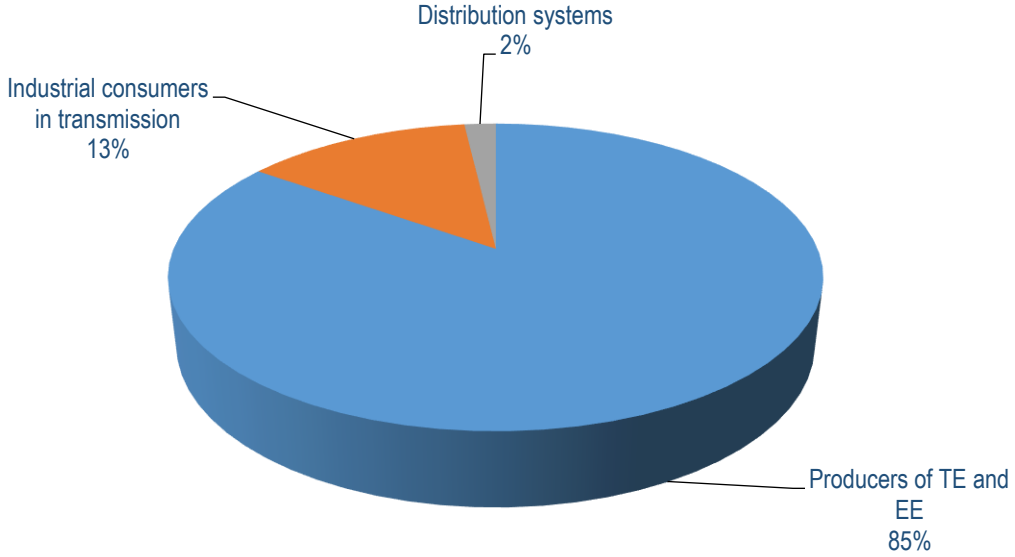
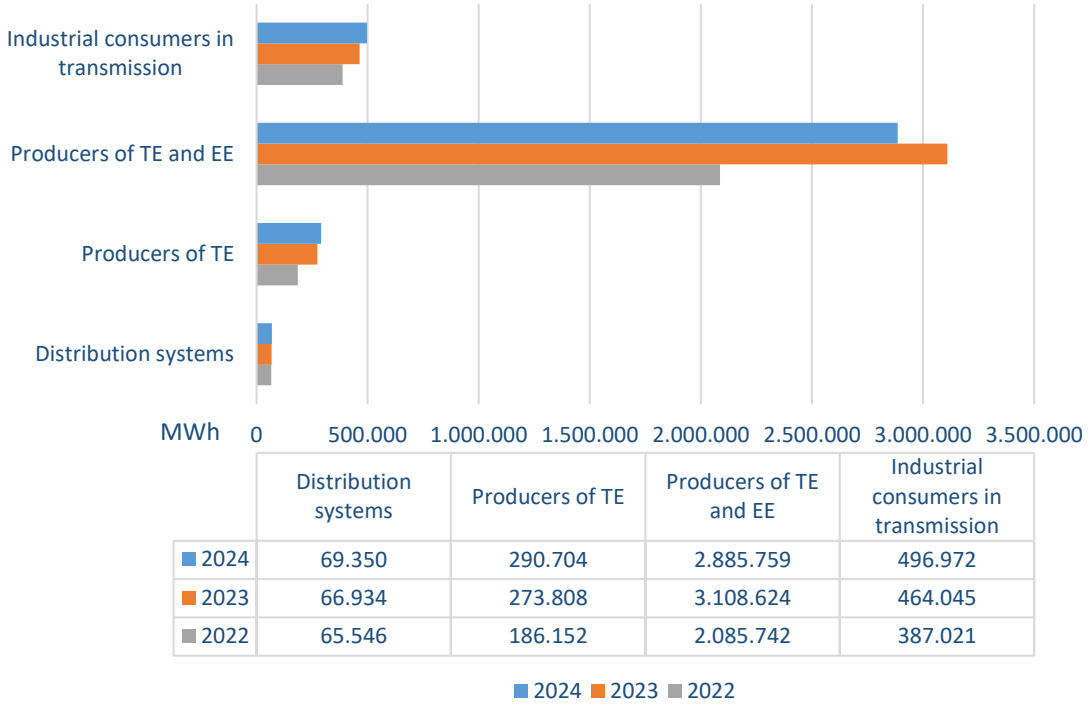


Chart 3.10 Share in natural gas consumption according to consumers in 2024

They are immediately followed by industrial consumers, primarily from the metal industry, connected to the transmission system, with a 13% share in consumption of natural gas, while the share of consumption within the natural gas distribution systems in 2024 is 2%.

Chart 3.11 displays the natural gas consumption according to type of consumers in the period between 2022 to 2024, expressed in MWh.



	Distribution systems	Producers of TE	Producers of TE and EE	Industrial consumers in transmission
2024	69.350	290.704	2.885.759	496.972
2023	66.934	273.808	3.108.624	464.045
2022	65.546	186.152	2.085.742	387.021

Chart 3.11 Natural gas consumption according to type of consumers in the period between 2022 to 2024 (in MWh)

The presented data indicate that natural gas consumption in 2022, 2023 and 2024 the consumption of natural gas increased again, and the greatest increase is noticed with the cogeneration plants for electricity and district heating production.

3.2.1 AVERAGE PRICES IN THE WHOLESALE MARKET

The natural gas market in the Republic of North Macedonia has been fully liberalized since 2015, which allows free price formation by market participants. However, the natural gas market remains underdeveloped, with relatively low natural gas consumption and a small number of active natural gas traders and suppliers. It is noticeable that in 2024 there was a large movement on the market with an increased number of participants and importers. Since the beginning of 2023, the capacity of the interconnector to Bulgaria has increased, enabling greater competitiveness in the natural gas market.

Chart 3.12 gives an overview of the average importing prices of natural gas expressed in MKD/nm^3 for the period 2016-2024, following the natural gas market liberalization.

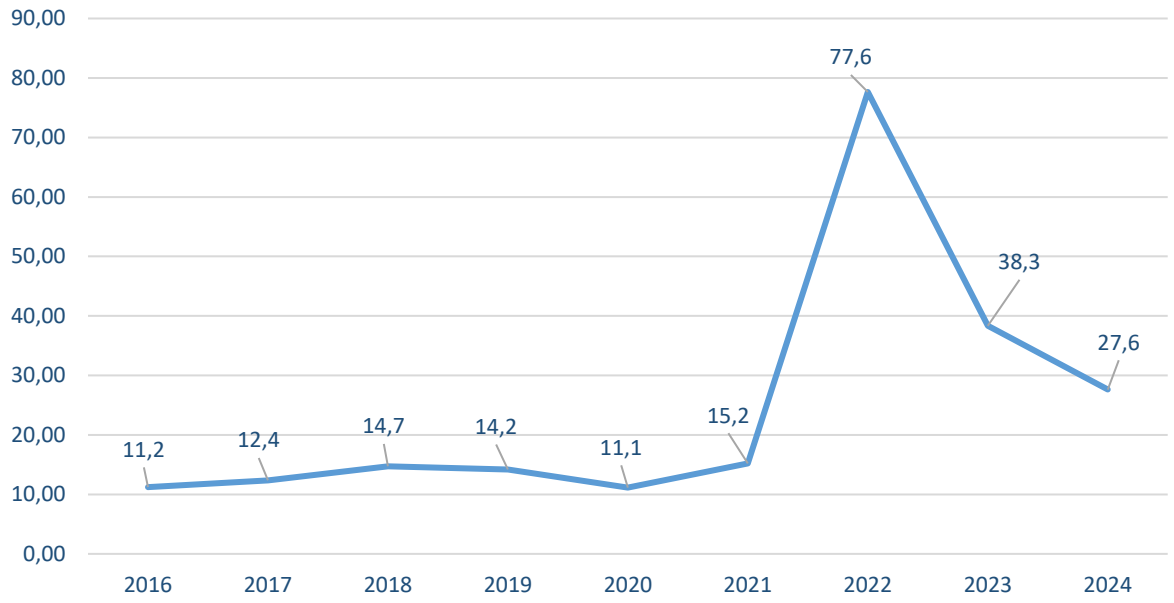


Chart 3.12 Average import prices of natural gas in expressed in MKD/nm3 and for the period between 2016 and 2024

In 2024, the average import price was 27.6 MKD/nm3, i.e., 38.8 EUR/MWh. Nevertheless, when compared to the years before the crisis, until 2022, import prices of natural gas were from 11 to 15 MKD/nm3, current prices are still higher. It represents a significant decrease of the price in relation to 2023 when it was 38.3 MKD/nm3 and is significantly lower than 2022, the year of the crisis, when the price reached 77.6 MKD/nm3. However, compared to the period before the crisis until 2022, when the importing prices of the natural gas moved within the frames of 11 to 15 MKD/nm3, the current prices are higher.

Chart 3.13 provides an overview of average import prices of natural gas in the country for the period between 2016 to 2024, expressed in EUR/MWh.

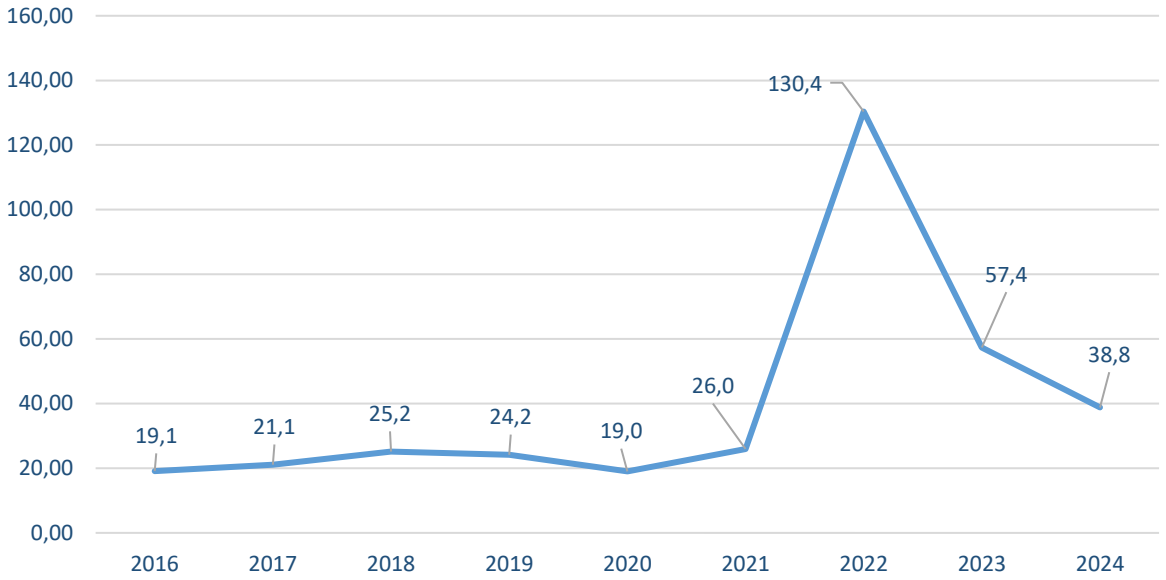


Chart 3.13 Overview of average import prices of natural gas in the period between 2016 to 2024, (in EUR/MWh)

The chart follows a similar trend with the previous one expressed in MKD/nm3, whereby the peak was during 2022 when the average price was 130 EUR/MWh. Previously, the price varied in the range between 20 to 25 EUR/MWh. In 2023 the average price was 57 EUR/MWh whereas in 2024 this price was reduced, and it amounted 38.8 EUR/MWh.

Chart 3.14 presents the movement of the average monthly import price, expressed in EUR/ MWh. The prices presented below refer to natural gas as an energy source, i.e., they do not comprise the tariffs of network operators.

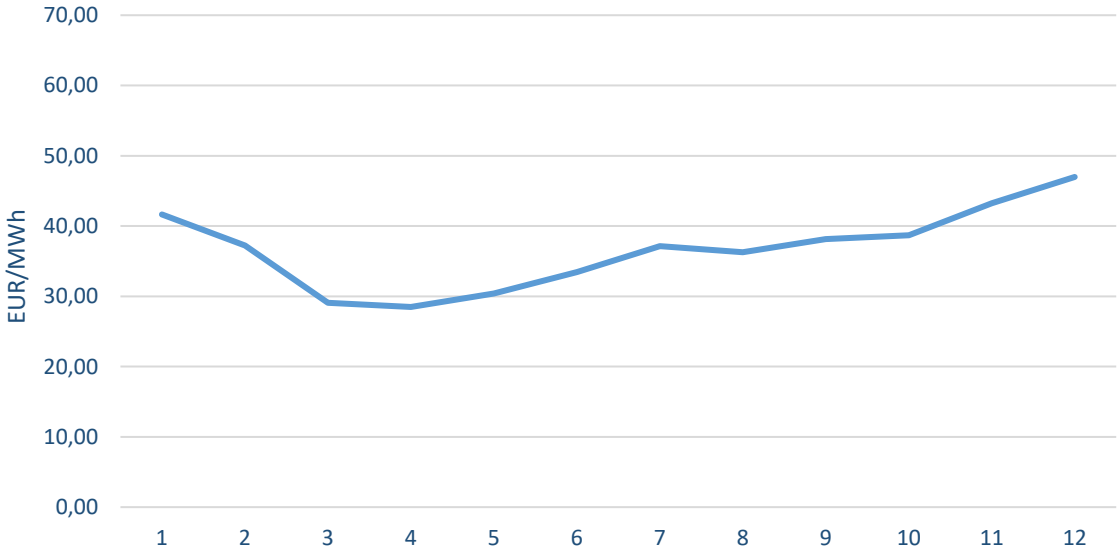


Chart 3.14 Overview of the average monthly import price of natural gas in 2024 (in MKD/nm3)

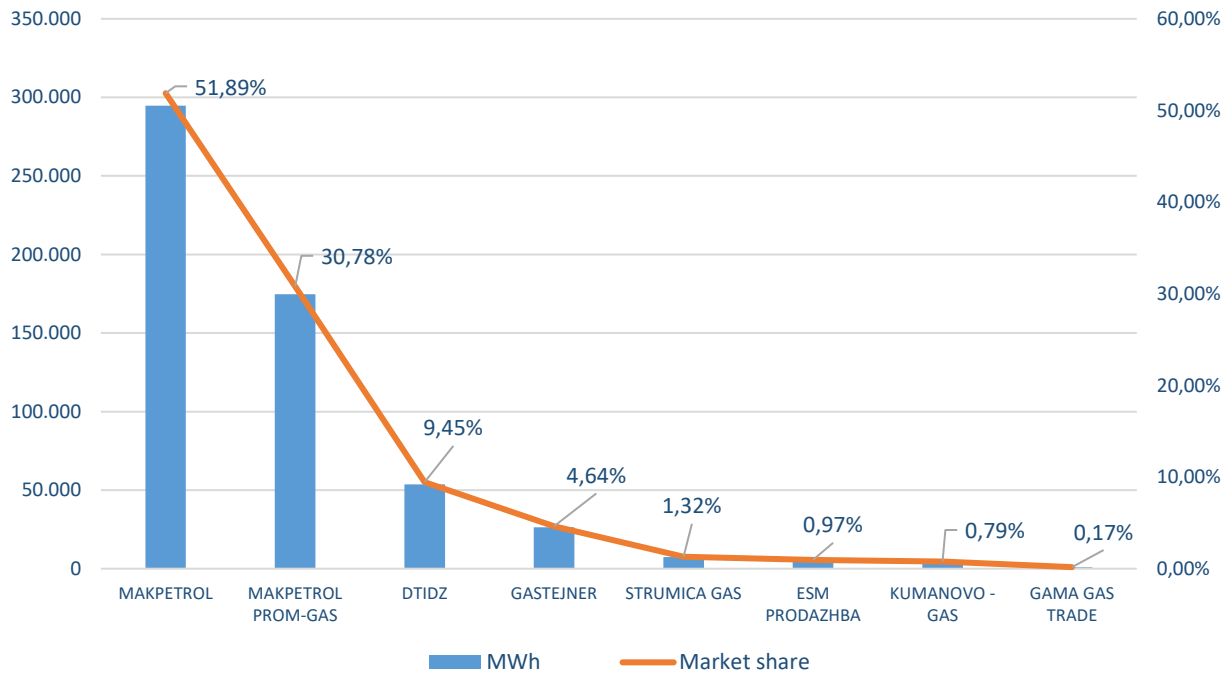
The data presented above indicate that the price of the natural gas is decreasing in the first part of the year, until May, when it started increasing, and towards the end of the

year, it additionally increased and reached highest price in December 2024, 47 EUR/MWh. In the course of 2024, the price varied in the range between 30 to 50 EUR/MWh.

3.3 NATURAL GAS RETAIL MARKET

The retail natural gas market comprises natural gas supply to consumers connected to distribution systems, and the supply to consumers directly connected to the natural gas transmission system. DTIDZ Skopje, Kumanovo-Gas and Strumica Gas perform natural gas supply to consumers connected to distribution systems which they manage, while the others provide natural gas supply to consumers directly connected to the natural gas transmission system.

Chart 3.15 indicates that in 2024, Makpetrol JSC Skopje had a dominant share for supply in the retail natural gas market with 51.89 %, followed by Makpetrol Promgas DOOEL Skopje with 30.78 % of market share, DTIDZ Skopje with 9.45 %, etc. A total of eight suppliers/traders performed direct sale to natural gas consumers.



Accomplished sales (MWh) and market share (%) of traders/suppliers on the natural gas retail market in 2024

Chart 3.16 gives presentation of the accomplished sales of natural gas in Mwh, to consumers connected to the transmission system and consumers connected to the distribution systems, in the period 2022-2024.

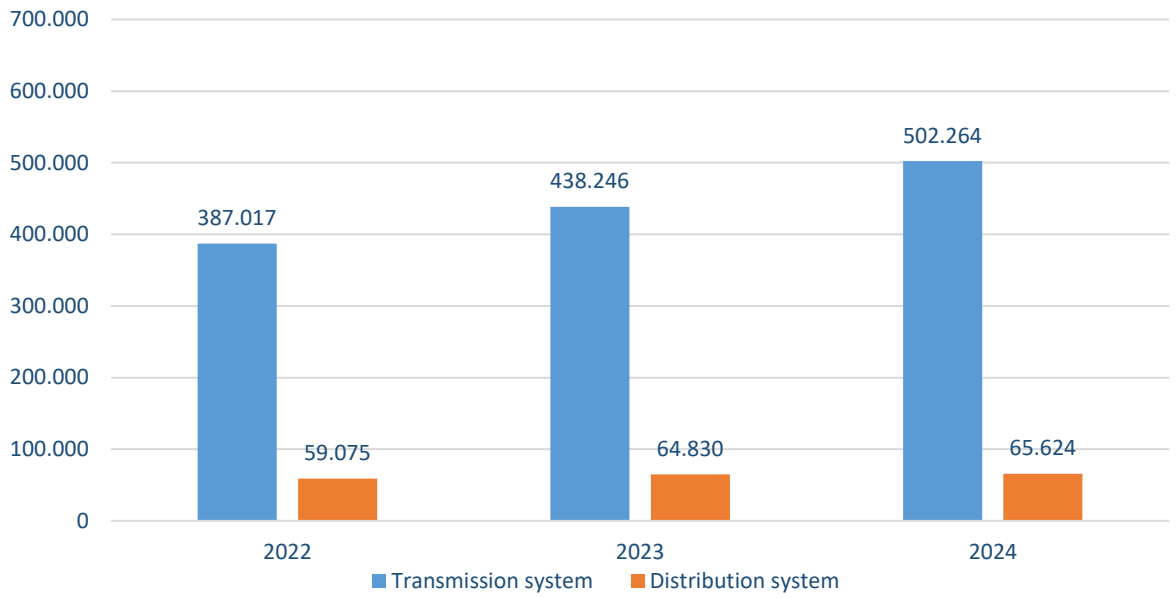


Chart 3.16 Natural gas sale to consumers connected to the transmission system and to distribution systems, in the period from 2022 to 2024 (in MWh).

The data from Chart 3.16 indicates that a dominant volume of consumption in the retail natural gas market is made by consumers connected to the transmission system, while the consumption by distribution systems is significantly lower. In 2024 an increase of natural gas consumption is noted, compared to previous years.

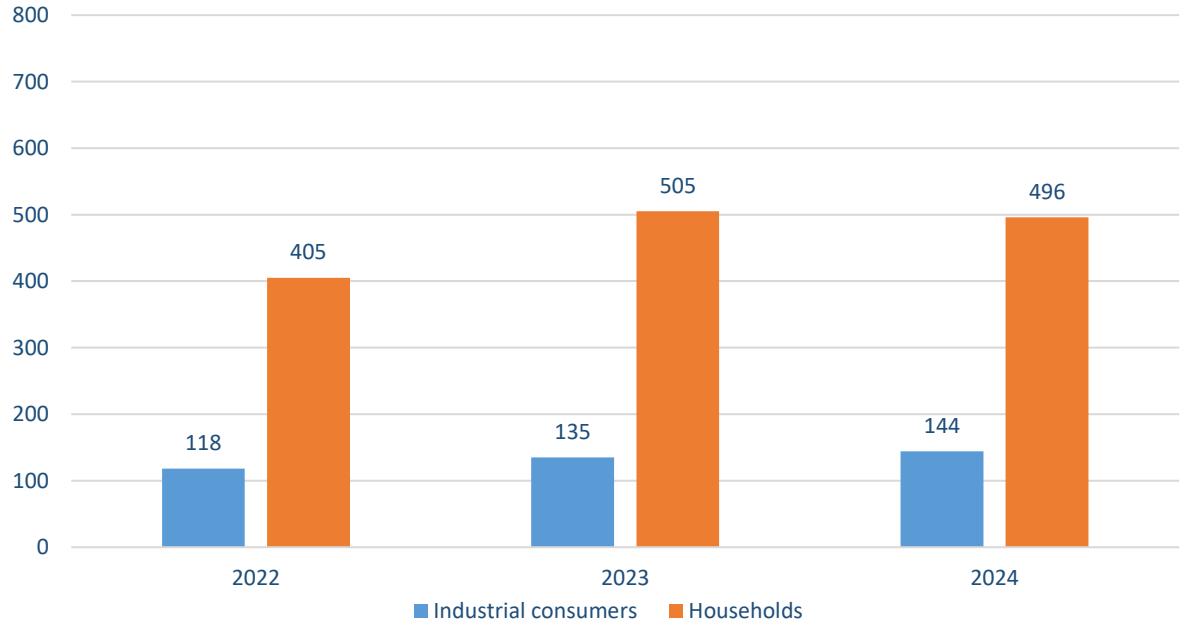
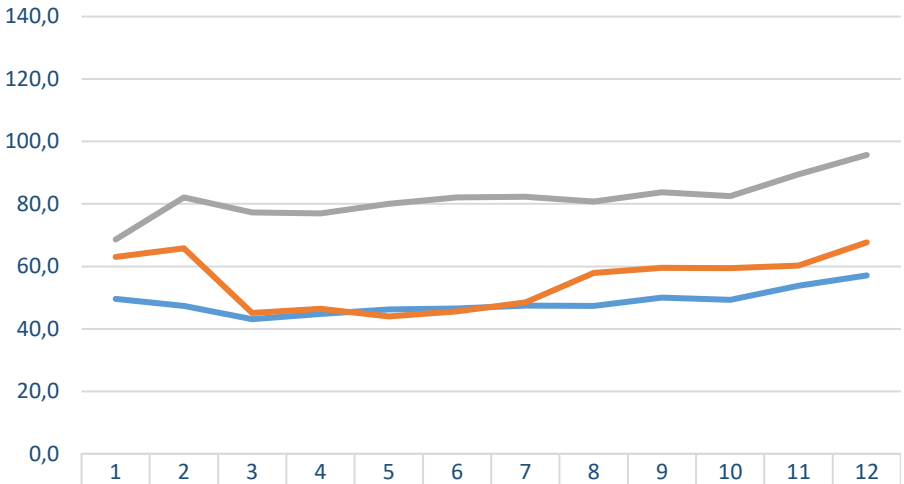


Chart 3.17 Average number of consumers supplied in the retail natural gas market in the period from 2022 to 2024

Chart 3.17 provides an overview of the average number of industrial consumers and households supplied in the retail natural gas market in the period between 2022 to 2024, with a noticeable increase for households, especially in 2023 compared to 2022. In 2024 the number of households is insignificantly reduced compared to 2023, whereas the number of industrial consumers has increased.

3.3.1 AVERAGE RETAIL PRICES Following the drastic increase in natural gas prices in 2022, there was decline in 2023 and 2024.



	1	2	3	4	5	6	7	8	9	10	11	12
Industrial consumers in transmission	49,6	47,4	43,1	44,8	46,2	46,6	47,4	47,3	50,0	49,3	53,8	57,1
Industrial consumers in Distribution	63,0	65,8	45,1	46,5	44,0	45,6	48,5	57,9	59,6	59,5	60,3	67,7
Households	68,6	82,1	77,3	77,0	80,1	82,1	82,3	80,7	83,8	82,5	89,5	95,7

Chart 3.18 Average monthly prices in the retail market according to consumer categories with natural gas transmission/ distribution tariffs in 2024 (in EUR/MWh)

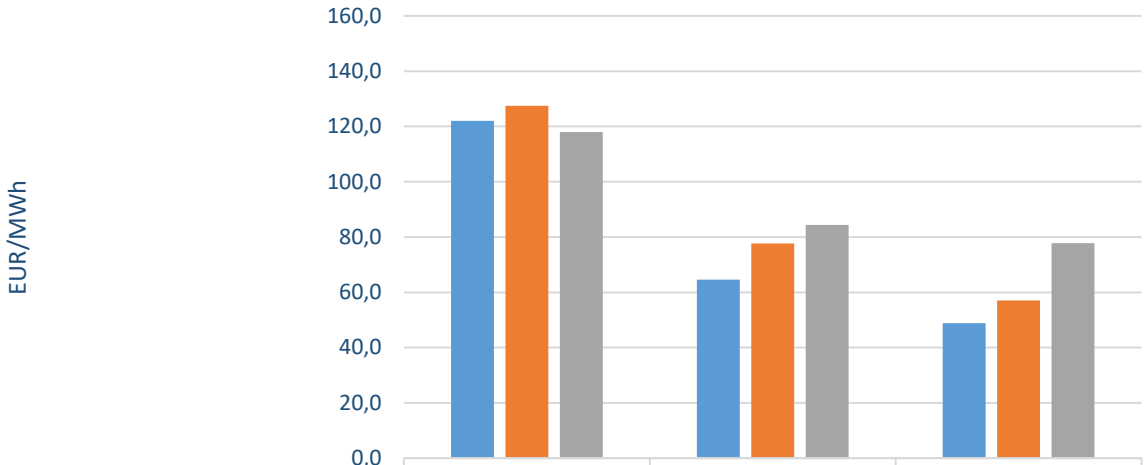
Chart 3.18 provides an overview of average monthly prices realized in the retail natural gas market, according to consumer categories and with tariffs on natural gas transmission/distribution in 2024, expressed in EUR/ MWh.

As we can see, in the first part of 2024 the industrial consumers mark a small fall in the prices, only to rise again towards the end of the year. For households, there is an increase at the beginning of the year, then stable prices and again an increase in prices towards the end of the year.

What can additionally be noted from Chart 3.18 is that the lowest prices for natural gas are paid by industrial consumers who are connected directly to the natural gas transmission system, because they do not have distribution costs and additional supply margins. An interesting fact is that in certain months the price of natural gas for industrial consumers connected to distribution approaches and is almost the same as for consumers connected to transmission. Among the distribution systems, the DTIDZ system is dominant, where there are the largest quantities.

On the other hand, households which are supplied by natural gas distribution systems managed by JP Kumanovo Gas and JP Strumica Gas pay the highest prices.

Chart 3.19 presents the average monthly prices at the retail market by categories of consumers with included transmission/distribution tariffs for natural gas for the period 2022-2024 (in EUR for MWh)



	2022	2023	2024
Industrial consumers in transmission	122,0	64,6	48,8
Industrial consumers in Distribution	127,5	77,6	57,0
Households	117,9	84,4	77,8

Chart 3.19 Average monthly prices at the retail market by categories of consumers with included transmission/distribution tariffs for natural gas for the period 2022-2024 (in EUR for MWh)

The graph shows the same trend as in the previous data, which is that after the drastic increase in natural gas prices in 2022, there was a decrease in 2023 and 2024.

The final prices for all categories of consumers on the retail market for 2024 were on average in the range of 45 to 80 EUR/MWh and are almost half lower than the previous year, 2023.

DISTRICT HEATING

2024

IV. DISTRICT HEATING

One of the more significant activities that took place on the district heating market in 2024 were the submitted applications for issuance of licenses for performing the energy activities of regulated production, distribution and supply of district heating energy to the Steam and Hot Water Supply Company ENERGY ECOLINK AD Skopje (formerly known as Toplana Skopje Sever) in November 2024.

Pursuant to the applications submitted, on 27 February 2025 the Energy Regulatory Commission issued a license for performing energy activity - regulated production of district heating and license for performing energy activity - district heating supply to ENERGY ECOLINK JSC Skopje.

Regarding the submitted Application for issuance of a license to perform the energy activity of distribution of district heating by ENERGY ECOLINK AD Skopje, a Decision has been issued to suspend the procedure until the submission of appropriate documentation as proof of ownership or right to use the land and/or fixed assets through which the activity is performed.

In July 2024 the Energy Regulatory Commission adopted a Rulebook amending the Rulebook for Setting Prices for District Heating and System Services which amends and clarifies the period which is taken into consideration when calculating the average specific consumption of natural gas in production of electricity, and at the same time, it takes into consideration the level of efficiency of a power plant which uses natural gas for production of district heating.

In July 2024, the Energy Regulatory Commission adopted Decisions on determining the regulated maximum revenue and tariffs for 2024, which reduced the price of district heating for households and other consumers by an average of 17%, but if we take into account that in the previous period the price of district heating was subsidized by the Government of the Republic of North Macedonia due to the energy crisis, the effective reduction for consumers is 3% because it is no longer subsidized as of August 2024.

In December 2024 and January 2025, the companies submitted extraordinary Requests for changes to regulated income and tariffs for district heating, due to the trend of increasing natural gas prices. Pursuant to the applications submitted, the Energy Regulatory Commission in January and February 2025 adopted Decisions amending the Decisions for setting the maximum regulated revenue and tariffs for 2024 with which the district heating price for households and other consumers was increased by 5% on average.

District heating market Description

In the Republic of North Macedonia active systems for central heating are present only on the territory of the city of Skopje where the following three systems function:

- The central heating system managed by JSC for production of electricity ELEKTRANI NA SEVERNA MAKEDONIJA, state-owned, Skopje, which is the biggest system, and, in the course of 2024, more than 63,000 consumers were connected to this system with total engaged capacity of 530 MW;
- The central heating system of JSC ESM Skopje, subsidiary Energetika with about 2,100 consumers connected with total engaged capacity of about 40 MW;

- The central heating system of JSC ENERGY ECOLINK Skopje, with about 485 consumers connected with total engaged capacity of about 8.6 MW.

In 2024 on the District Heating Market, the regulated energy activity performers located on the territory of the City of Skopje, are:

- ESM PROIZVODSTVO NA TOPLINA Skopje;
- ESM DISTRIBUCIJA NA TOPLINA Skopje;
- ESM SNABDUVANJE SO TOPLINA DOOEL Skopje;
- JSC ESM Subsidiary Energetika; and
- Energi Ekolink JSC Skopje.

The companies owned by JSC ESM which manage the largest central heating system in the Republic of North Macedonia. The production of district heating is carried out with fixed assets that have been taken over by ADORA ENGINEERING DOOEL Skopje under a lease agreement.

District heating distribution is performed with base assets (hot water distribution grid) which JSC ESM Skopje gives under lease to ESM DISTRIBUCIJA NA TOPLINA DOOEL Skopje with an Agreement on Lease of the current district heating distribution system.

Image 4.1 displays the district heating distribution system of the Company on District Heating Distribution ESM DISTRIBUCIJA NA TOPLINA DOOEL Skopje.

Image 4.1 Presentation of the district heating distribution system of the Company on District Heating Distribution ESM DISTRIBUCIJA NA TOPLINA DOOEL Skopje

4.1 DISTRICT HEATING PRODUCTIONThere are three regulated producers of district heating, and one unregulated producer of district heating operating in the territory of the City of Skopje.

On 27 February 2025 the Energy Regulatory Commission adopted a Decision for issuance of a license for performing energy activity - regulated production of district heating to ENERGY ECOLINK JSC Skopje, valid until 2045.

The capacities for district heating production of ESM PROIZVODSTVO NA TOPLINA DOOEL – Skopje, are:

- Toplana Istok (Heating Plant East), with a production capacity of 279 MW, located in the east industrial zone of the city; and
- Toplana Zapad (Heating Plant West) with a production capacity of 171 MW, located in Taftalidze Settlement.

The overall active production capacity of district heating plants, managed by ESM PROIZVODSTVO NA TOPLINA DOOEL Skopje, is 450 MW. Natural gas is used to produce district heating.

The combined producer of district heating and electricity, TE-TO JSC Skopje, accommodates 160 MW of district heating production capacity as an unregulated producer of district heating.

JSC ESM Skopje, subsidiary Energetika provides availability of an overall production capacity of 96 MW including the cogeneration plant of district heating and electricity plant with production capacity of 13.5 MW.

ENERGY ECOLINK JSC Skopje produces district heating in two boilers of 23 MW each i.e., has a production capacity of 46 MW.

Table 4.1 provides a tabular overview of district heating production capacities.

Table 4.1. District heating production capacities

Company	Heating plant / boiler	Fuel	Technology	Capacity [MW]
ESM Proizvodstvo na toplina	TO Istok	Natural gas	TO	279
ESM Proizvodstvo na toplina	TO Zapad	Natural gas	TO	171
Toplifikacija	TO 11 Oktomvri	Natural gas	TO	28
TE-TO Skopje	TE-TO Skopje	Natural gas	TE-TO	160
ESM	ESM Energetika K1	Natural gas	TO	32
ESM	ESM Energetika K2	Natural gas	TO	32
ESM	ESM Energetika K3	Natural gas	TO	32
ESM	TE-TO KOGEL TE	Natural gas	TE-TO	14
ENERGI EKOLINK	ENERGI EKOLINK K1	Natural gas	TO	23
ENERGI EKOLINK	ENERGI EKOLINK K2	Natural gas	TO	23

The overall capacity for district heating production, including the unregulated producer, is 794 MW. District heating production depends on the weather conditions, and usually the largest production is reached in January, February, and December (Table 4.2).

Table 4.2 Produced district heating according to months and producers in 2024 (kWh)

Month	ESM Proizvodstvo na toplina	TETO Skopje	ESM-Energetika	ENERGI EKOLINK	Total (kWh)
January	46,021,300	72,695,400	10,137,906	1,774,000	**130,628,606**
February	24,996,300	55,037,600	6,194,318	1,302,000	**87,530,218**
March	42,324,700	20,018,400	5,247,857	994,000	**67,584,957**
April	20,043,300	4,079,500	1,989,107	450,000	**26,561,907**
October	15,323,649	6,635,900	2,125,690	386,000	**24,471,239**
November	38,692,208	55,096,700	7,964,123	1,525,000	**103,278,031**
December	58,235,992	59,319,000	9,481,924	1,886,000	**128,922,916**
Total	**245,637,449**	**272,882,500**	**43,140,925**	**8,317,000**	**569,977,874**

The division of the total produced district heating by months and producers in 2024 is provided in Chart 4.1.

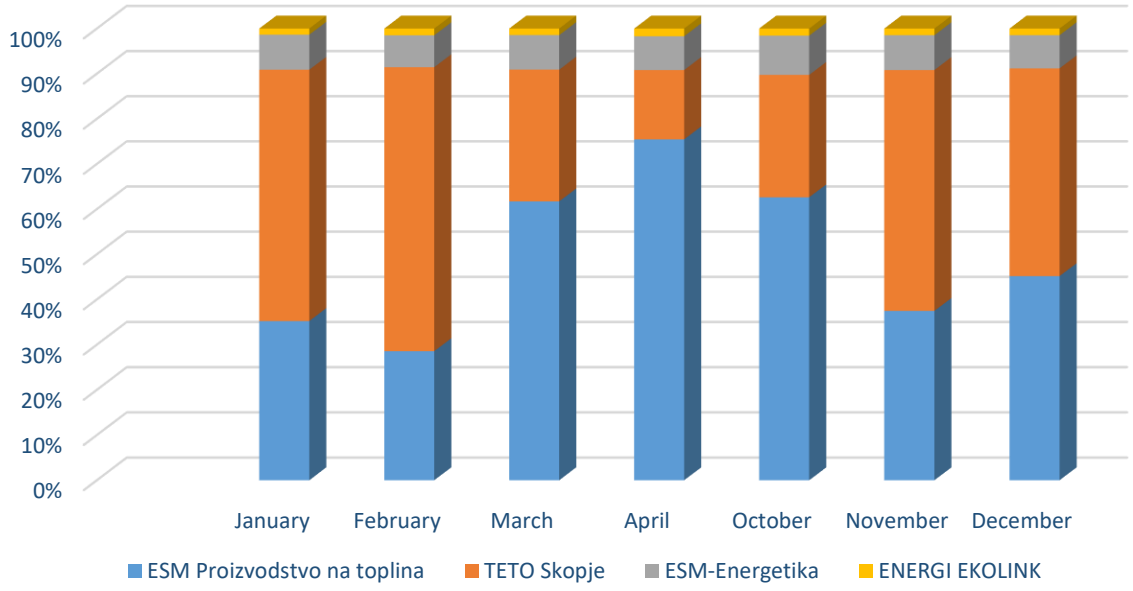


Table 4.1 Division of produced district heating according to months and producers in 2024 (kWh)

All producers of district heating exploit natural gas as fuel, providing positive influencing to the ecological aspect. Table 4.3 below provides a review of natural gas consumption according to months and producers in 2024.

Table 4.3 Natural gas consumption according to months and producers in 2024 (kWh)

Month	ESM Proizvodstvo na toplina	ESM-Energetika	ENERGI EKOLINK	Total
January	54,841,251	/	2,037,455	**56,878,706**
February	28,821,145	/	1,445,001	**30,266,146**
March	46,759,565	/	1,055,000	**47,814,565**
April	21,374,221	/	497,099	**21,871,320**
October	16,810,076	2,388,416	438,846	**19,637,338**
November	45,056,548	/	2,296,898	**47,353,446**
December	66,974,361	/	2,337,235	**69,311,596**
Total	**280,637,167**	**/**	**10,107,534**	**290,744,701**

*Note: For ESM Energetika, in the months in which there is no data on consumed natural gas, the necessary quantities of district heating are provided only by the cogeneration plant Kogel. For October 2024 is a calculation.

The delivered district heating and consumed natural gas quantities are in tight correlation with the external temperatures reached in the period of the heating season from 2014- 2024 (Chart 4.2).

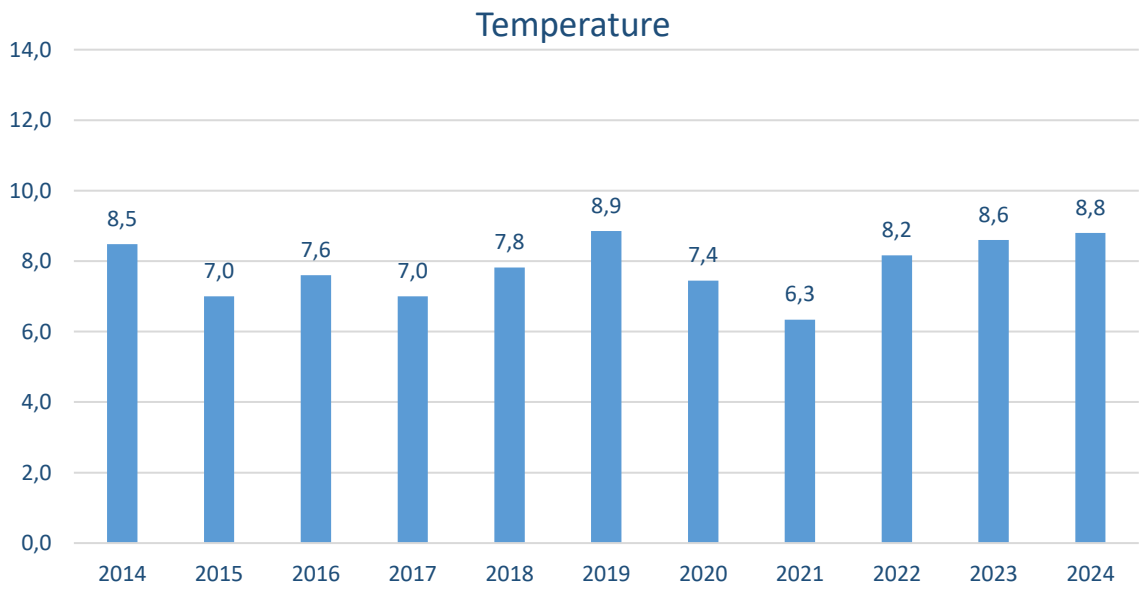


Chart 4.2 External temperatures reached in heating season months in the period from 2014 to 2024

In 2024, the mean outside temperature during the heating season was 8.8°C, and is considerably higher than the average forecasted temperature of 6.23°C.

4.2 DISTRICT HEATING DISTRIBUTION

At the territory of the city of Skopje, the active district heating distribution systems are managed by:

- The company for district heating distribution ESM PROIZVODSTVO NA TOPLINA DOOEL – Skopje;
- JSC ESM Subsidiary Energetika; and
- Energi Ekolink JSC Skopje.

The energy balance for taken and delivered quantities of district heating, expressed in kWh by the distributors per months in 2024 is provided in Table 4.4.

Table 4.4 Energy balance of district heating distributors according to months and companies in 2024 (in kWh)

ESM Distribucija na toplina	January	February	March	April	October	November	December	Total
Entry	118,716,700	80,033,900	62,343,100	24,122,800	21,959,549	93,788,908	117,554,992	**518,519,949**
Exit	106,477,265	71,824,642	53,658,963	19,892,043	17,147,837	84,092,704	106,948,193	**460,041,647**
Realized losses	10.31%	10.26%	13.93%	17.54%	21.91%	10.34%	9.02%	**11.28%**
ESM-Energetika	**January**	**February**	**March**	**April**	**October**	**November**	**December**	**Total**
Entry (calculation)	10,137,906	6,194,318	5,247,857	1,989,107	2,125,690	7,964,123	9,481,924	**43,140,925**
Exit (calculation)	8,921,357	5,451,000	4,618,114	1,750,414	1,870,607	7,008,428	8,344,093	**37,964,014**
Losses	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	**12.00%**
ENERGI EKOLINK	**January**	**February**	**March**	**April**	**October**	**November**	**December**	**Total**
Entry	1,774,000	1,302,000	994,000	450,000	386,000	1,525,000	1,886,000	**8,317,000**
Exit	1,333,508	966,641	708,000	301,234	215,996	1,184,864	1,608,317	**6,398,423**
Realized losses	24.83%	25.76%	28.77%	32.9%	44.0%	22.3%	14.7%	**24.03%**

Table 4.4 reviews the overtaken and delivered quantities of district heating by distributors of district heating, as well as the realization of losses in 2024, thereof. In accordance with the Rulebook on District Heating Price Regulation, the Energy Regulatory Commission approves up to 12 % of losses of the systems of district heating distribution.

In line with the GIS recordings of ESM DISTRIBUCIJA NA TOPLINA DOOEL, the overall length of the distribution network (grid), including the length of connection points of facilities, as by 31 December 2024 was 255.4 km. The length of the distribution network (grid) of the other two distributors, until 31 December 2024, is also enclosed in Table 4.5.

Table 4.5 Length of the distribution network (in km)

Distributer	Length of distributive network (km)
ESM Distribucija na toplina	255.4
ESM-Energetika	13.2
ENERGI EKOLINK	10.3
Total	**278.9**

4.3 DISTRICT HEATING SUPPLY

District heating suppliers are as follows: Company for district heating supply ESM SNABDUVANJE SO TOPLINA DOOEL Skopje, ESM Subsidiary Energetika and ENERGY ECOLINK JSC Skopje.

Table 4.6 below presents the number of district heating consumers according to category and supplier in December 2024.

Table 4.6 Number of district heating consumers according to category and supplier (December 2024)

Supplier	Households	Other	Total
ESM Snabduvanje so toplina	62,002	993	63,097
ESM-Energetika	2,067	33	2,100
ENERGI EKOLINK	485	16	501
Total	**64,554**	**1,042**	**65,596**

The largest number of district heating consumers, or 63,097 consumers, as by the end of December 2024, received supply ESM SNABDUVANJE SO TOPLINA DOOEL Skopje, which is 96.19% of the overall number of Next is the supplier JSC ESM Skopje, Energetika subsidiary, providing supply to 2,100 consumers, and ENERGY ECOLINK JSC Skopje has the lowest number of consumers, 501.

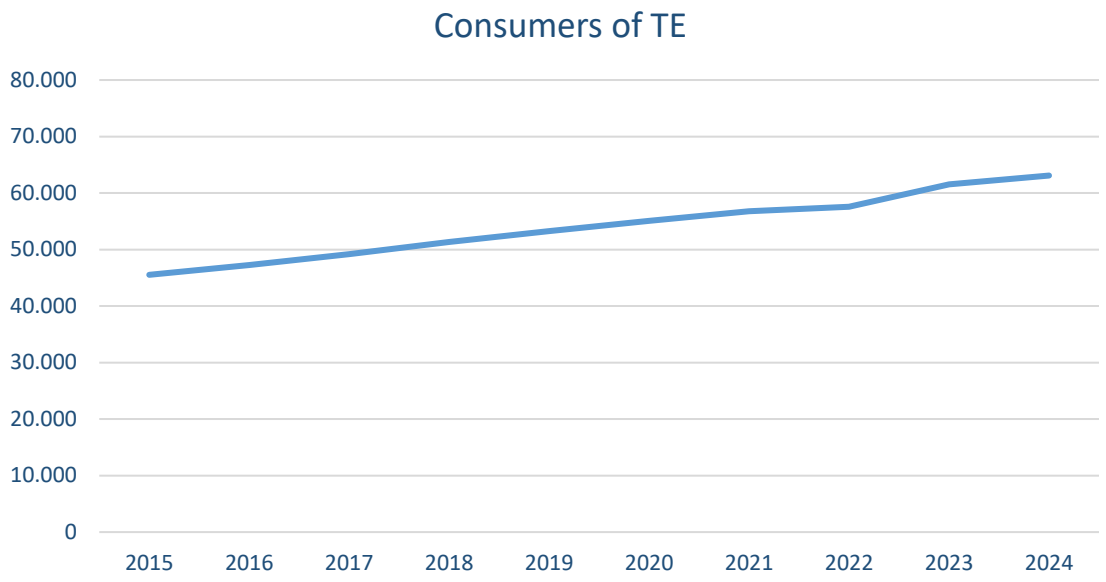


Chart 4.3 District heating consumers for the period between 2015-2025 for the system of ESM Snabduvanje so toplina

The largest number of consumers belong to the category of households, but considering that these are small-sized consumers, a significant part of the district heating consumption is by the categories of other consumers (Chart 4.4 and Table 4.6).

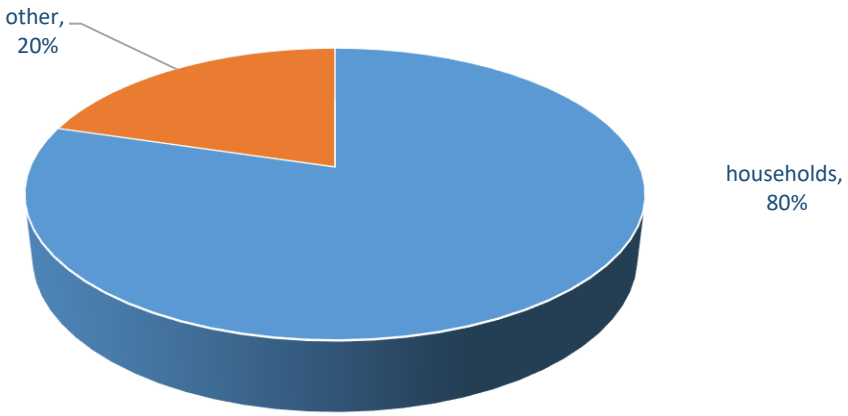


Chart 4.4 Share of delivered quantities of district heating, according to categories of consumers, in 2024

Households have a share of 80% in the delivered district heating, while other consumers have a share of 20%.

Table 4.7 Delivered district heating according to category and supplier in kWh

Supplier	Households	Other	Total
ESM Snabduvanje so toplina	365,167,196	94,874,452	**460,041,647**
ESM-Energetika	33,028,692	4,935,322	**37,964,014**
ENERGI EKOLINK	3,593,476	2,804,947	**6,398,423**
Total	**401,789,364**	**102,614,720**	**504,404,084**

Shares of suppliers in the overall of the delivered district heating, is presented in the Charts 4.4 and 4.5.

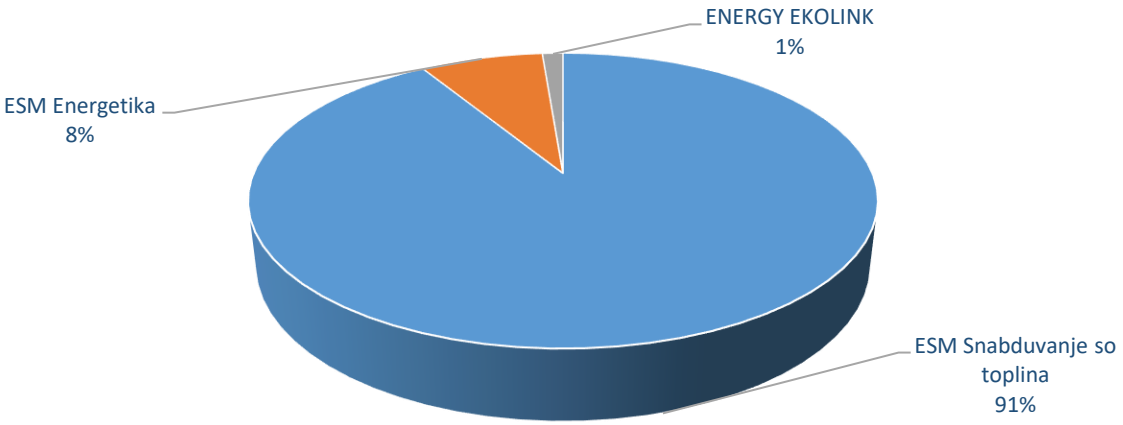


Chart 4.5 Share of suppliers in total delivered district heating in 2024

Chart 4.5 reveals that ESM SNABDUVANJE SO TOPLINA DOOEL Skopje has the largest share of 91 % in the overall delivered quantities of district heating. Next is the system of JSC ESM Skopje, Energetika subsidiary with a share of 8%, and as last is the ENERGY ECOLINK JSC with a share of 1 % in the overall delivered quantities of district heating.

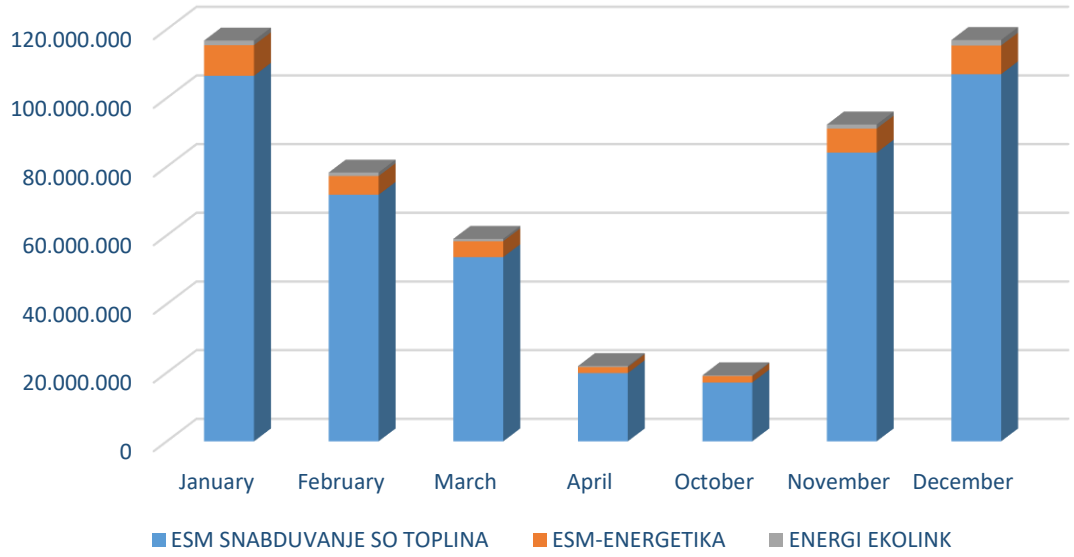


Chart 4.6 Delivered district heating, according to months and supplier, in 2024 (in kWh)

In line with the largest produced district heating is the largest delivery of district heating in the months of January, February, and December, when outside temperatures are at the lowest (Chart 4.6).

The delivered quantities of district heating in the period from 2015–2024, according to supplier, are presented in Chart 4.7.

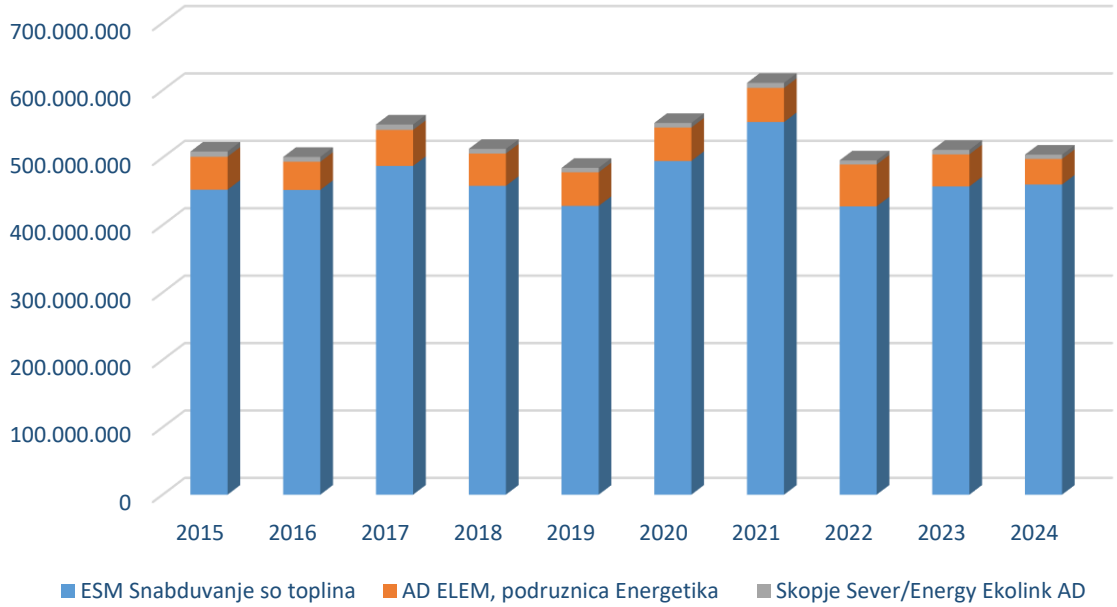


Chart 4.7 Delivered district heating according to supplier in kWh for the period 2015-2024

4.3.1 DISTRICT HEATING PRICES**Regular price change in July 2024**

Pursuant to the Rulebook for setting prices for district heating and system services, ESM PROIZVODSTVO NA TOPLINA DOOEL Skopje, ESM DISTRIBUCIJA NA TOPLINA DOOEL Skopje and ESM SNABDUVANJE SO TOPLINA DOOEL Skopje submitted applications for maximum revenue and price to the Energy Regulation Commission. Additionally, in accordance with the Rulebook, applications were also submitted by ENERGY ECOLINK JSC Skopje and JSC ESM Skopje – subsidiary Energetika.

On 30 July 2024, the Energy Regulatory Commission adopted decisions for setting the maximum regulated revenue and tariffs upon submitted applications by the license bearers and performers of activities production, distribution and supply of district heating.

The data for the tariffs for district heating and engaged district heating capacity for individual suppliers are provided in Table 4.8.

Table 4.8 Tariffs on district heating by suppliers (30-07-24)

Supplier	Households		Other	
	MKD/kW/ann	mkd./ kWh	MKD/kW/ann	mkd./ kWh
ESM Snabduvanje	1,396.2789	2.4292	2,443.4881	4.2511
ESM-Energetika	1,143.4278	2.0206	2,629.8838	4.6475
ENERGI EKOLINK	1,213.7981	2.8464	2,427.5962	5.6929

During December 2024, due to the increased procurement prices of natural gas, the license bearers and performers of activities submitted applications for change of the approved regulated maximum revenue and tariffs for the season 2024/2025.

Taking into consideration the current prices of natural gas and the futures on the world markets, the Energy Regulatory Commission adopted decision for increase of the tariffs for about 5% for ESM Snabduvanje and for Energy Ecolink on 31 January 2025, whereas for ESM Subsidiary Energetika made a decision on 28 February 2025.

The data for the amended tariffs for district heating and engaged district heating capacity for individual suppliers are provided in Table 4.9.

Table 4.9 Tariffs for district heating by supplier (Jan/Feb 2025)

Supplier	Households		Other	
	MKD/kW/ann	mkd./ kWh	MKD/kW/ann	mkd./ kWh
ESM Snabduvanje	1,469.7757	2.5486	2,572.1075	4.4600
ESM-Energetika	1,200.4837	2.1268	2,761.1126	4.8916
ENERGI EKOLINK	1,218.7304	3.0448	2,437.4608	6.0895

To compare the annual heat energy fee and its change among existing heat energy suppliers, a model of a standard apartment with a heating area of 60 m2, an average annual heat energy consumption of 7,000 kWh and an engaged power of 6.0 kW is used as an example (Table 4.10).

Table 4.10 Review of the average fee for district heating for households for 2022, 2023, 2024

Supplier	Aug. 2022 [MKD]	Aug. 2023 [MKD]	Nov. 2023 [MKD]	Feb. 2024 [MKD]	Aug. 2024 [MKD]	Feb. 2025 [MKD]	Fev. 25/ Aug.24
ESM Snabduvanje	29,381	29,381	30,706	30,706	25,382	26,659	5.03%
ESM-Energetika	47,331	47,331	47,277	41,636	21,005	22,091	5.17%
ENERGI EKOLINK	51,965	51,965	34,820	32,869	27,208	28,626	5.21%

The historic data with regards to the average annual fee for district heating for ESM Snabduvanje so toplina as the largest supplier are presented in Chart 4.8.

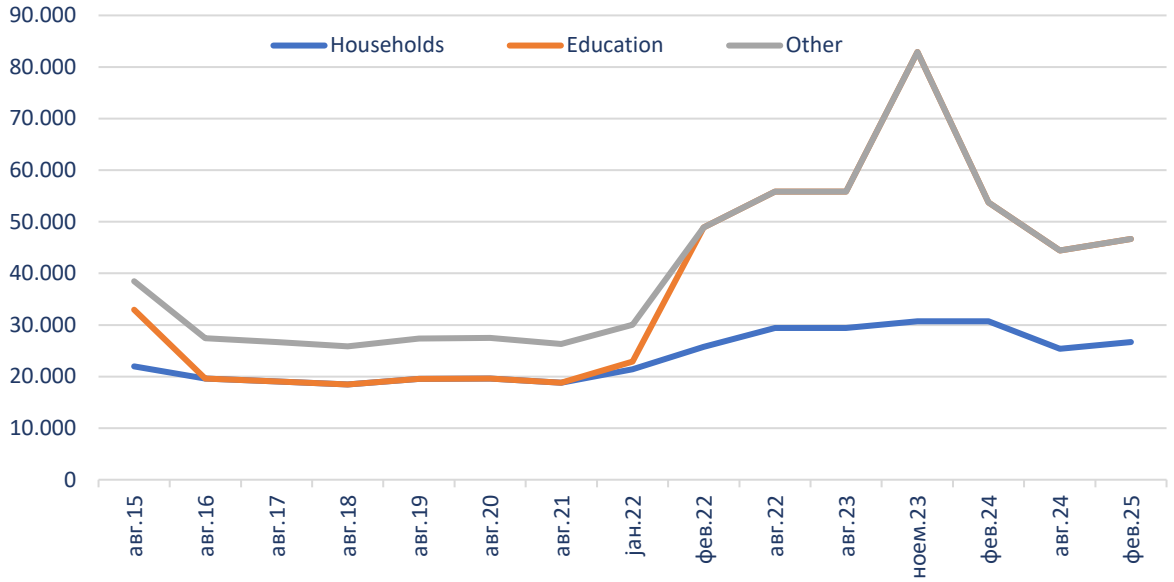


Chart 4.8 Change of district heating fees for the period between 2013- 2024 for the system of ESM Snabduvanje so toplina

On 11 January 2024 the Energy Regulatory Commission adopted a Decision for approval of the Rulebook for defining the quality of delivered district heating for ESM Snabduvanje so toplina DOOEL Skopje. In addition to this, on 22 July 2024 it adopted a Rulebook amending the Rulebook for setting prices for district heating and system services ("Official Gazette of the Republic of North Macedonia" No. 153/24) which made amendments with regard to the minimum required difference between the regulated price for district heating of the regulated producer and the price for the producers of district heating (for cogeneration plants).

4.4 DEVELOPMENT AND INVESTMENT PLANS IN THE DISTRICT HEATING SYSTEMS

The aim of the Development and Investment Plans is to provide safe and continuous production, distribution, and supply of district heating, as well as to increase efficiency of the systems and of the personnel.

The realization of the Development and Investment Plans shall lead to a reduction of costs for functioning of the systems of district heating production and distribution.

The development plans aim to increase the safety of operation of district heating production and distribution systems, monitoring, and remote control of operating parameters.

4.4.1 COMPANY FOR DISTRICT HEATING PRODUCTION ESM PROIZVODSTVO NA TOPLINA DOOEL SKOPJE

In 2024 pursuant to the obligations of the Law on Energy, the Company has fully completed all activities for safe, continuous and quality performance of energy activity. Of the planned activities, the reconstruction of the existing lightning has commenced and the procedure for replacement of the gas rings in the existing boiler burners, whereas the other planned activities are transferred for 2025, when the following investments are planned:

- Completing the reconstruction of the existing lightning;
- Completion of the replacement of the existing boiler burners with Low NOx burners and replacement of the gas rings in the existing boiler burners, aiming to comply with the National Plan for Reduction of Emissions, and
- Purchase and installation of a continuous monitoring system for measuring the emission into the air in the two heating plants, with the aim of meeting the conditions of Law on Environment and the conditions given in A – permits for complying with the operational plan for TO East and TO West during the operation with alternative fuel,
- Gradual replacement of high-voltage electric motors due to their obsolescence;
- Construction of photovoltaic power plant in TO Istok for production of electricity;
- Reconstruction of 6kV power plants for increase of safety and security;
- Replacement of smoke channels, circulation pumps in TO Istok, pipes in the boiler furnaces in TO East and TO West;
- Replacement of the fire detection system in the management building of TO Istok.

The completion of the realization of these investments would increase the safety and reliability of the system, would improve the environmental protection and would meet the environmental standards for hazardous matters emissions in air and soil.

4.4.2 COMPANY FOR DISTRICT HEATING DISTRIBUTION ESM DISTRIBUCIJA NA TOPLINA DOOEL SKOPJE

The maintenance and continuous development of the distribution system is one of the main tasks of ESM DISTRIBUTION OF HEAT DOOEL Skopje, which arises from the obligations specified in the license for performing energy activities. In doing so, through the obligation for investment maintenance and its expansion, new value is added through the construction of new and reconstruction of existing heating pipes.

ESM DISTRIBUCIJA NA TOPLINA DOOEL Skopje in 2025 plans to develop the distributive system in the following areas:

- Ongoing optimization of the distribution system through integration of the distribution network to meet the criteria for efficient central heating, in line with the EU directive on energy efficiency and the Law on Energy Efficiency;

- Expansion of the capacity of the current network and construction of new hot water pipes in line with the development of the city and adoption of new detailed urban plans;
- Loss reduction in the process of district heating distribution.

The strategic goal of the Company is to continue with the implementation and Annual Report on operations of the ERC in 2024 development of the SCADA system, and in the next period a complete replacement of the

existing monitoring equipment is planned.

The Plan for Expanding the Distribution Network for 2025 foresees:

- Construction of a new secondary line on Eseninova Str.,
- Construction of hot water pipes on Jurij Gagarin Str. with accompanying secondary hot water pipes (lines);
- Construction of primary hot water pipes (lines) on Pitu Guli Str.,
- Construction of secondary hot water pipes (lines) in the settlement Aleksandrija;
- Completion of the secondary hot water pipes (lines) on Kozle Str.;
- Other constructions, dislocations and reconstructions of the hot water pipes (lines).

4.4.3 JSC ESM SKOPJE, ENERGETIKA SUBSIDIARY

With the aim of ensuring a safe and continuous district heating supply and increasing the efficiency of the processes, in the period from 2024 to 2029, JSC ESM Skopje, Energetika subsidiary plans to invest in base assets for the production, distribution and supply of district heating with the following planned activities:

- Feasibility study for improving the efficiency of the existing propulsion machinery,
- Expansion of the production capacity by purchasing and installing a new plant,
- Security of existing production plants through timely purchase and implementation of new segments with the aim to increase its functionality,
- Modernization of existing production capacities with the aim of increasing efficiency as well as with the tendency to reduce pollution to a minimum,
- Modernization of the process of preparation and water quality in the distribution system,
- Expansion of the hot water line system,
- Reconstruction of the existing district heating distribution network,
- Modernization - reconstruction and improvement of the energy efficiency of pumps in the main station, and low and high zone,
- Modernization of the metering and processing equipment,
- Modernization of heating sub-stations,
- Modernization and reconstruction of the power distribution system,
- Implementation of the Billing system.

4.4.4 ENERGY ECOLINK JSC SKOPJE

ENERGY ECOLINK JSC SKOPJE in its development plan for the hot water system for 2025 focuses on:

- Preparation of a project solution for reconstruction of a pump station in the plat for providing optimal operation regime;
- Production of an access platform on a chimney for measuring exhaust gas emissions;
- Procurement and installation of electric motor drives, new valves on main heating pipes;
- New systems for detecting fire, gas fumes and explosive gases;
- Controlled access to heating substations;
- Replacement of electric motor valves in heating substations;
- Installation of thermal insulation on heating pipes;
- Procurement and implementation of a billing system.

In the period from 2026 to 2030, the Company plans to invest in fixed assets for the production, distribution and supply of thermal energy with the following planned activities:

- Procurement of a SCADA management system;
- Automation of the process water preparation and control system;
- Exhaust gas monitoring system;
- Reconstruction of heating pipes;
- Billing system and platform for online invoice payment services.

OIL DERIVATIVES

2024

V. OIL DERIVATIVES

According to legal provisions, the market for crude oil, oil derivatives, biofuels and transport fuels in the Republic of North Macedonia is carried out through the import and export of crude oil and oil products, transport of crude oil through a product pipeline/oil pipeline, processing of crude oil, production of oil products, production of biofuel, as well as distribution and sale of oil products.

The reporting year will be remembered for the many challenges the world has faced at every turn, especially the oil sector, which is at a crossroads between traditional energy sources and increasing pressure for sustainability and environmental standards. Given global economic trends, geopolitical developments and technological advances, the sector is experiencing significant changes that are shaping its future.

Oil prices in 2024 were strongly influenced by Chinese demand and tensions in the Middle East, while American shale producers consolidated and remained cautious in terms of production growth.

Oil prices fell by about 3% in 2024, sliding for the second year in a row, as the recovery in demand after the pandemic stalled, the Chinese economy was slow to recover, and the US and other non-OPEC producers supplied more crude to a well-supplied global market.

Oil prices have had their ups and downs this year, presenting investors with a mix of opportunities and challenges. At the start of the year, prices had been steadily rising, driven by strong demand and concerns about global supply. By March, Brent crude oil had reached just under $88 per barrel, with U.S. West Texas Intermediate (WTI) crude closely following at around $83 per barrel. This rise reflected optimism about the reopening of economies and the recovery of global trade.

In the middle of the year, oil prices fell slightly. With rising U.S. crude inventories and a stronger dollar, prices eased over the summer. Brent was trading at $79 per barrel, while WTI was around $75 per barrel. Despite this, the overall outlook for the second half remained strong as global demand remained resilient.

Towards the end of the year, oil prices rebounded. Support from OPEC+ production cuts and increased consumption during the colder months pushed prices higher. Brent crude oil ended the year in a stable range, providing investors with a sense of stability compared to previous fluctuations.

The trend in crude oil and oil derivatives prices on world stock exchanges was directly reflected in the pricing decisions of the Energy Regulatory Commission.

Numerous countries, including the Republic of North Macedonia, have introduced certain mechanisms for regulating the prices of oil derivatives in order to protect consumers and all participants in the oil and petroleum derivatives market, in order to ensure the smooth functioning of the economy.

In this sense, it is important to emphasize that as of March 2022, the Energy Regulatory Commission has been continuously making decisions to determine retail prices of petroleum derivatives, in accordance with current developments in the oil and petroleum derivatives market. The dynamics of making decisions is closely related to the daily increase or decrease in the stock prices of petroleum derivatives on the London Stock Exchange and/or the increase or decrease in the exchange rate of the US dollar against the denar. This

approach ensures security, stability and predictability in the oil derivatives market, with the sole aim of protecting consumers from large price fluctuations.

Applying this last provision, the Energy Regulatory Commission calculates on a daily basis and determines whether the conditions have been created for making a Decision to determine the highest retail prices for individual petroleum derivatives.

The oil sector will remain at the centre of a complex mix of geopolitical, economic, and environmental factors next year. The impact of international conflicts continues to shape global market conditions, while at the same time there is a visible shift in the perception and role of fossil fuels in the world. Despite the global movement towards a greener and more sustainable future, fossil fuels still play a key role in the energy sector. The oil sector not only remains vital to the global economy but is also at the forefront of the changes that will shape the future of energy.

5.1 OIL SECTOR GENERAL DATAThe energy infrastructure in the oil sector in the Republic of North Macedonia enables the import, export and transportation of crude oil and oil derivatives, the processing of crude oil, the production of biofuels, the distribution, transportation and sale of oil derivatives.

5.1.1 CRUDE OIL PROCESSING AND OIL DERIVATIVES PRODUCTION OKTA Refinery was built in 1980 and commenced operations in 1982. The Refinery is designed as a hydro skimming refinery with a projected capacity of 2,5 million tons annually, i.e., with 5480 bbl / day. The maximum capacity of 1,36 million tons was reached in 1988. The technology structure refers to numerous processing plants, such as atmospheric distillation, hydrodesulphurization of primary petroleum, catalytic reforming, high-temperature, isomerization, hydrodesulphurization of kerosene, hydrodesulphurization of mid-distillates, and recuperation of liquefied petroleum gas.

As of 1999, OKTA Refinery is a Joint Stock Company, with a private majority share package by the strategic investor EL.P.ET Balkanika, the Hellenic Republic. OKTA Oil Refinery JSC Skopje has the capacity to produce unleaded petrol with 95 octanes – Euro V, unleaded gasoline with 98 octanes – Euro V, diesel fuel with 10 ppm Sulphur – Euro V, jet-engine fuel – JET A-1, liquefied petroleum gas (LPG) – a mixture of propane - butane gas with commercial butane. With regards to heating oils, the following is comprised: mazut (fuel oil) with 2 % Sulfur, and the extra light oil with 1000 ppm Sulphur for the households.

The energy infrastructure in the oil sector in the Republic of North Macedonia, is enclosed in Chart 5.1.

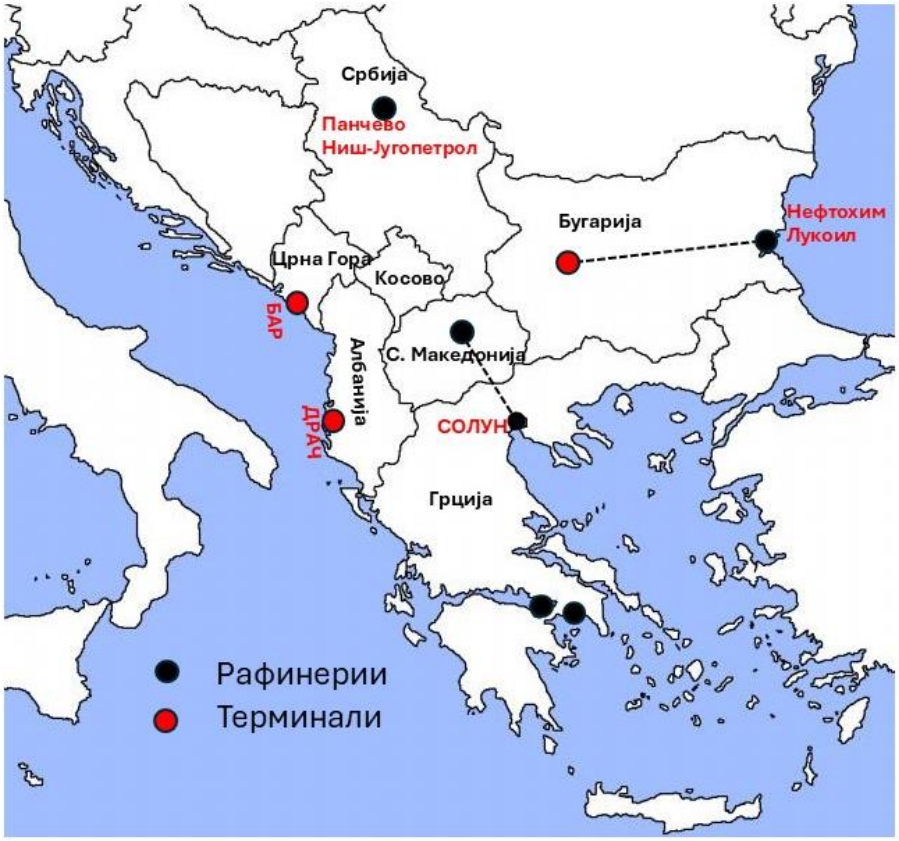


Chart 5.1 The energy infrastructure in the oil sector in the Republic of North Macedonia

5.1.2 TRANSPORTATION OF CRUDE OIL THROUGH OIL PIPELINE

In 2002, the Thessaloniki – Skopje oil pipeline commenced its operations, and as of 9 November 2023, it became a product line for transport of diesel (MKS EN 590). with a length The pipeline is with a length of approximately 213.5 km, 16-inch NPS, with a transport capacity of 2.5 million tons of oil on annual level. The transportation of crude oil starts from the Terminal HELP.PE.-TIC (Hellenic Petroleum, Industry Complex – Thessaloniki) to the Terminal OKTA. The route of the oil pipeline is continuant between the terminals of the HELP.PE.-TIC and OKTA with 15 block ventilation stations (three located in the Republic of Greece, and 12 located in the Republic of North Macedonia) in providing separate oil pipeline sections.

The control and monitoring of the operations by the oil pipeline is organized through the SCADA System. The oil pipeline is managed by the Joint Macedonian – Greek Enterprise VARDAX, with Headquarters in Thessaloniki, and an Office in Skopje.

5.1.3 BIOFUELS PRODUCTION

The Refinery of Biofuel production is in ownership by Makpetrol JSC Skopje. The Refinery commenced its production in 2007, and the capacity is 30 thousand tons on annual

level. To produce Biodiesel Fuel, the Refinery exploits unrefined oil from rapeseed, purchased by import.

5.1.4 RETAIL NETWORK

There are approximately 389 gas stations in the Republic of North Macedonia. Even though the ownership structure in the retail sector has changed, Makpetrol JSC Skopje is the owner of numerous gas stations, i.e., with 127 gas stations. Next is Lukoil Makedonija DOOEL Skopje with 40 gas stations, the OKTA brand with 27 gas stations, while the remaining of approximately 195 gas stations are in private ownership by other domestic companies.

Some companies that own gas stations, along with the main activity for fuel sale to their gas stations, also appear as wholesale traders, i.e., part of the purchased liquid fuels is directly sold to end consumers.

5.1.5 STORAGE CAPACITIES

The overall capacity of oil and oil products reservoirs in the Republic of North Macedonia is approximately of 543,500 m3. The reservoirs capacities in the Republic of Macedonia are sufficient for 90 days of an ongoing average consumption of each type of oil product.

OKTA Oil Refinery Skopje, Makpetrol JSC Skopje, Lukoil Makedonija DOOEL Skopje, the Supertrejd Skopje, State Stock Reservoirs of the Republic of North Macedonia, and other small-size private and state stock companies, possess their own reservoirs storage facilities, and they all compose the reservoirs capacities in the Republic of North Macedonia.

The formation, storage, restocking and the use of the mandatory stocks of oil and oil derivatives are regulated in accordance with the Law on Mandatory Reserves of Oil and Oil Products, and by the Directives of the European Union.

5.2 OIL AND OIL DERIVATIVES MARKET STATUS

The Oil and Oil Derivatives Market in the Republic of Macedonia, along with the regulation prescribed by the Law on Energy*, is also regulated by the laws further listed: the Law on Trade, the Law on Competition Protection, the Law on Customs, the Law on Value Added Tax (VAT), the Law on Excise, and the Law on Market Inspection. Besides the mentioned laws, the Oil and Oil Derivatives Market, also underlines regulation with the Rulebook on Liquid Fuels Quality, the technical regulations (storage and transportation of oil derivatives, standards, etc.), as well with the ratified international agreements: The Stabilization and Association Agreement with the European Union, the Energy Charter Treaty, and the Treaty establishing the Energy Community. In addition, a great influence on the relations within this market is the accession of our country to the World Trade Organization.

5.2.1 MARKET PARTICIPANTS

Pursuant to the Law on Energy*, activities in the field of crude oil, oil derivatives, biofuels, and transportation fuels, shall refer to:

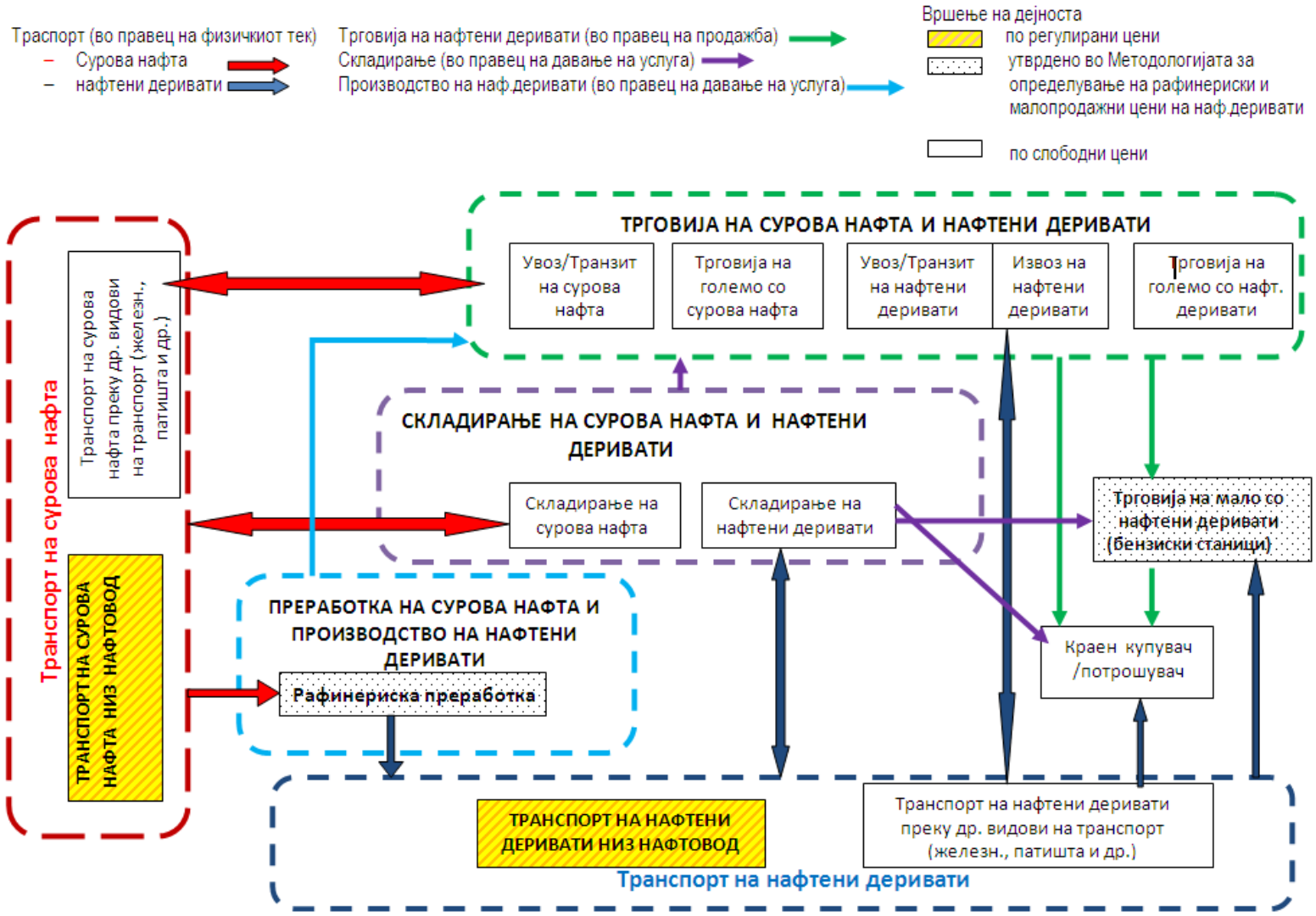
- Crude oil processing and oil derivatives production;
- Production of fuels designated for transportation, with mixture of fossil fuels and biofuels;
- Transportation of crude oil through oil pipelines;
- Transport of oil derivatives via product lines;
- Wholesale trade of crude oil, oil derivatives, biofuels and transportation fuels.

The above-mentioned activities are subject to performance by domestic and / or foreign entities under issued licenses by the Energy Regulatory Commission.

This sector includes the import and export of oil and oil derivatives, biofuels and transport fuels, the transportation of crude oil through oil pipeline, the crude oil processing, biofuel production, oil products distribution and sale.

Relations between participants in the oil and oil derivatives market are displayed in Chart 5.2.

Chart *5.2*



Interrelations of participants on Oil and Oil Derivatives Market in the country

5.2.2 PRODUCTION, PURCHASE, AND SALE OF OIL DERIVATIVES

In the Republic of North Macedonia, the Crude Oil and Oil Derivatives Market, i.e., the supply and sale thereof, is monitored by the Energy Regulatory Commission on regular basis, through monthly and annual reports submitted by the licensed entities to the Energy Regulatory Commission, in accordance with the issued licenses.

The oil and oil derivatives market comprises numerous participants, i.e., performers of energy activity, and there is a balance in the offer and demand, despite the dominant role by some participants in certain segments of the market.

In 2024, OKTA Oil Refinery JSC Skopje didn't import crude oil in the Republic of North Macedonia, hence there wasn't processing of crude oil and production of oil derivatives in the domestic market. The participation percentage of traders in the total import of oil derivatives in the country in 2024 is displayed in Chart 5.3.

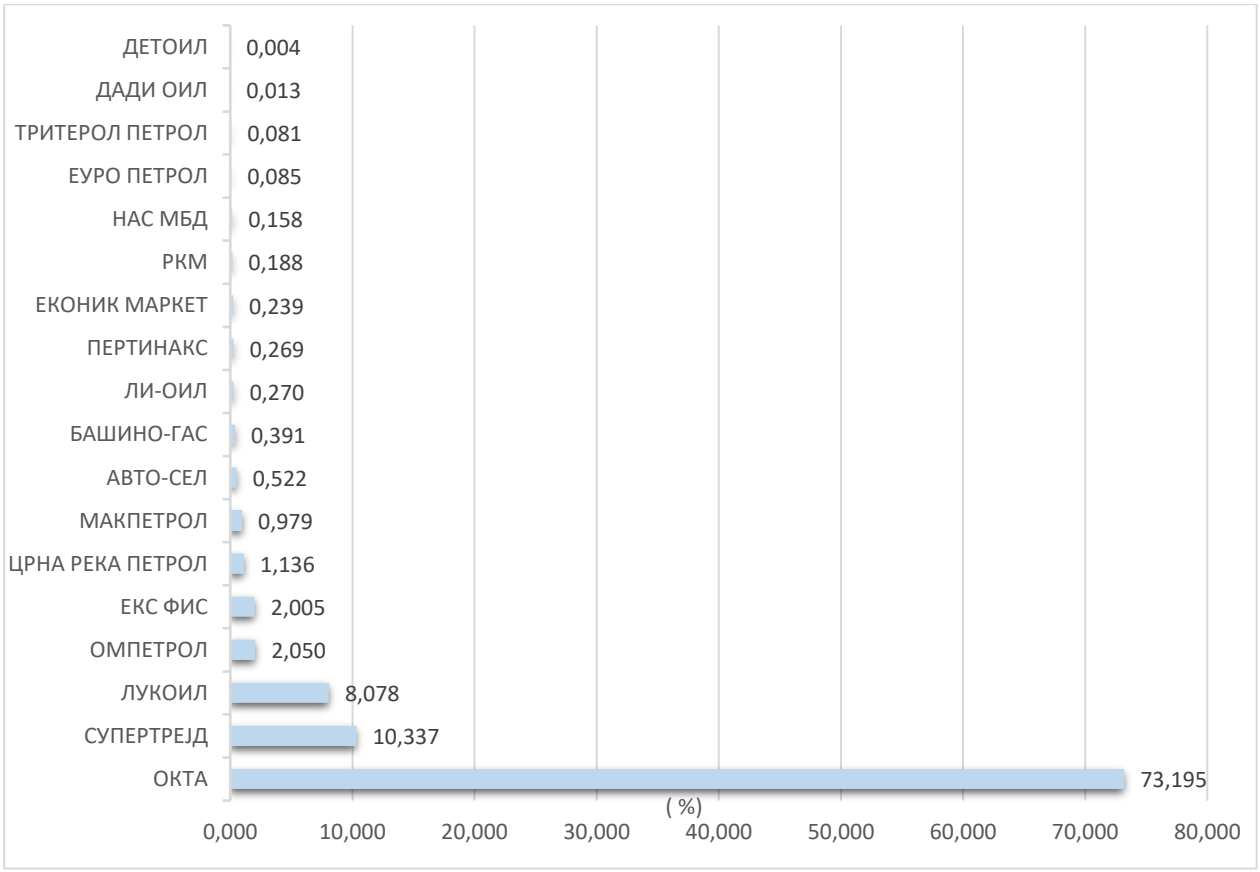


Chart 5.3 Participation percentage of traders in the total import of oil derivatives in the country in 2024

The total imported amounts of petroleum derivatives in the Republic of North Macedonia in 2024 reached 1,313,693 tons, which is by 2.645% less compared to the imported oil derivatives in 2023 (1,349,391 tons). This year, the largest importer was OKTA Oil Refinery JSC, Skopje which has a share of

74,66%, followed by Supetrejd Skopje with 10.337%, Lukoil Makedonija DOOEL Skopje with 8.078%, OM Petrol Skopje with a share of 2.050%, EKS FIS with 2.005%, Crna Reka Petrol with

1,136%, Makpetrol JSC Skopje with 0.979% share and other traders with less than 3% share in the overall import of oil derivatives in 2024.

In 2024, the largest import is on diesel fuel, i.e., 67.66 % of the overall import, followed by the import of gasoline with 13.29%, jet fuel with 7.58 %, mazut (fuel oil) with 5.84 %, propane – butane (LPG) with 4.07%, and extra light fuel (EL-1) with 1.57% (Chart 5.4).

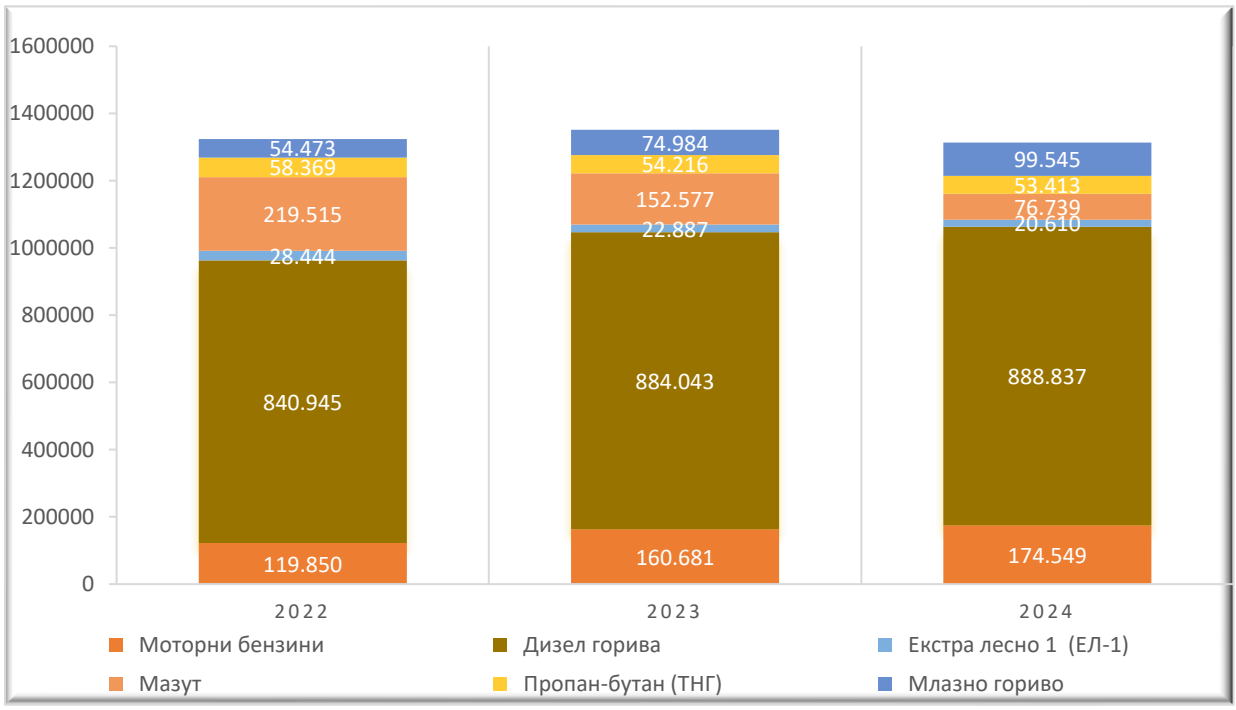


Chart 5.4 Oil derivatives Import in the RN\0 M for 2021, 2022, and 2023 (tons / annually)

Chart 5.4 shows that the import of oil derivatives in 2024 marks a decrease of 2.645% compared to the previous year. There is a significant increase in the import of jet fuel of 32.75%, compared to 2023, there is also an increase in imported quantities of gasoline in 2024 by 8.63% and the import of diesel fuel in 2024 increased by 0.54% compared to the previous year. There is a significant decrease in the import of fuel oil in 2024 of 49.71%, a decrease of 9.95% is observed in extra light fuel (EL-1) and in liquefied petroleum gas (LPG) of 1.48%, compared to 2023.

The import of individual petroleum derivatives in 2024 is shown in Figure 5.5.

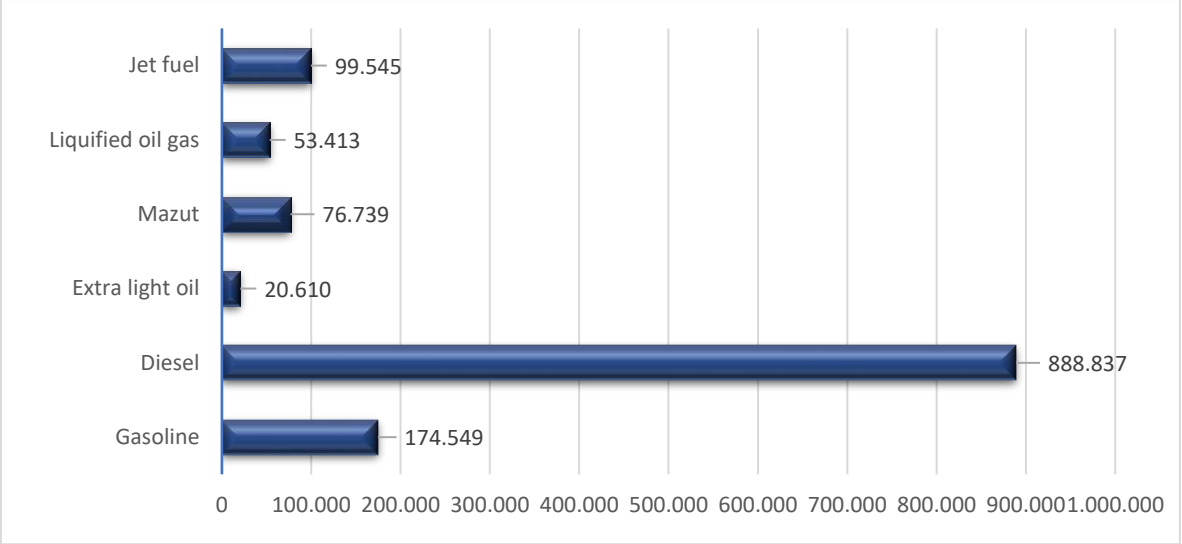


Chart 5.5 Oil derivatives import in 2024 (in tons)

During 2024, wholesalers of crude oil, oil derivatives, biofuels and transport fuels imported oil derivatives into the Republic of North Macedonia from 11 countries (Chart 5.6), with most oil derivatives being imported from neighbouring countries, namely from Greece 85.98%, then from Bulgaria 10.49%, Albania 2.27%, Serbia 0.96%, Montenegro 0.15%, Romania 0.09% and a small percentage of imports from other countries.

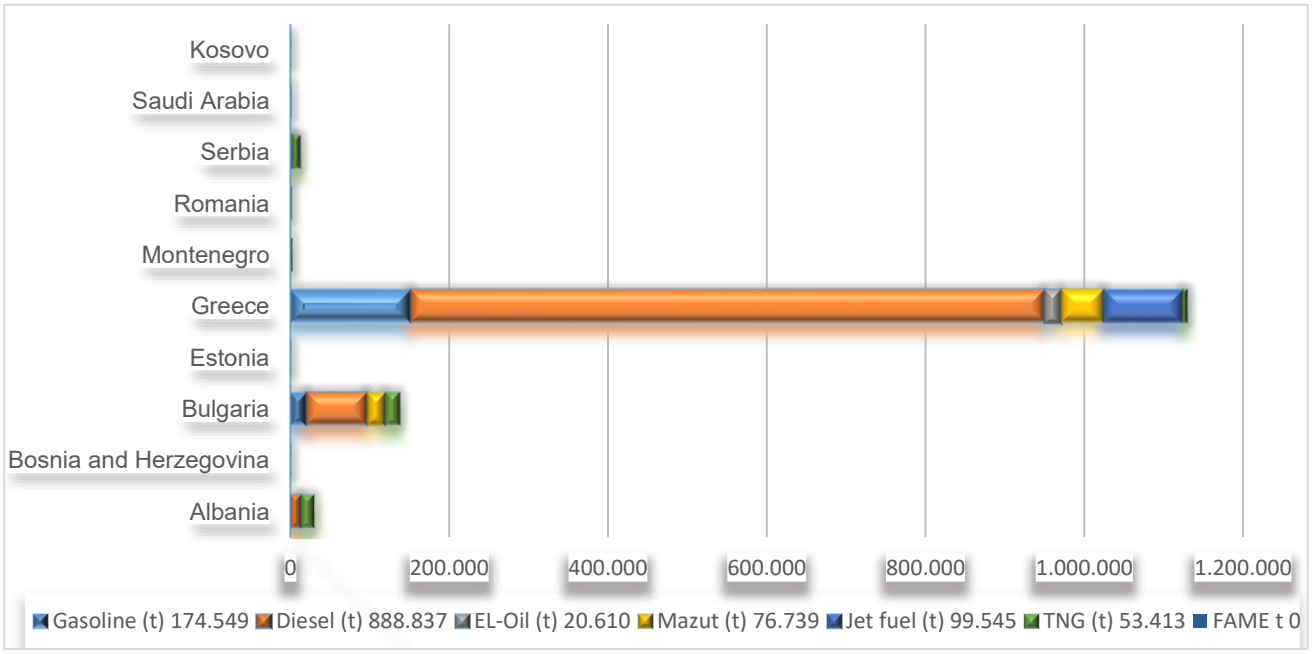


Chart 5.6 Import of certain oil derivatives in 2024 (tons)

The procurement and sale of petroleum derivatives in the Republic of North Macedonia, during 2024, was actively carried out by 18 legal entities licensed for wholesale trade in crude oil, petroleum derivatives, biofuels and transport fuels. Chart 5.7 presents the participation of individual traders in the total procurement of petroleum derivatives in the country in 2024.

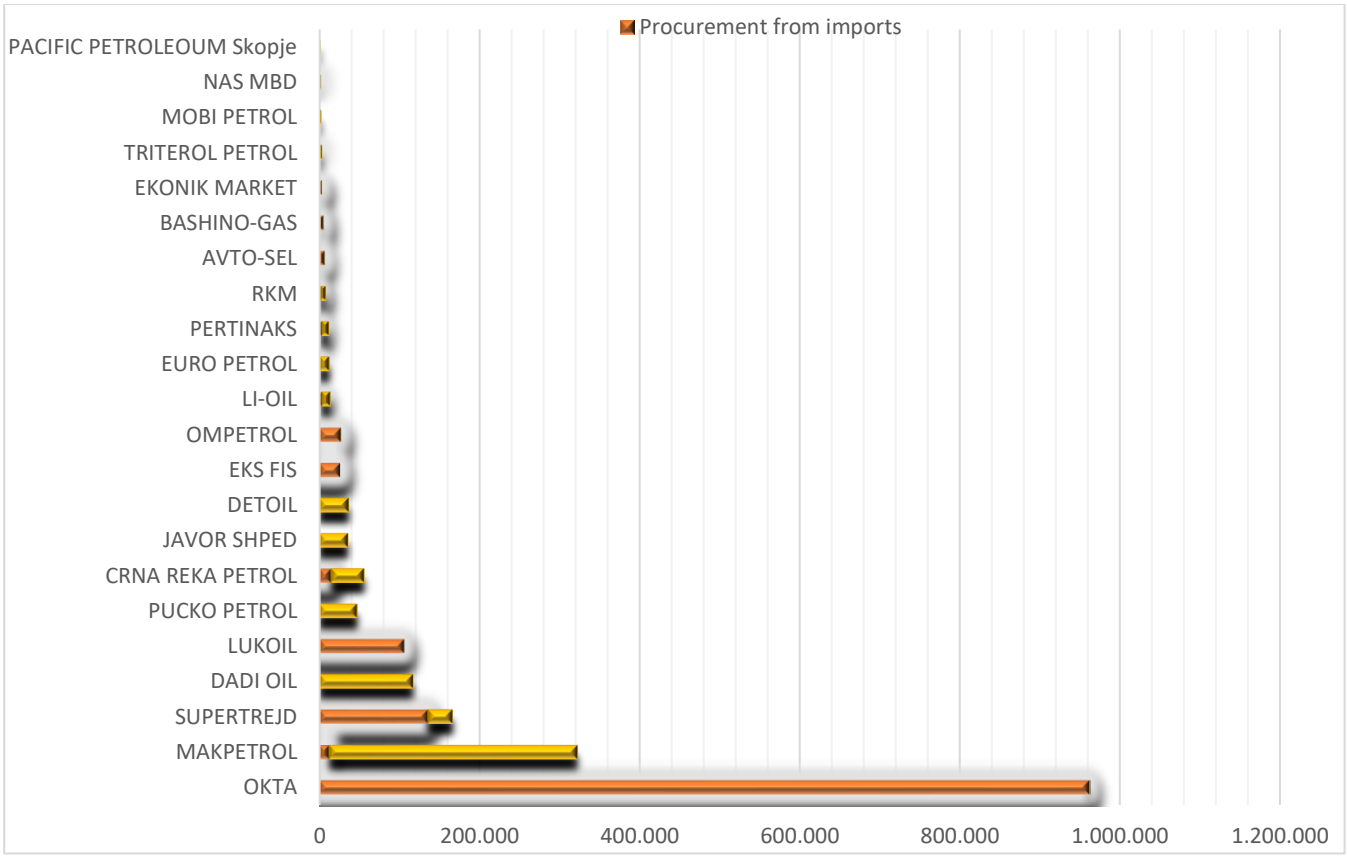


Chart 5.7 Participation of traders in the total procurement of petroleum derivatives in 2024

The export of petroleum derivatives in 2024 amounted to 330,673 tons, and compared to 2023 (346,463 tons) it decreased by 4.56%. The largest share in the export of petroleum derivatives in 2024 is held by OKTA Oil Refinery AD Skopje with 88.34%, EKS FIS with 7.98%, Makpetrol AD Skopje with 2.10%, Supertrade DOOEL Skopje with 0.73% and the remaining export of 0.85% is realized by other traders.

In 2024, diesel fuel was the most exported, i.e. 48.32% of total exports, followed by jet fuel with 29.90%, motor gasoline with 18.50% and mazut with 3.28% (Chart 5.8).

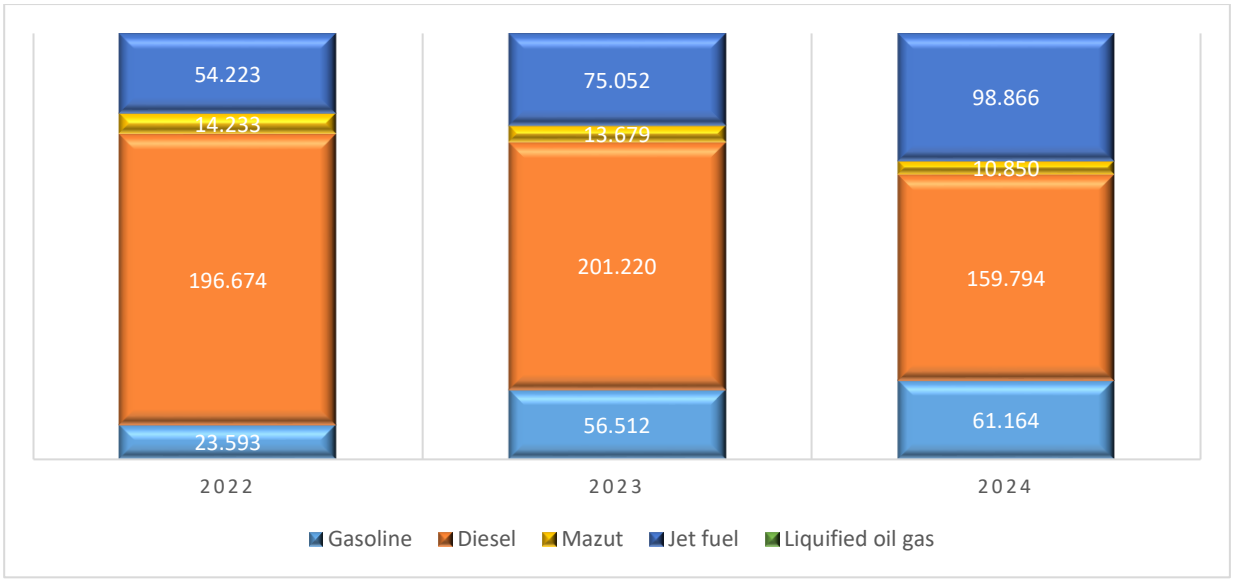


Chart 5.8 Oil derivatives export in the Republic of North Macedonia for 2022, 2023, and 2024 (tons / annually)

Chart 5.8 shows that the export of oil derivatives in 2024 marks a decrease compared to the previous year. In jet fuel, there is a notable increase in exported quantities by 29.90% compared to 2023, there is also an increase in gasoline exports in 2024, compared to 2023, which is 8.23%. There is a significant decline in diesel fuel exports in 2024, and it decreased by 20.58% compared to the previous year, as well as a decrease of 20.68% in fuel oil exports in 2024.

Sales of oil derivatives on the domestic market in 2022-2024 is presented on Chart 5.9, and this sale in 2024 amounted to 964,886 tons, which is a decrease of 4.21% compared to sales of oil derivatives in 2023 (1,007,271 t)

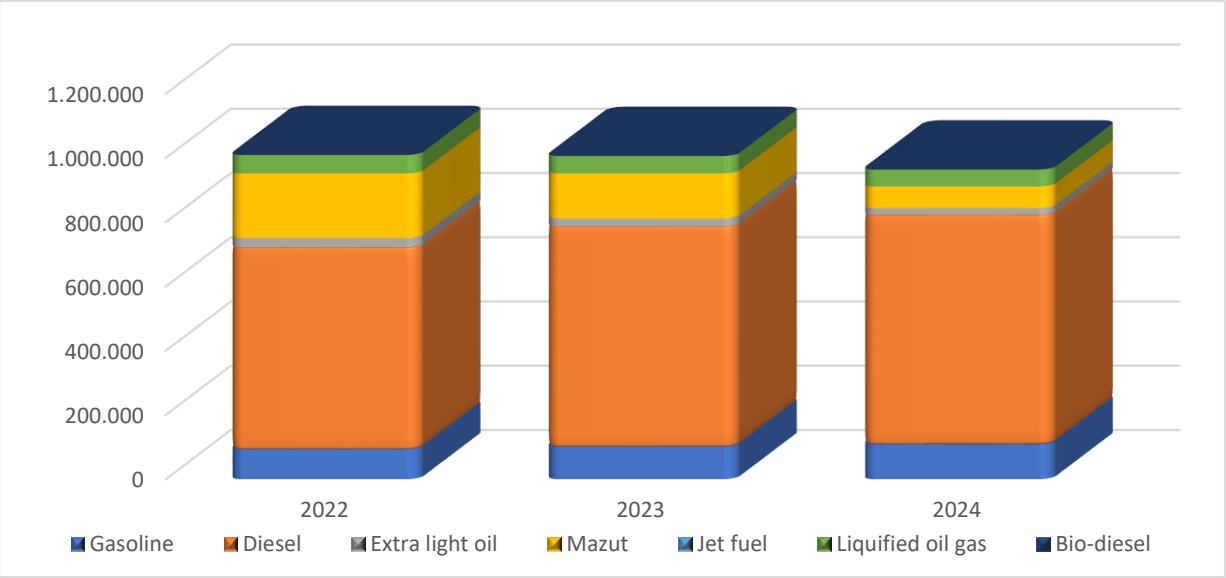


Chart 5.9 Sales of petroleum derivatives on the domestic market in 2022, 2023 and 2024 (tons/year)

In 2024, there is an increase in consumption of jet fuel by 58.95%, gasoline by 7.83% and diesel by 4.09%. A decrease in consumption in 2024, compared to the previous year, is observed in fuel oil by 51.80%, in Extra Light Oil (EL-1) by 16.48%, in biodiesel consumption by 5.81% and in liquefied petroleum gas (LPG) by 3.53%.

The share of petroleum derivatives in the total consumption of petroleum derivatives in the Republic of North Macedonia in 2024 is shown in Chart 5.10.

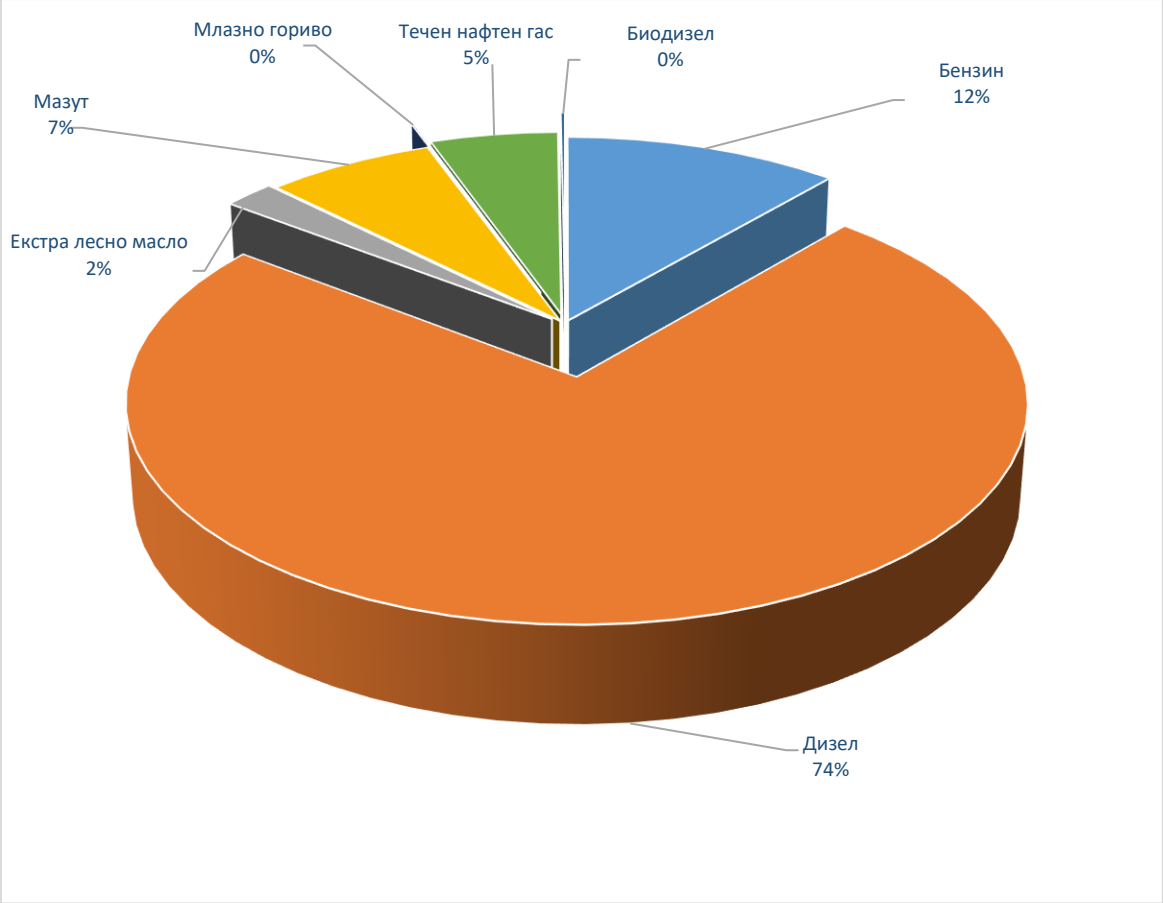


Chart 5.10 Share of oil derivatives in the overall consumption of oil derivatives in the Republic of North Macedonia in 2024

The consumption of petroleum derivatives on the domestic market in 2024 (Chart 5.10) is dominated by diesel fuels with 73.95%, unleaded gasoline with a share of 11.37%, fuel oil with 7.01% and liquefied petroleum gas with 5.29%. This is followed by extra light oil (EL-1) with 2.14%, biofuel with 0.16% and jet fuel with 0.09%.

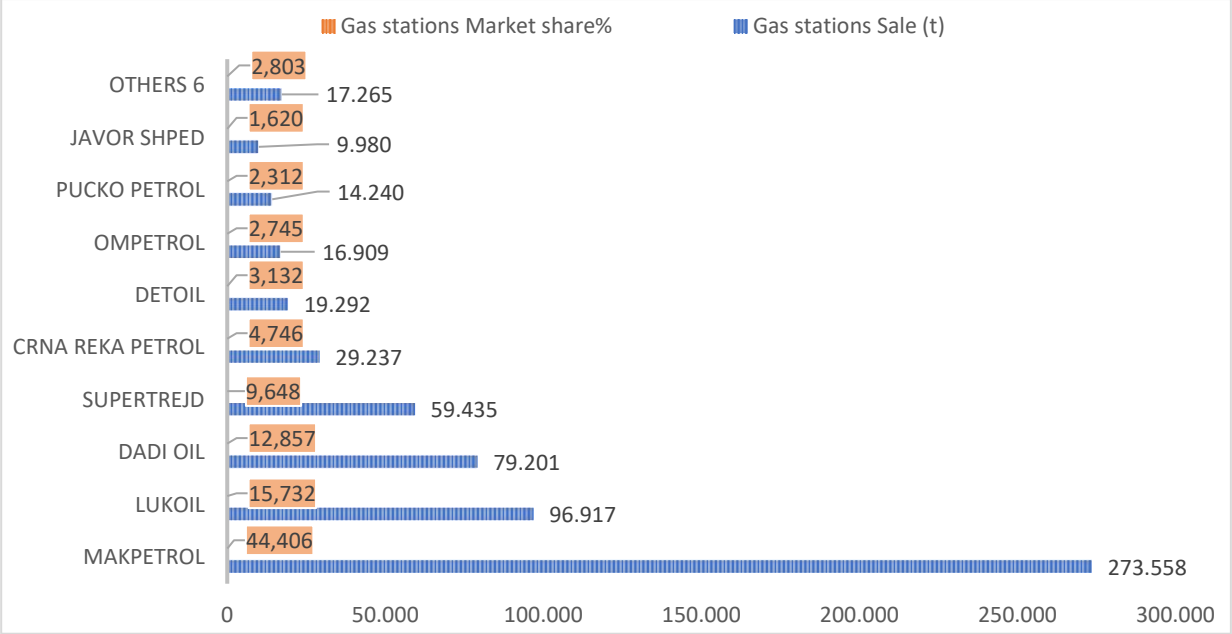


Chart 5.11 Share of traders in the sale of oil derivatives via gas stations in 2024 (in tons and %)

Chart 5.11 provides an overview of the sales of petroleum derivatives through gas stations by wholesalers in 2024. It can be noted that in this segment of the retail market, Makpetrol has a dominant share with a 44.41% market share, followed by Lukoil with 15.73%, Dadi Oil with 12.86%, Supertrade with 9.65%, Crna Reka Petrol with 4.75%, Detoil with 3.13%, Ompetrol with 2.75%, Pucko Petrol with 2.31%, Javor Shped with 1.62%, while the share of all other 6 wholesalers that had sales through gas stations is 2.80%.

The following Chart 5.12 provides an overview of the realized sales of petroleum derivatives to end customers by wholesalers.

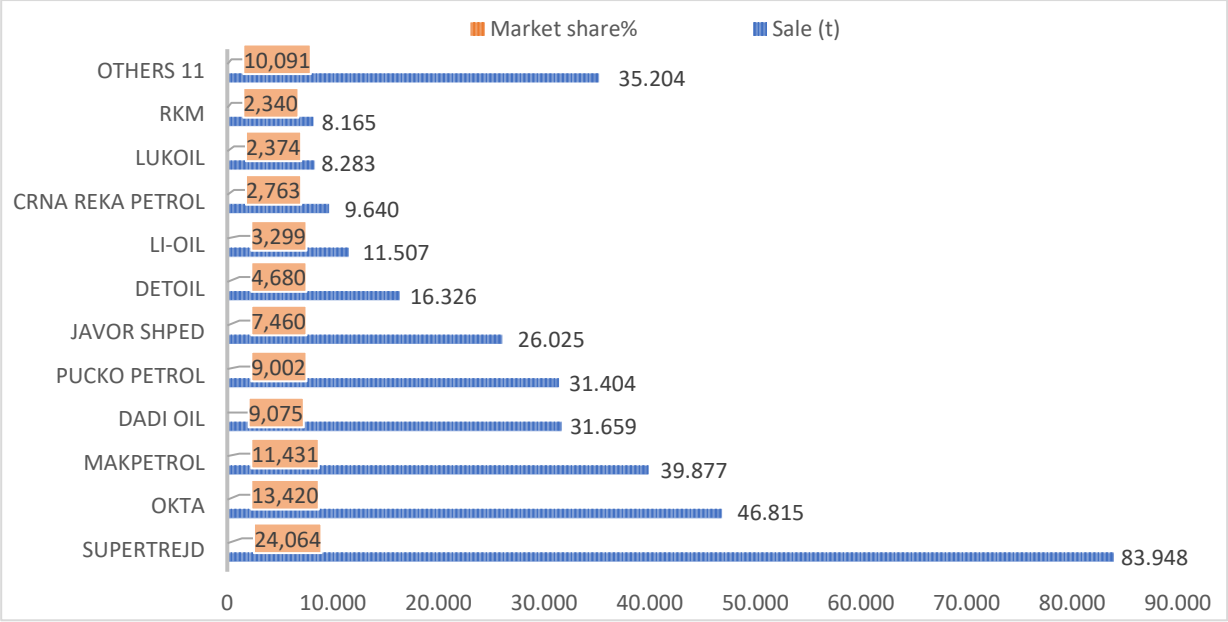


Chart 5.12 Share of wholesalers in sales of petroleum products to end customers in 2024 (in tons and %)

Within this segment of the oil derivatives market, Supertrade has the largest share of 24.06%, followed by Okta with 13.42%, Makpetrol with 11.43%, Dadi Oil with 9.08%, Pucko Petrol with 9.00%, Javor Shped with 7.46%, Detoil with 4.68%, Li-Oil with 3.30%, Crna Reka Petrol with 2.76%, Lukoil with 2.37%, RKM with 2.34%, while the remaining 11 oil derivatives wholesalers have a total share of 10.09%.

The following Chart 5.13 shows the total sales of oil derivatives on the domestic market by traders in 2024 (in tons and %), which includes sales through gas stations and sales to end customers.

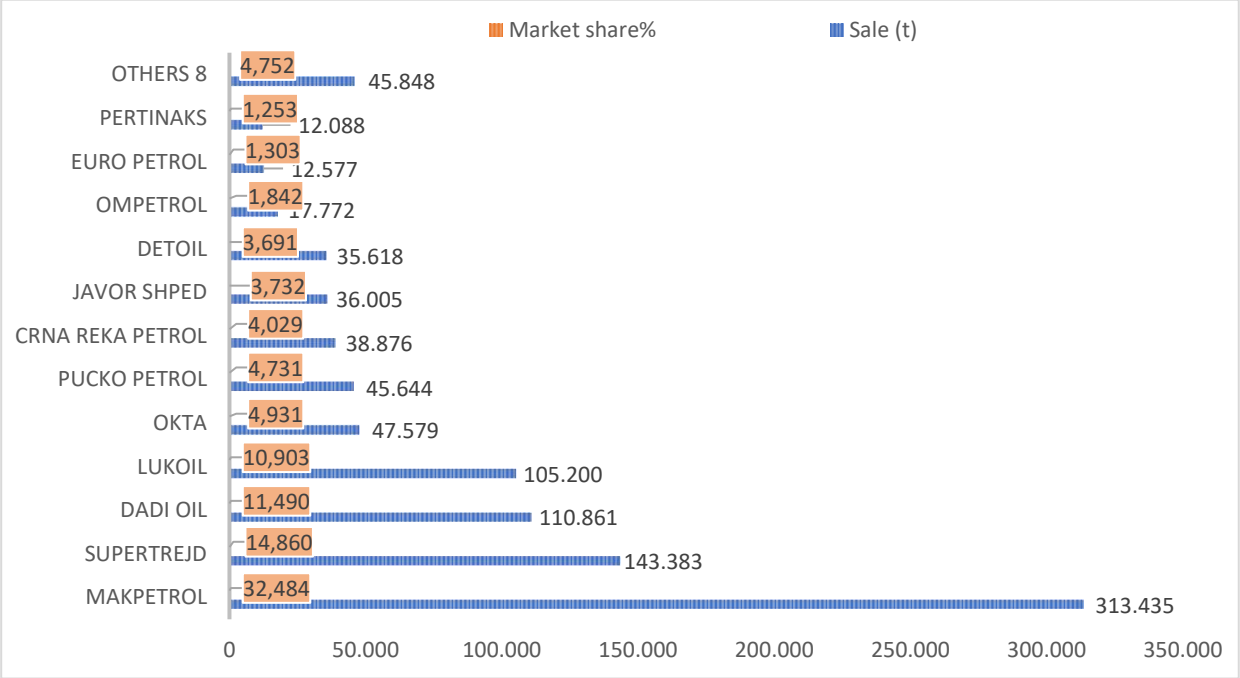


Chart 5.13 Share of traders in the overall sale of oil derivatives in the domestic market 2023 (in tons and %)

According to Chart 5.13, the largest share in sales on the domestic market is held by Makpetrol with 32.48%, followed by Supertrade with 14.86%, Dadi Oil with 11.49%, Lukoil with 10.90%, Okta with 4.93%, Pucko Petrol with 4.73%, Crna Reka Petrol with 4.03%, Javor Shped with 3.73%, Detoil with 3.69%, Ompetrol with 1.84%, Europetrol with 1.30%, Pertinax with 1.25% and the remaining 8 wholesalers with a total share of 4.75%.

Table 5.1 Review of crude oil purchase, as well as purchase and sale of oil derivatives in 2024, in tons

Type of oil and oil derivatives	Status of stock / reserves at the beginning of year	PURCHASE			TOTAL Available	SALE					Status of stock / reserves at the end of year
		in the country OKTA -Refinery Production	IMPORT	TOTAL Purchased (3+4)	(2+5)	in the country Gas stations	in the country End buyers	in the country TOTAL (7+8)	EXPORT	TOTAL sale (9+10)	(6-11)
1	2	3	4	5	6	7	8	9	10	11	12
Crude oil	-	-		-	-	-	-	-	-	-	-
Motor gasoline	5,793	-	174,549	174,549	180,342	94,346	15,386	109,732	61,164	170,895	9,446
Diesel fuels	15,163	-	888,837	888,837	904,000	490,810	222,699	713,509	159,794	873,303	30,697
Extra light 1 (EL-1)	1,239	-	20,610	20,610	21,849	131	20,482	20,613	-	20,613	1,236
Mazut M1-NS	4,472	-	76,739	76,739	81,212		67,614	67,614	10,850	78,464	2,748
Propane-butane (TNG)	1,658	-	53,412	53,412	55,070	29,265	21,794	51,059	-	51,059	4,011
Jet fuel	2,003	-	99,545	99,545	101,547	-	852	852	98,866	99,718	1,830
Biodiesel	362	-			362	1,481	26	1,507	-	1,507	-1,145

5.3 APPROVAL OF PRICES OF CERTAIN OIL DERIVATIVES

In accordance with Article 24 and 28 of the Law on Energy*, on May 23rd, 2019, the Energy Regulatory Commission adopted the Rulebook for Setting Highest Retail Prices of Separate Oil Derivatives and Transport Fuels, published in the Official Gazette of the Republic of North Macedonia'' no. 103/199 (out of force), i.e., the Rulebook for Setting Highest Retail Prices of Separate Oil Derivatives and Transportation Fuels, published in the "Official Gazette of the Republic of North Macedonia", no. 108/20 and 133/20, (hereinafter: Rulebook).

The Rulebook provided application of a new methodology based on real events in the oil and oil derivatives market in the Republic of Macedonia, for the first time in 20 years of application of the Methodology for Setting Highest Prices of Separate Oil Derivatives, defined in Annex D of the Purchase Contract for Shares and Concessions of OKTA Refinery, Skopje.

The Rulebook mirrors the manner of functioning of the market on oil products sale and purchase in our country and abroad by wholesale traders with crude oil, oil derivatives, biofuels, and transport fuels.

The new access provides stability and predictability in the formation of retail prices of oil derivatives and transport fuels, as well as transparency in the procedure for setting retail prices of oil derivatives. In this period of Rulebook application, based on the data received by monitoring market status and functioning, the Energy Regulatory Commission was able to analyse the influence of the market upon the operation of wholesale traders with crude oil and oil derivatives and in accordance with it, it concluded that the defined elements in the Rulebook provide:

- Balance of interests of the performers and of energy activities and of consumers,
- Consumer protection from all kinds of abuse of dominant position in the market and
- Creation of measures for stimulating efficient operation of the performers of energy activities in the market of crude oil and oil derivatives, by compensating their costs and achieving an adequate return on capital.

In accordance with the provisions stipulated in the Rulebook, every seven days highest retail prices shall be established on certain oil derivatives, under individual determination of:

- Highest purchase prices (based on stock exchange prices on oil products published in the Platt's European Marketscan, parity FOB Med),
- Fees on operation through storage and trade margin including transportation costs from storage to gas stations and end consumers,
- Values of specific excises, and other fees established by law and other secondary legislation.

Respecting all above-mentioned parameters, and the existing legal acts in the country which refer to liquid fuels, every seven days the Energy Regulatory Commission establishes prices of separate oil derivatives.

On 8 March 2022, the Energy Regulatory Commission decided to amend the Rulebook for Setting Highest Retail Prices of Separate Oil Derivatives and Transportation Fuels, in a manner that will provide adoption of decisions for setting retail prices in line with current trends in the market of oil and oil derivatives. The change was a result of the geopolitical situation in the past period, which caused a sharp rise in the prices of oil derivatives in the stock markets around the world, and additionally the dollar rate rose. To provide safety and

stability of the oil derivatives market and to protect consumers from high price oscillations, the Energy Regulatory Commission decided to change the Rulebook by introducing a new Article which defines that in terms of the rise or fall of stock-market prices of oil-derivatives and/or of the rate of the USD dollar in relation to the denar, which would additionally cause increase or decrease greater or equal to 2.00 MKD/l for gasoline, diesel or fuel oil, i.e., 0.300 MKD/kg for Mazut, in relation to respective prices set in the last decision for setting highest retail prices of separate oil derivatives and transportation fuels, the Energy Regulatory Commission shall adopt a decision for new retail prices of oil derivatives.

By implementing this final provision, the Energy Regulatory Commission makes calculations daily, and it decides whether conditions are created for adopting a Decision for Setting Highest Retail Prices for Separate Oil Derivatives.

On April 25, 2024, the Energy Regulatory Commission adopted a Decision on determining the escalated density ρand the deescalated density ρ of each oil derivative and fuel for transportation, the amount of the premium fee P, the transportation costs T to a warehouse in the Republic of North Macedonia, and the amount of the fee D for operating costs through a warehouse and trade margin, including transportation costs from the warehouse to gas stations and end consumers. This Decision was made pursuant to Article 5 of the Rulebook for Setting Highest Retail Prices of Separate Oil Derivatives and Transportation Fuels, published in the "Official Gazette of the Republic of North Macedonia", no. 108/20, 133/20, 49/22, 54/22, 64/22 and 125/22), where it is defined that pursuant to the data from the Customs Administration of the Republic of North Macedonia, as well as data obtained from monitoring the conditions and functioning of the market, twice a year the Energy Regulatory Commission adopts a decision to determine the density of each oil derivative and fuel for transport, with the exception of fuel oil M-1, as well as the quantity for the compensation P for the premium including transportation costs to a warehouse in the Republic of North Macedonia and the amount of the compensation D for operating costs through a warehouse and trade margin including transportation costs from a warehouse to gas stations and end consumers. This decision shall be adopted no later than the last Monday in April of the current year, for the period from the last Monday in April to the last Monday in October of the current year and no later than the last Monday in October of the current year, for the period from the last Monday in October of the current year to the last Monday in April of the following year.

With the Decision in question, the values of certain parameters have changed, in accordance with the developments that followed the market for oil and oil derivatives. With the Decision, the values for deescalated densities have changed, which were calculated based on the data received from the Customs Administration of the Republic of North Macedonia, as well as from the density data of individual oil derivatives received by wholesalers of oil and oil derivatives. Also, with the Decision in question, the Energy Regulatory Commission decided to change the values of the parameters related to the cost of transporting fuels within the country, the cost of working through a warehouse, as well as the trade margin, due to the increased growth in the prices of oil derivatives on world stock exchanges, the growth of the dollar exchange rate, the obligation to maintain five days of operational reserves, which represents a significant operating cost, the increased costs from the legal obligation to increase the minimum wage and the introduction of Sunday as a non-working day, as well as the increased costs for verification of measuring instruments, while the values of individual parameters were maintained at the same values adopted by the Decision of October 27, 2023.

On April 25, 2024, the Energy Regulatory Commission adopted a Decision on determining the escalated density ρe and the deescalated density ρd of each oil derivative and fuel for transportation, the amount of the premium fee P, the transportation costs T to a warehouse in the Republic of North Macedonia, and the amount of the fee D for operating costs through a warehouse and trade margin, including transportation costs from the warehouse to gas stations and end consumers. This Decision, just as the Decision 25 April 2024, was made pursuant to Article 5 of the Rulebook for Setting Highest Retail Prices of Separate Oil Derivatives and Transportation Fuels, published in the "Official Gazette of the Republic of North Macedonia", no. 108/20, 133/20, 49/22, 54/22, 64/22 and 125/22). The Decision of October 25, 2024 retains the same values of individual parameters adopted by the Decision of April 25, 2024, and refers to the cost of transporting fuels within the country, the cost of working through a warehouse, as well as the trade margin, except for the parameter of de-escalated densities, which are calculated based on the density data from the quality certificates of individual oil derivatives, obtained by wholesalers of oil and oil derivatives. Also, with the Decision in question, the Energy Regulatory Commission decided to change the values of the parameters related to the premium compensation (P) for each oil derivative and transport fuel, with the exception of fuel oil, as well as a change in the compensation (T) for transport costs to the warehouse for each oil derivative and transport fuel in the Republic of North Macedonia, due to the increased growth in the prices of oil derivatives on world stock exchanges, the growth of the dollar exchange rate, as well as the obligation to maintain five daily operational reserves, which represents a significant operating cost.

Table 5.2 provides the average stock exchange prices of the reference oil derivatives and the average denar/dollar exchange rate in 2024, and Chart 5.14 shows the corresponding diagrams.

Table 5.2 Average stock exchange prices of the reference oil derivatives and the average denar/dollar exchange rate in 2024, and Chart 5.14 shows the corresponding diagrams.

Date	Prem Unl 10ppm	10ppm ULSD	Gasoil 0.1 %	Fuel Oil 1.0 %	MKD/USD (NBM)
02.01.2024	763,700	773,200	762,250	479,850	55,668
09.01.2024	753,350	755,100	745,950	480,900	55,983
15.01.2024	742,900	767,050	764,000	484,950	56,218
22.01.2024	763,200	792,000	781,900	478,700	56,527
29.01.2024	795,450	816,200	802,150	472,900	56,668
02.02.2024	809,800	844,200	822,600	476,300	56,841
05.02.2024	805,550	839,900	813,050	469,100	56,924
12.02.2024	817,750	854,600	801,500	456,950	57,226
15.02.2024	850,700	883,800	822,550	466,850	57,261
16.01.2024	854,150	883,750	823,600	469,250	57,328
19.01.2024	856,200	875,000	817,100	472,800	57,344
2/22/2024	849,100	851,650	803,050	488,000	57,336
2/23/2024	845,600	842,850	797,900	493,700	57,233

2/26/2024	843,750	836,600	795,550	496,650	57,126
3/04/2024	859,400	817,650	790,700	504,650	56,939
3/11/2024	847,350	808,200	785,900	509,950	56,811
3/18/2024	871,850	813,000	790,350	511,550	56,347
3/22/2024	902,900	825,750	805,950	523,350	56,519
3/25/2024	906,200	821,800	800,750	524,250	56,535
4/01/2024	904,200	804,900	780,950	531,600	56,797
4/08/2024	923,950	835,500	818,400	525,000	57,014
4/15/2024	928,900	829,400	823,150	514,200	56,808
4/22/2024	934,550	787,200	783,650	508,350	57,727
4/29/2024	918,850	771,250	769,700	508,650	57,631
5/07/2024	896,450	755,050	749,650	498,950	57,396
5/09/2024	870,100	743,550	739,600	480,950	57,388
5/13/2024	864,900	745,600	740,300	472,950	57,301
5/16/2024	852,100	739,850	731,200	459,300	57,080
5/20/2024	851,050	740,000	730,600	456,850	56,870
5/27/2024	838,350	746,250	734,350	456,100	56,680
6/03/2024	826,050	739,700	722,500	467,100	56,712
6/06/2024	793,900	715,650	697,700	458,900	56,758
6/07/2024	789,700	712,750	694,150	457,200	56,744
6/10/2024	786,750	712,350	692,900	456,300	56,695
6/13/2024	800,400	737,000	717,050	471,700	56,885
6/14/2024	802,100	746,250	726,050	476,700	57,000
6/17/2024	804,700	754,700	734,400	481,850	57,083
6/20/2024	817,900	777,850	754,700	497,050	57,360
6/24/2024	829,650	787,100	761,550	511,650	57,435
6/28/2024	838,450	790,400	764,600	529,500	57,431
7/01/2024	836,850	790,000	764,500	530,400	57,455
7/08/2024	858,950	805,200	773,100	541,950	57,252
7/11/2024	855,400	792,750	754,850	530,550	56,934
7/15/2024	843,300	780,700	742,900	521,450	56,795
7/22/2024	825,450	763,000	734,750	509,100	56,351
7/26/2024	816,600	748,200	719,350	490,950	56,502
7/29/2024	813,950	744,550	715,000	485,950	56,584
8/05/2024	802,000	728,050	701,900	478,800	56,809
8/12/2024	781,700	712,450	698,750	493,500	56,394
8/15/2024	794,800	721,800	712,800	510,500	56,288
8/19/2024	790,500	721,950	713,850	519,950	56,106
8/23/2024	754,050	694,600	682,100	510,700	55,654
8/26/2024	750,150	693,100	678,400	509,300	55,529
9/02/2024	743,500	700,900	679,500	507,000	55,203
9/06/2024	701,250	687,800	662,100	488,900	55,575
9/10/2024	690,250	678,350	653,600	483,500	55,568
9/11/2024	675,700	658,750	636,400	465,900	55,513

9/16/2024	675,900	649,550	626,400	449,900	55,606
9/23/2024	707,600	661,600	637,550	460,900	55,276
9/30/2024	705,200	665,650	650,550	459,950	55,135
10/07/2024	718,050	679,850	673,550	474,650	55,352
10/10/2024	742,250	701,550	698,300	489,050	55,800
10/14/2024	756,950	703,700	700,300	493,800	56,025
10/18/2024	749,100	674,650	669,500	471,000	56,336
10/21/2024	733,850	661,600	656,450	460,700	56,404
10/28/2024	722,200	667,300	658,200	474,100	56,789
11/04/2024	692,450	658,500	647,850	459,650	56,819
11/08/2024	703,450	688,550	675,900	471,300	56,667
11/11/2024	704,050	688,350	675,000	473,000	56,769
11/18/2024	684,900	672,550	656,750	460,600	57,797
11/25/2024	701,950	696,450	671,300	471,250	58,232
12/02/2024	681,000	674,100	651,600	475,500	58,563
12/10/2024	677,850	661,550	645,850	484,200	58,441
12/16/2024	695,900	666,350	652,150	484,900	58,360
12/23/2024	690,050	677,200	663,850	482,550	58,675
12/30/2024	690,000	668,650	656,100	477,100	59,159

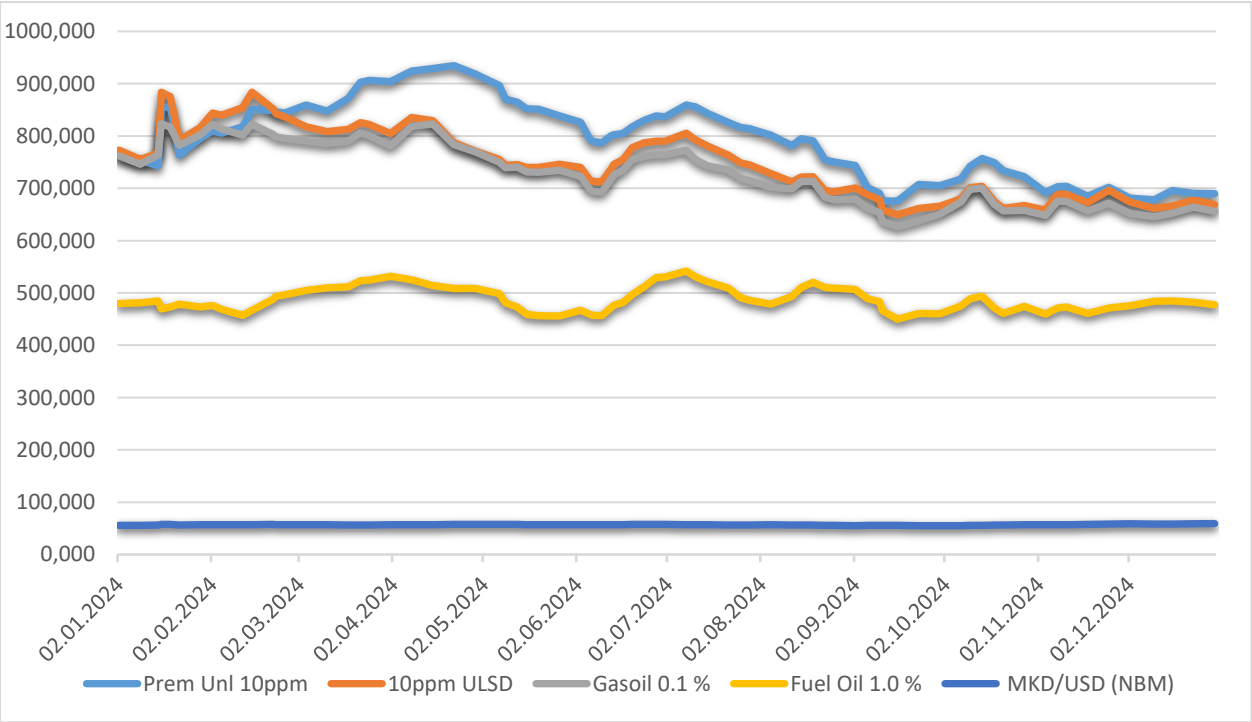


Chart 5.14 Average stock exchange prices of the reference oil derivatives and the average denar/dollar exchange rate in 2024

Retail prices of oil derivatives in 2024 are provided in Table 5.3, and Chart 5.15 presents the appropriate diagrams

Table 5.3 Retail prices of oil derivatives in 2024 (MKD/lit)

Date	EUROSUPER BS - 95	EUROSUPER BS 98	EURODIESEL BS (D-EV)	EL-1	Mazut ns (M-1) (mkd/kg)
1/02/2024	77.00	79.50	73.50	73.00	41,236
1/09/2024	77.00	79.00	72.50	72.00	41,517
1/15/2024	76.50	78.50	73.50	73.50	41,941
1/22/2024	78.00	80.00	75.00	74.50	41,732
1/29/2024	79.50	81.50	76.50	76.00	41,439
2/02/2024	79.50	81.50	78.50	76.00	41,439
2/05/2024	80.50	82.50	78.00	77.00	41,352
2/12/2024	81.00	83.50	79.50	76.50	40,732
2/15/2024	83.00	83.50	79.50	76.50	40,732
1/16/2024	83.00	85.50	79.50	76.50	40,732
1/19/2024	83.00	85.50	80.50	77.50	41,881
2/22/2024	83.00	85.50	80.50	77.50	42,901
2/23/2024	83.00	85.50	78.50	77.50	42,901
2/26/2024	82.50	84.50	78.00	76.00	43,343
3/04/2024	83.00	85.00	77.00	75.50	43,752
3/11/2024	82.50	84.50	76.50	75.00	44,019
3/18/2024	83.00	85.50	76.00	75.00	43,797
3/22/2024	85.00	85.50	76.00	75.00	43,797
3/25/2024	85.00	87.00	77.00	76.00	44,776
4/01/2024	85.00	87.50	76.00	75.00	45,459
4/08/2024	86.50	88.50	78.00	77.00	45,173
4/15/2024	86.50	88.50	77.50	77.50	44,302
4/22/2024	87.50	90.00	76.00	76.00	44,554
4/29/2024	87.50	89.50	75.50	75.50	46,661
5/07/2024	86.00	88.00	74.50	74.00	45,832
5/09/2024	86.00	88.00	74.50	74.00	44,609
5/13/2024	84.50	86.50	74.00	73.50	44,007
5/16/2024	84.50	86.50	74.00	73.50	42,935
5/20/2024	83.00	85.50	73.00	72.50	42,629
5/27/2024	82.50	84.50	73.50	73.00	42,453
6/03/2024	82.00	84.00	73.00	72.00	43,209
6/06/2024	80.00	84.00	73.00	72.00	43,209
6/07/2024	80.00	82.00	73.00	72.00	43,209
6/10/2024	80.00	82.00	71.50	70.50	42,475
6/13/2024	80.00	82.00	71.50	70.50	43,639
6/14/2024	80.00	82.00	73.50	72.50	43,639
6/17/2024	81.00	83.00	74.00	73.00	44,458
6/20/2024	81.00	83.00	74.00	73.00	45,680
6/24/2024	82.50	85.00	76.50	75.00	46,720
6/28/2024	82.50	85.00	76.50	75.00	47,928
7/01/2024	83.00	85.00	76.50	75.00	48,008

7/08/2024	84.00	86.00	77.00	75.50	48,634
7/11/2024	84.00	86.00	77.00	75.50	47,625
7/15/2024	83.00	85.00	75.50	73.50	46,909
7/22/2024	81.50	83.50	74.00	72.50	45,757
7/26/2024	81.50	83.50	74.00	72.50	44,656
7/29/2024	81.00	83.00	73.00	71.50	44,381
8/05/2024	80.50	83.00	72.50	71.00	44,060
8/12/2024	79.50	81.50	71.00	70.50	44,748
8/15/2024	79.50	81.50	71.00	70.50	45,804
8/19/2024	79.50	81.50	71.50	71.00	46,295
8/23/2024	77.50	79.50	69.50	69.00	46,295
8/26/2024	77.00	79.00	69.50	69.00	45,170
9/02/2024	76.50	78.50	69.50	68.50	44,780
9/06/2024	74.50	78.50	69.50	68.50	44,780
9/10/2024	74.00	76.50	68.50	67.50	43,507
9/11/2024	74.00	76.50	68.50	67.50	42,317
9/16/2024	73.50	75.50	67.00	66.00	41,328
9/23/2024	75.00	77.00	67.50	66.50	41,827
9/30/2024	74.50	76.50	67.50	67.00	41,672
10/07/2024	75.50	77.50	68.50	68.50	42,780
10/10/2024	75.50	77.50	68.50	68.50	44,034
10/14/2024	78.00	80.00	70.50	70.50	44,507
10/18/2024	78.00	80.00	70.50	70.50	43,212
10/21/2024	77.00	79.00	68.50	68.00	42,573
10/28/2024	77.00	79.00	69.00	69.00	43,933
11/04/2024	75.50	77.50	68.50	68.00	42,985
11/08/2024	75.50	77.50	70.50	68.00	42,985
11/11/2024	76.00	78.00	70.50	69.50	43,844
11/18/2024	76.00	78.00	70.50	69.50	43,708
11/25/2024	77.00	79.00	72.00	70.50	44,737
12/02/2024	76.00	78.50	71.00	69.50	45,258
12/10/2024	76.00	78.00	70.00	69.50	45,775
12/16/2024	76.50	79.00	70.50	69.50	45,765
12/23/2024	76.50	79.00	71.00	70.50	45,823
12/30/2024	77.00	79.00	71.00	70.50	45,784

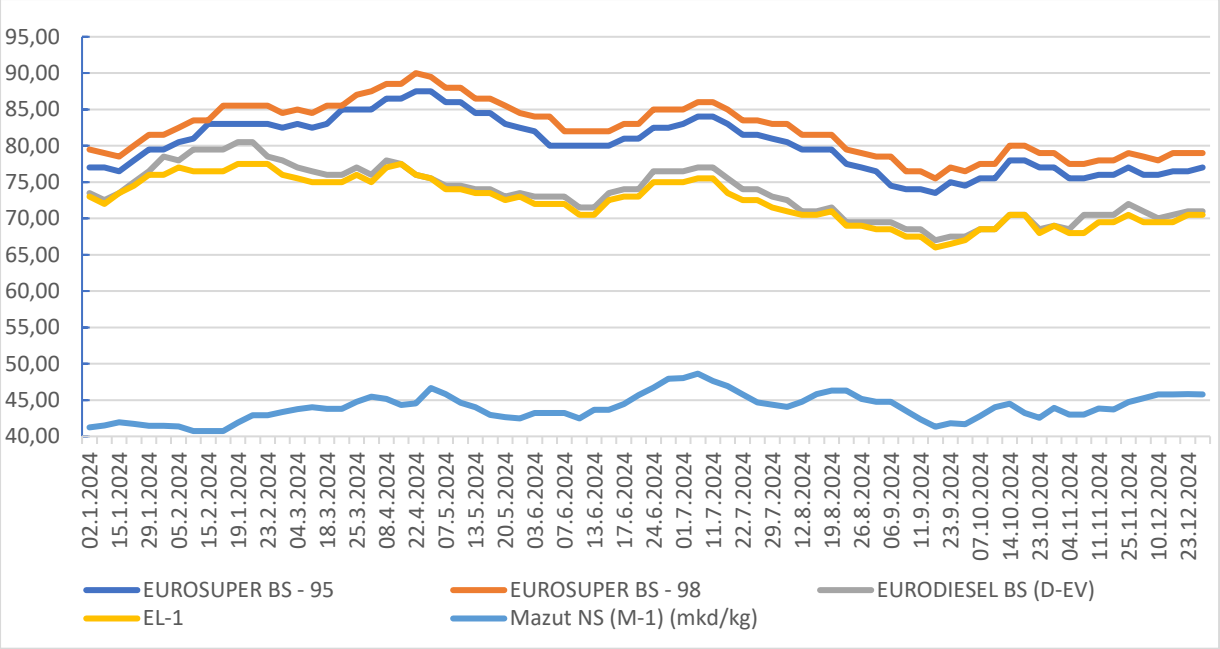


Chart 5.15 Fluctuation of retail prices of oil derivatives in 2024 (MKD/lit)

The procurement prices of the oil derivatives in 2024 are provided in Table 5.4, and Chart 5.16 presents the appropriate diagrams.

Table 5.4 Procurement prices of oil derivatives in 2024 (MKD/lit)

Date	EUROSUPER BS - 95	EUROSUPER BS - 98	EURODIESEL BS (D-EV)	EL-1	Mazut NS (M-1) (mkd/kg)
1/02/2024	36,038	37,813	39,880	39,473	31,556
1/09/2024	35,804	37,589	39,249	38,924	31,794
1/15/2024	35,510	37,302	39,978	39,942	32,153
1/22/2024	36,573	38,375	41,392	41,019	31,976
1/29/2024	38,043	39,850	42,653	42,089	31,728
2/02/2024	38,043	39,850	44,129	42,089	31,728
2/05/2024	38,649	40,464	43,985	42,803	31,654
2/12/2024	39,384	41,209	44,935	42,477	31,129
2/15/2024	40,830	41,209	44,935	42,477	31,129
1/16/2024	40,830	42,855	44,935	42,477	31,129
1/19/2024	41,127	42,956	46,011	43,317	32,102
2/22/2024	41,127	42,956	46,011	43,317	32,967
2/23/2024	41,127	42,956	44,369	43,317	32,967
2/26/2024	40,434	42,256	43,984	42,112	33,341
3/04/2024	40,975	42,790	42,927	41,741	33,688
3/11/2024	40,366	42,178	42,377	41,416	33,914
3/18/2024	41,077	42,874	42,259	41,289	33,726
3/22/2024	42,528	42,874	42,259	41,289	33,726
3/25/2024	42,681	44,483	42,820	41,923	34,556

4/01/2024	42,794	44,605	42,208	41,169	35,135
4/08/2024	43,806	45,624	43,843	43,129	34,892
4/15/2024	43,863	45,674	43,393	43,203	34,154
4/22/2024	44,817	46,657	42,036	41,974	34,368
4/29/2024	44,054	45,892	41,181	41,213	35,653
5/07/2024	42,905	44,735	40,228	40,073	34,951
5/09/2024	42,905	44,735	40,228	40,073	33,914
5/13/2024	41,470	43,297	39,704	39,554	33,404
5/16/2024	41,470	43,297	39,704	39,554	32,496
5/20/2024	40,561	42,375	39,135	38,790	32,236
5/27/2024	39,884	41,691	39,305	38,841	32,087
6/03/2024	39,379	41,187	39,012	38,294	32,728
6/06/2024	38,034	41,187	39,012	38,294	32,728
6/07/2024	38,034	39,654	39,012	38,294	32,728
6/10/2024	37,685	39,493	37,691	36,865	32,106
6/13/2024	37,685	39,493	37,691	36,865	33,092
6/14/2024	37,685	39,493	39,529	38,662	33,092
6/17/2024	38,716	40,537	39,993	39,120	33,786
6/20/2024	38,716	40,537	39,993	39,120	34,822
6/24/2024	40,037	41,868	41,810	40,678	35,703
6/28/2024	40,037	41,868	41,810	40,678	36,727
7/01/2024	40,364	42,196	41,966	40,836	36,795
7/08/2024	41,175	43,000	42,552	41,107	37,325
7/11/2024	41,175	43,000	42,552	41,107	36,470
7/15/2024	40,176	41,987	41,038	39,329	35,863
7/22/2024	39,103	40,900	39,874	38,634	34,887
7/26/2024	39,103	40,900	39,874	38,634	33,954
7/29/2024	38,773	40,578	39,157	37,849	33,721
8/05/2024	38,414	40,226	38,520	37,371	33,449
8/12/2024	37,269	39,067	37,495	36,947	34,032
8/15/2024	37,269	39,067	37,495	36,947	34,927
8/19/2024	37,454	39,243	37,755	37,476	35,343
8/23/2024	35,621	37,396	36,165	35,682	35,343
8/26/2024	35,377	37,148	36,013	35,427	34,390
9/02/2024	34,890	36,651	36,165	35,270	34,059
9/06/2024	33,352	36,651	36,165	35,270	34,059
9/10/2024	32,888	34,659	35,345	34,287	32,980
9/11/2024	32,888	34,659	35,345	34,287	31,972
9/16/2024	32,308	34,081	34,016	33,032	31,134
9/23/2024	33,438	35,200	34,376	33,356	31,557
9/30/2024	33,254	35,012	34,479	33,878	31,425
10/07/2024	33,924	35,689	35,281	35,090	32,364
10/10/2024	33,924	35,689	35,281	35,090	33,427
10/14/2024	35,980	37,766	36,835	36,779	33,828

10/18/2024	35,980	37,766	36,835	36,779	32,730
10/21/2024	35,238	37,036	35,078	34,937	32,189
10/28/2024	35,238	37,051	35,837	35,464	33,341
11/04/2024	33,981	35,794	35,432	34,985	32,538
11/08/2024	33,981	35,794	36,776	34,985	32,538
11/11/2024	34,447	36,259	36,831	36,254	33,266
11/18/2024	34,236	36,081	36,730	36,023	33,151
11/25/2024	35,243	37,102	38,181	37,009	34,023
12/02/2024	34,518	36,387	37,292	36,244	34,464
12/10/2024	34,307	36,172	36,595	35,885	34,902
12/16/2024	35,055	36,917	36,782	36,147	34,894
12/23/2024	34,984	36,856	37,517	36,921	34,943
12/30/2024	35,271	37,158	37,399	36,838	34,910

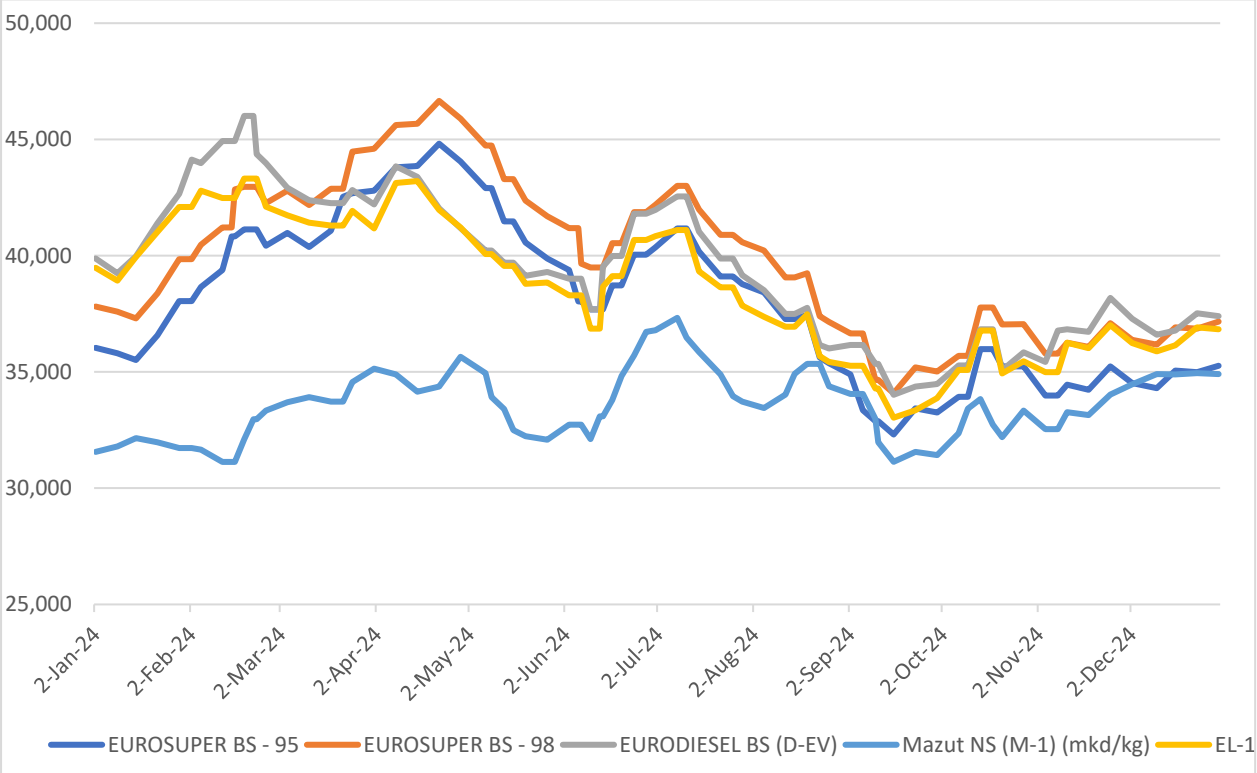


Chart 5.16 Fluctuation of procurement prices of oil derivatives in 2024

The average percentage share of individual elements in the structure of retail prices for oil derivatives in 2024 is shown in Figure 5.17, while the average amounts of individual elements in the structure of retail prices for oil derivatives in 2024 are shown in Figure 5.18.

The retail prices of Eurodiesel and Eurosuper BS-95 in the Republic of North Macedonia are the lowest compared to the countries in the region and EU countries (according to https://ec.europa.eu/energy/data-analysis/weekly-oil-bulletin_en from 23.12.2024), which is visible from the data in Table 5.5.

Table 5.5 Retail prices of Eurodiesel and Eurosuper BS-95 in North Macedonia and EU countries (according to *https://ec.europa.eu/energy/data-analysis/weekly-oil-bulletin_en* dated 23.12.2024)

Countries	Eurodiesel (EUR/lit)	Eurosuper BS-95 (EUR/lit)
North Macedonia	1.154	1.244
Austria	1.563	1.523
Countries	Eurodiesel (EUR/lit)	Eurosuper BS-95 (EUR/lit)
Bulgaria	1.268	1.267
Croatia	1.535	1.518
Germany	1.607	1.731
Greece	1.573	1.788
Italy	1.653	1.755
Hungary	1.539	1.498
Slovenia	1.574	1.500

Fees to the state as a share of the retail prices of Eurodiesel and Eurosuper BS-95 in North Macedonia and the countries in the region and EU countries (according to https://ec.europa.eu/energy/data-analysis/weekly-oil-bulletin_en dated 23.12.2024) is given in Table 5.6.

Table 5.6 Fees to the state for Eurodiesel and Eurosuper BS-95 in North Macedonia and EU countries (according to *https://ec.europa.eu/energy/data-analysis/weekly-oil-bulletin_en* dated 23.12.2024)

Countries	Eurodiesel (EUR/lit)	Eurosuper BS-95 (EUR/lit)
North Macedonia	0.434	0.568
Austria	0.779	0.847
Bulgaria	0.541	0.574
Croatia	0.713	0.816
Germany	0.839	1.033
Greece	0.729	1.061

Italy	0.915	1.005
Hungary	0.684	0.699
Slovenia	0.856	0.867

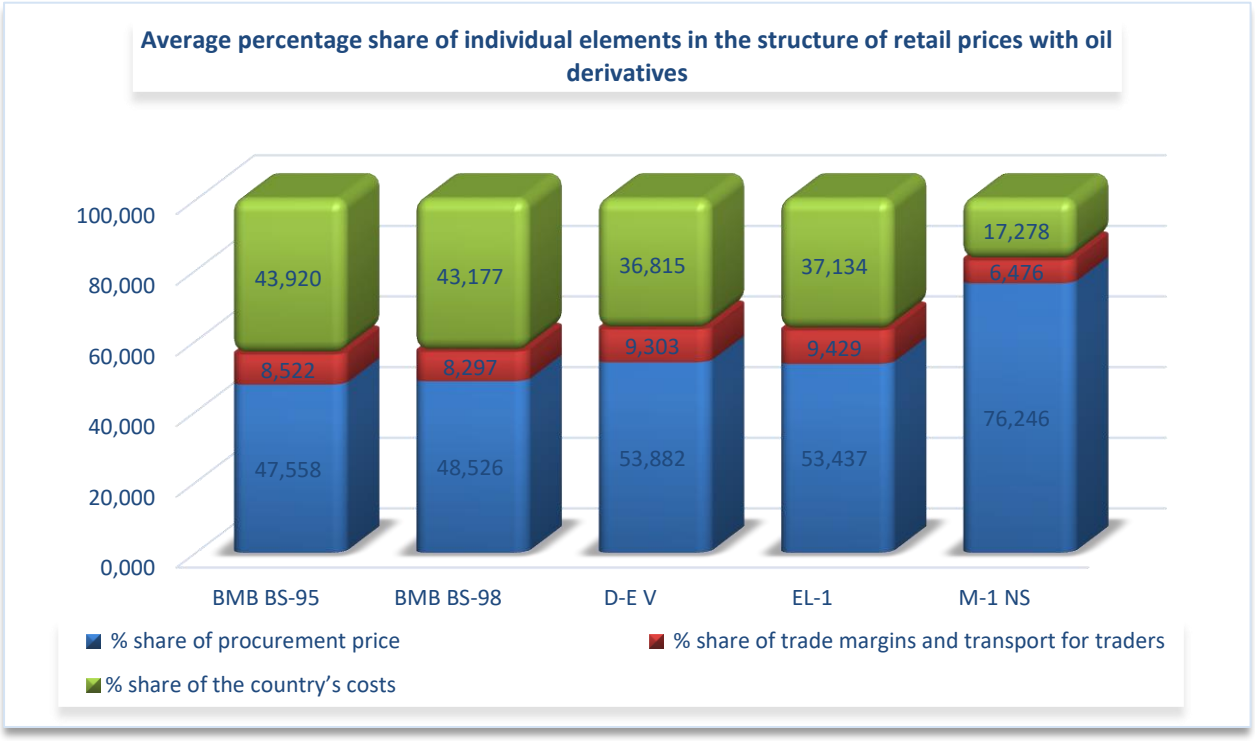


Chart 5.17 Average percentage share of individual elements in the structure of retail prices of oil derivatives in 2024

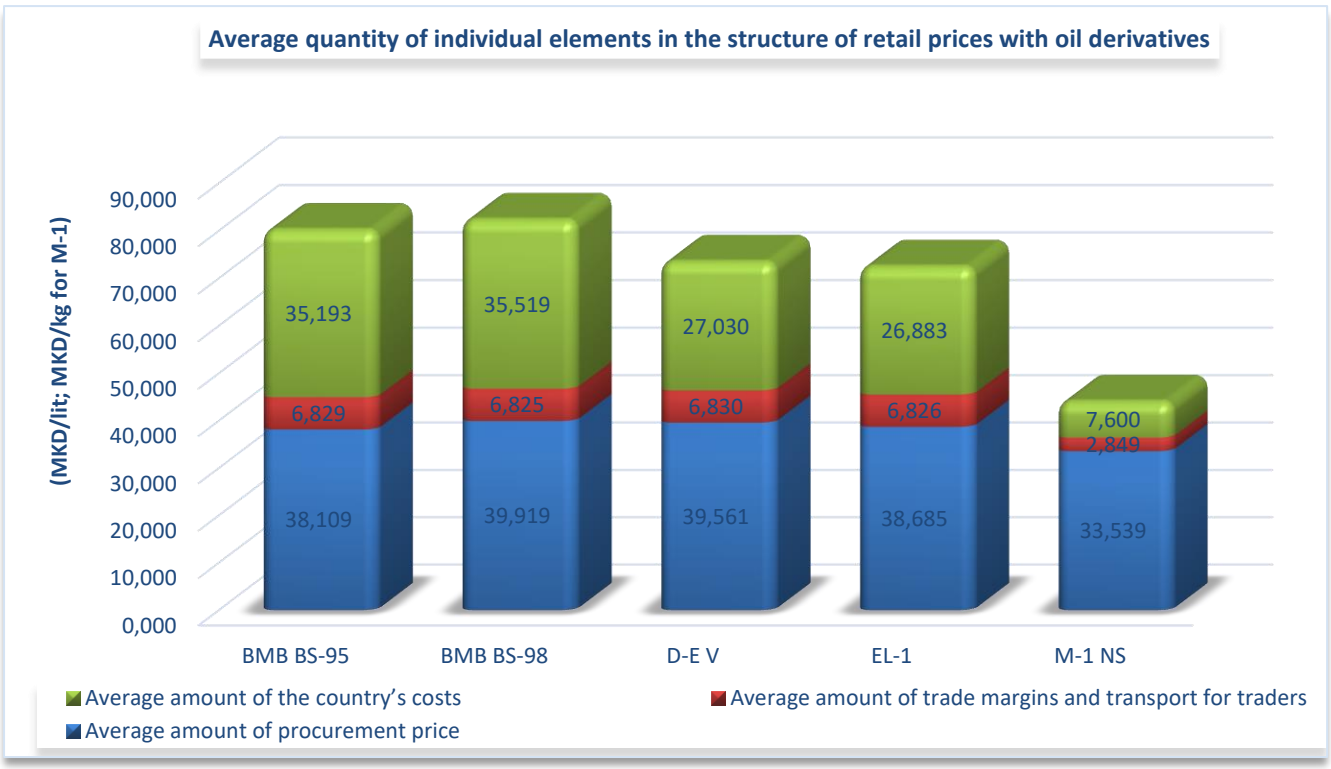


Chart 5.18 Average amount of individual elements in the structure of retail prices of oil derivatives in 2024

FLUCTUATIONS OF RETAIL PRICES OF OIL DERIVATIVES IN THE PERIOD 2022 - 2024

MARKET CONCENTRATION

2024

VI. MARKET CONCENTRATION

The Energy Regulatory Commission, for the fourth time in a row publishes the HHI (Herfindahl-Hirschman Index), the Market Concentration Assessment Indexes for electricity, natural gas, and oil derivatives markets.

The HHI index is one of the key indicators for assessing market concentration and is one of the indicators recommended by the CEER[1] for assessing the functionality of electricity and natural gas retail markets. The classification is developed in accordance with Horizontal Merger Guidelines, published by the U.S Department of Justice and the Federal Trade Commission[2].

Table 6.1 Table 6.1 Indicators on market concentration in 2023

Activity	HHI	Classification	Number of market participants with a share over 5%	Overall share of market participants with a share over 5%
Sale of oil derivatives through gas stations and to end consumers	1,627	Moderate concentration	4	69.74
Electricity wholesale	1,543	Moderate concentration	6	74.15
Electricity sale - to end users	4,076	High concentration	4	93.18
Natural gas retail sale	2,924	High concentration	3	95.64

The presented data enclosed in the Table above, reveal that the market concentration in the segment sale of oil derivatives through gas stations and to end consumers in 2024 was 1,627. Compared to 2023, when the market concentration was 1,415, growth is marked of 14.98%, whereas the total share of market participants of 5% for 2024 was 69.74%, marking a decrease of 10.3% compared to 2023.

Two segments are analysed in the electricity market:

- Electricity wholesale, and

[1] 2017 Handbook for National Energy Regulators How to assess retail market functioning
[2] Horizontal Merger Guidelines - U.S. Department of Justice and the Federal Trade Commission

- Electricity sale to small consumers.

The first segment is electricity wholesale, which includes sales by electricity traders towards other traders. The number of market participants that have a share of over 5% in the share of sale, in 2023 is the same as in 2022, with an overall share in the sale of 77,37%. This segment reveals continuity in relation to 2021 and 2022, i.e., the status of moderate concentration is maintained. At the same time, in 2024 the HHI index is 1.543, while for 2023 it was 1.986. The number of market participants with share in sales of more than 5% in 2024 was lower by 4.17% compared to 2023, with a total share in the sales of 67.57%. The HHI index points out that in 2024 the market power of the greatest six market participants on the wholesale electricity market is similarly allocated.

The second segment on the electricity market which is subject to analysis in the domain of market concentration is the electricity sale to end consumers. This covers the total sales of the regulated and liberalized retail market segment, as well as the sale of electricity to cover the losses within the electricity transmission and distribution systems. This segment keeps the status of high concentration. At the same time, in 2024 the HHI index is 4.076, while for 2023 it was 4.224. The total share of the four market participants with a share of more than 5% in the total sale of electricity in 2024 is 93.18% whereas the total share of the three market participants with a share higher than 5% in 2023 was 93.10.

The natural gas retail market, that does not comprise trade activities by TE-TO JSC Skopje, continuously holds the highest market concentration, even though in 2024, we can note a positive trend. Namely, in 2024 the HHI index is 2,924, while in 2023, this indicator was 3.283. In 2024, there were four market participants with a share in the sale of over 5%, unlike 2023 when there were four market participants with a share in the sales of more than 5%. Their overall share in the retail natural gas market marks a lower impact in 2024 by 95.64%, in relation to its impact in 2023 by 98.44%.

WATER SERVICES

2024

VII. WATER SERVICES

The Law on Determining Prices for Water Services ("Official Gazette of the Republic of Macedonia" No. 7/16) regulates the regulation of prices for water services, i.e. the determination of tariffs for water services - supply of raw water intended for water supply to the population, water supply, collection and disposal of urban wastewater and wastewater treatment.

Pursuant to the Law on Setting Prices for Water Services the procedure for setting tariffs of the water services is conducted by the Energy Regulatory Commission. With this competence and responsibility Energy Regulatory Commission and thus contributes to the continuous development of the water services sector in the Republic of North Macedonia, i.e. through the measures provided for water service providers, it enables effective and efficient management of the supply of raw water intended for water supply to the population, water supply, collection and disposal of urban wastewater and wastewater treatment.

By regulating water service prices is to reform the existing water services sector, whereby water service providers are expected to make significant changes in terms of organizational, management, financial and operational aspects of their operations. On the other hand, by establishing certain measures and providing guidelines for their operations, water service providers are enabled to develop sustainably and self-finance future investment projects through which the quality of water services is improved.

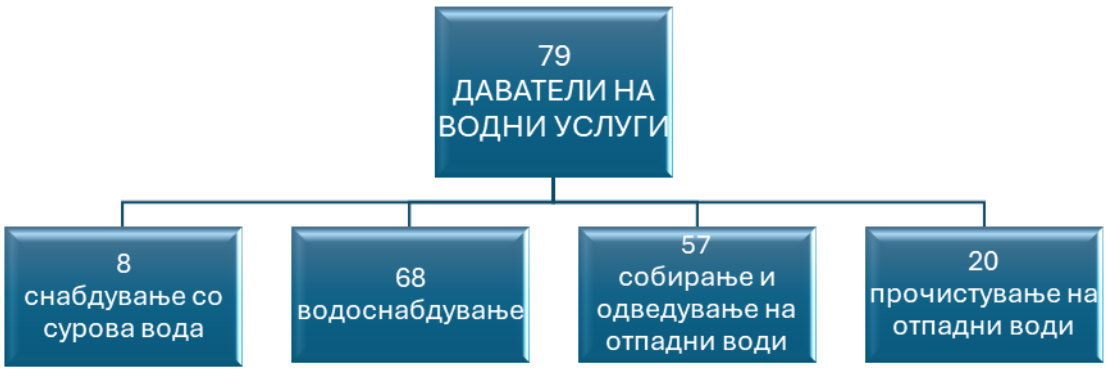
The regulation of prices for water services via the principles provided in the Law on Setting Prices for Water Services, aims to provide a price for water services which can be covered by households, considering the overall revenues of a household in the area where the water service is provided. The aim is to provide sustainable usage of the infrastructure for performing water services, achieving a complete return of costs, and improving the quality of water services for providing continuous services in line with the best available practices.

7.1 WATER SERVICES GENERAL DATAWater is an essential natural source for human existence, required in each natural and industrial process. The Republic of North Macedonia is in disposition of satisfactory quantities of water sources, but unequally arrayed. There are 35 rivers, 53 natural and artificial lakes on the territory of the Republic of North Macedonia, and the territory is divided into eight water management areas.

Picture 7.1 Water management regions in the Republic of North Macedonia

The provision of water services in 2024 in the Republic of North Macedonia is carried out by 79 water service providers, of which eight supply raw water intended for water supply to the population, 68 provide water supply, i.e. supply of drinking water, 57 collect and discharge urban wastewater and 20 provide wastewater treatment.

Along with the water service, some of the public utility enterprises offer services on collection and disposal of waste, green markets services, parks and greenery services, cemeteries maintenance services, and other public services.



Picture 7.2 Water Service Providers

7.2 SUPPLY WITH RAW WATER ENVISAGED FOR WATER SUPPLYING OF THE POPULATION

7.2.1 GENERAL DATA

The water service of raw water supply envisaged for supply of the population in the territory of the Republic of North Macedonia, is provided by a total of eight water supply providers, covering partly or entirely the requirements for drinking water to municipalities, further listed: Kumanovo, Sveti Nikole, Probishtip, Veles, Kavadarci, Strumica, Novo Selo, Vasilevo, Bosilovo, Bitola, Dolneni, Plasnica, Kichevo, Makedonski Brod, Prilep, Krusevo and Berovo.

7.2.2 RAW WATER SUPPLY TARIFFS

The regulated period with established tariffs on supply of raw water supply designated to the population is in timeframe of three years, i.e., for the period between 2024-2026. In 2023 applications were submitted for setting tariffs for raw water pursuant to which the Energy Regulatory Commission set the new tariffs for the regulated period 2024-2026.

Determined tariffs by the Energy Regulatory Commission, in line with the Methodology are minimum and maximum tariffs, whereby water service providers have their own range for setting tariffs. Authorized tariffs by the board of directors of water service providers are submitted to the Government of the Republic of North Macedonia whereby a decision for authorizing proposed prices by all eight water service providers are adopted.

The tariffs applied by the water services providers for supply with raw water intended for water supply of the population in 2023 and 2024 are presented in Table 7.1.

Table 7.1 Tariffs on raw water supply designated for the population in 2023 and 2024

No.	Water service provider - supply of raw water	Unit	2023	2024	2024/2023 (%)
1	JPV Lisiche Veles	mkd/m³	3.84	4.70	22.4%
2.1	JP Studenchica Kichevo - Kichevo	mkd/m³	1.40	1.68	19.7%
2.2	JP Studenchica Kichevo - Makedonski Brod, Plasnica	mkd/m³	2.20	2.63	19.8%
2.3	JP Studenchica Kichevo - Krushevo, Prilep, Dolneni, Krivogashtani	mkd/m³	2.78	3.32	19.6%
3	JP Strezhevo Bitola	mkd/m³	5.56	6.48	16.5%
4	JPHS Zletovica Probishtip	mkd/m³	4.69	4.92	4.9%
5	JSC Vodostopanstvo Subsidiary Berovo	mkd/m³	3.08	4.11	33.4%
6	JSC Vodostopanstvo Subsidiary Strumichko Pole	mkd/m³	3.72	4.03	8.3%
7	JSC Vodostopanstvo Subsidiary Kumanovsko-Lipkovsko Pole	mkd/m³	3.41	4.50	32.0%
8	JSC Vodostopanstvo Subsidiary Tikvesh Kavadarci	mkd/m³	3.62	4.61	27.3%

The data analysed in Table 7.1 indicates that in 2024, the tariffs of all water service providers and water economy are increased compared to 2023. Greatest difference is marked in JSC Vodostopanstvo Subsidiary Berovo with 33.4% increase in the tariff as compared to last year. The smallest difference is noted in JPHS Zletovica Probishtip with only 4.9% increase compared to the previous year.

The increase of the tariffs is the result of several factors, as follows: increased costs for water production and distribution, reduced quantity of natural resources, increased energy costs as well as the need for reconstruction and modernization of the infrastructure which require provision of additional financial resources.

In 2024, due to the Government's failure to approve the decision of PE Studenchica Kichevo, the Energy Regulatory Commission acted in accordance with the Law on Determining Tariffs for Water Services as well as the Methodology for Determining Tariffs for Water Services and initiated the procedure for adopting a regulatory tariff. After adopting the Decision on Determining a Regulatory Tariff for Raw Water, PE Studenchica Kichevo began to apply the tariffs for the regulated period 2024-2026 which are shown in Table 7.1.

7.3 DRINKING WATER SUPPLY OR WATER SUPPLY

7.3.1 GENERAL DATA

The drinking water supply or water supply in areas with more than 10,000 equivalent residents in the Republic of North Macedonia is provided by a total of 29 water services providers, covering partially or fully the needs for drinking water in the following municipalities: Veles, Kavadarci, Negotino, Sveti Nikole, Berovo, Vinica, Kochani, Probishtip, Shtip, Debar, Struga, Kichevo, Ohrid, Bosilovo, Gevgelija, Strumica, Radovish, Bitola, Dolneni, Prilep, Resen, Brvenica, Vrapchishte, Gostivar, Zhelino, Tetovo, Kumanovo, Skopje and Ilinden.

The drinking water supply or water supply in areas with more than 10,000 equivalent residents in the Republic of North Macedonia is provided by a total of 39 water services providers, covering partially or fully the needs for drinking water in the following municipalities: Demir Kapija, Gradsko, Chashka, Rosoman, Makedonska Kamenica, Delchevo, Cheshinovo Obleshevo, Karbinci, Pehchevo, Zrnovci, Lozovo, Vevchani, Debrca, Makedonski Brod, Centar Zhupa, Plasnica, Dojran, Novo Selo, Vasilevo, Bogdanci, Valandovo, Konche, Novaci, Krushevo, Demir Hisar, Mogila, Krivogashtani, Tearce, Bogovinje, Mavrovo, Staro Nagorichane, Kriva Palanka, Kratovo, Rankovce, Gazi Baba, Zelenikovo, Petrovec, Chucher Sandevo and Lipkovo, which starting as of 2025 shall apply the tariffs set by the Energy Regulatory Commission pursuant to the application for setting tariffs for water services in 2024.

7.3.2 TARIFFS FOR SUPPLY WITH DRINKING WATER OR WATER SUPPLY TO AREAS WITH OVER 10.000 (EQUIVALENT) RESIDENTS

The regulated period with established tariffs on supply of drinking water or water supply by water services providers in areas with more than 10,000 equivalent residents is in timeframe of three years, i.e., for the period between 2024-2026. The comparison of tariffs is made with the previous year, which refers to the previous regulated period 2021-2023.

The Energy Regulatory Commission determines the range within which water service tariffs can vary, while, upon the proposal of water service providers, the final tariffs by user

category are approved by the Council of the municipality in whose area the water service is provided. With the submission of new requests for the regulated period 2024-2026, a greater difference in tariffs is observed for a large number of water service providers compared to the previous regulated period.

The tariffs applied by water service providers supplying drinking water or water supply to areas with over 10,000 equivalent residents in 2023 and 2024 are shown in Table 7.2.

Table 7.2 Water supply tariffs for 2023 and 2024 in areas with over 10.000 equivalent residents (MKD/m3)

No.	Water Service Provider water supply in areas with over 10.000 (equivalent) residents	Households			Other		
		2023	2024	2024/2023 (%)	2023	2024	2024/2023 (%)
1	JKP Derven Veles	33.26	38.18	14.79%	61.36	68.72	11.99%
2	JKP Komunalec Kavadarci	19.55	29.00	48.34%	39.29	55.80	42.02%
3	JKP Komunalec Negotino	22.87	24.95	9.09%	41.72	44.91	7.65%
4	JKP Komunalec Sveti Nikole	38.00	45.00	18.42%	55.00	54.40	-1.09%
5	JPKR Usluga Berovo	38.86	40.92	5.30%	64.11	67.51	5.30%
6	JKP Solidarnost Vinica	26.71	28.65	7.26%	50.74	54.37	7.15%
7	KJP Vodovod Kochani	46.47	49.75	7.06%	56.00	59.71	6.63%
8	JKP Nikola Karev Probishtip	39.80	41.92	5.31%	63.50	68.00	7.09%
9	JKP Isar Shtip	36.25	39.46	8.86%	54.37	58.00	6.68%
10	JKP Standard Debar	19.00	21.40	12.63%	38.00	40.67	7.03%
11	JP Vodovod i kanalizacija Struga	28.70	38.50	34.15%	44.48	70.00	57.37%
12	JKP Komunalec Kichevo	33.00	33.15	0.45%	48.30	48.39	0.19%
13	JP Vodovod Ohrid	28.21	36.54	29.53%	41.51	58.46	40.83%
14	JPKD Ograzhden Bosilovo	21.27	24.11	13.35%	21.27	24.11	13.35%
15	JKPD Komunalec Gevgelija	19.10	22.60	18.32%	33.60	37.60	11.90%
16	JKP Komunalec Strumica	31.20	33.99	8.94%	59.00	60.55	2.63%
17	JKP Plavaja Radovish	31.47	34.08	8.29%	40.81	44.31	8.58%
18	JP Vodovod Bitola	31.78	34.46	8.43%	52.80	57.55	9.00%
19	JP Dolneni	28.00	34.00	21.43%	43.00	48.00	11.63%
20	JP Vodovod i kanalizacija Prilep	28.99	39.59	36.56%	46.90	57.40	22.39%
21	JKP Proleter Resen	31.00	45.40	46.45%	51.00	62.72	22.98%
22	OJP Vardar Brvenica	19.80	21.00	6.06%	33.50	40.00	19.40%
23	JKP Vrapchishte	13.60	14.90	9.56%	13.60	14.90	9.56%
24	JKP Komunalec Gostivar	17.00	21.78	28.12%	64.00	69.68	8.88%
25	JPKD Mirmbajtja Zhelino	13.42	13.77	2.61%	13.42	13.77	2.61%
26	PP Tetovo	16.08	20.00	24.38%	25.45	27.50	8.06%
27	JP Vodovod Kumanovo	34.00	40.50	19.12%	39.10	47.00	20.20%
28	JP Vodovod i kanalizacija Skopje	18.50	18.50	0.00%	49.50	49.50	0.00%
29	JKP Vodovod Ilinden	26.58	26.61	0.11%	47.15	47.37	0.47%

From the data in Table 7.2, it can be concluded that 28 out of 29 water service providers have an increase in the household tariff in 2024 compared to 2023, while one water service provider applies the same tariff as was determined the previous year. Based on these data, it is noted that there is no reduction in the tariff for this category of users.

In the category of other users, 27 water service providers have an increase in the tariff in 2024 compared to 2023, one of them has a reduction in the tariff and one provider who in 2024 invoiced according to the tariff determined in 2023 for this category of users.

The only reduction in the water supply tariff, and only in the category of other users, is observed at PUC Komunalec Sveti Nikole with -1.09%.

The largest increase in the tariff for water supply for households was recorded at JKP Komunalec Kavadarci, by 48.34%. While in the category of other PEs, Vodovod i kanalizacija Struga applies the tariff with the largest increase, by 57.37% compared to the previous year.

According to the data presented in the table, the lowest tariff for households is applied by JPKD Mirmbajtja Zhelino with 13.77 den/m³ from the Polog region, while the highest tariff is applied by KJP Vodovod Kochani with 49.75 den/m³ from the Eastern region, which are determined in accordance with the Decisions on Regulatory Tariffs by the Energy Regulatory Commission.

7.3.3 TARIFFS FOR SUPPLY WITH DRINKING WATER OR WATER SUPPLY TO AREAS WITH UNDER 10.000 (EQUIVALENT) RESIDENTS

The regulated period with established tariffs on supply of drinking water or water supply by water services providers in areas with under 10,000 equivalent residents is in timeframe of three years, i.e., for the period between 2022-2024.

The Energy Regulatory Commission determines the range within which water service tariffs can vary, while, upon the proposal of water service providers, the final tariffs by user category are approved by the Council of the municipality in whose area the water service is provided.

The tariffs applied by water service providers supplying drinking water or water supply to areas with under 10,000 equivalent residents in 2023 and 2024 are shown in Table 7.3.

Table 7.3 Water supply tariffs for 2023 and 2024 in areas with below 10.000 equivalent residents (MKD/m3)

No. No.	Water Service Provider water supply in areas with below 10.000 (equivalent) residents	Households			Other		
		2023	2024	2024/2023 (%)	2023	2024	2024/2023 (%)
1	JPKD Boshava Demir Kapija	27.00	20.40	-24.44%	47.00	37.50	-20.21%
2	JKP Klepa Gradsko	21.92	22.26	1.55%	29.29	29.67	1.30%
3	JKP Topolka Chashka	30.00	30.00	0.00%	30.00	30.00	0.00%
4	JKPD Rosoman	22.92	23.10	0.79%	29.50	29.50	0.00%
5	JP Kamena Reka Makedonska Kamenica	25.00	25.00	0.00%	60.00	60.00	0.00%
6	JPKD Bregalnica Delchevo	39.53	40.69	2.93%	65.62	67.14	2.32%
7	JKP Obleshevo Cheshinovo Obleshevo	30.70	19.40	-36.81%	30.70	19.40	-36.81%
8	JP Plachkovica Karbinci	33.53	33.68	0.45%	57.62	58.37	1.30%

9	JKP Komunalec Pehchevo	30.68	31.66	3.19%	53.70	53.82	0.22%
10	JKP Vodna Kula Zrnovci	25.00	25.00	0.00%	55.00	55.00	0.00%
11	JPKD Lozovo	26.50	26.50	0.00%	48.62	48.81	0.39%
12	JP Eremija Vevchani	14.80	16.00	8.11%	26.40	27.00	2.27%
13	JPKD Debrca	19.20	19.50	1.56%	38.50	39.00	1.30%
14	JP Vodovod i kanalizacija Makedonski Brod	25.00	26.00	4.00%	50.00	52.00	4.00%
15	JKP Kale Centar Zhupa	16.50	17.00	3.03%	35.10	36.30	3.42%
16	JP Komunalec Plasnica	20.88	21.44	2.68%	37.00	37.00	0.00%
17	JPKD Komunalec Polin Dojran	24.40	24.40	0.00%	52.00	50.00	-3.85%
18	JPKD Komuna Novo Selo	28.50	29.00	1.75%	57.00	58.00	1.75%
19	JKP Turija Vasilevo	30.69	31.11	1.37%	45.93	46.67	1.61%
20	JKP Komunalna Chistota Bogdanci	25.59	24.01	-6.17%	35.83	33.61	-6.20%
21	JP Komunalen Servic Valandovo	22.62	19.00	-16.00%	30.08	25.20	-16.22%
22	JPKD Lavavica Konche	22.38	22.38	0.00%	22.38	22.38	0.00%
23	JPKD Komunalna Higiena Novaci	29.88	30.04	0.54%	/	/	/
24	JP Komuna Krushevo	30.50	36.33	19.11%	49.00	50.00	2.04%
25	JKP Komunalec Demir Hisar	25.53	25.60	0.26%	48.00	39.00	-18.75%
26	JKP Pela Higiena Mogila	24.39	24.39	0.00%	/	/	/
27	JP Pelagonija Krivogashtani	25.00	25.00	0.00%	25.00	25.00	0.00%
28	JP Higiena Tearce	11.27	11.25	-0.18%	11.30	11.30	0.00%
29	JKP Shari Bogovinje	7.50	7.50	0.00%	15.00	15.00	0.00%
30	JPKD Mavrovo Mavrovi Anovi	2.60	2.60	0.00%	38.00	38.00	0.00%
31	JKP Kozjak Staro Nagorichane	32.43	32.75	0.99%	63.68	63.75	0.11%
32	JP Komunalec Kriva Palanka	26.00	26.50	1.92%	41.00	40.50	-1.22%
33	DKU Silkom Kratovo	22.83	18.31	-19.80%	34.50	27.63	-19.91%
34	JKP Chist Den Rankovce	26.38	27.31	3.53%	36.93	38.23	3.52%
35	JKP Gazi Baba - 2007	15.50	11.00	-29.03%	20.00	20.00	0.00%
36	JKP Skopska Crna Gora Chucher Sandevo	14.87	14.9	0.20%	37.19	36.97	-0.59%
37	JKP Zelenikovo	31.06	31.06	0.00%	31.22	31.22	0.00%
38	JKP Petrovec	26.87	28.86	7.41%	40.00	40.00	0.00%

From the data in Table 7.3, it can be concluded that 20 out of 38 water service providers have an increase in the household tariff in 2024 compared to 2023, while seven of these water service providers marked decrease, and there are no changes with the other providers.

In the category of other users, 14 water service providers have an increase in the tariff in 2023 compared to 2022, 10 of them have a reduction in the tariff, while 12 marked no change in the tariff for this category of users.

Reducing of the water supply tariff for households is marked in JPKD Boshava Demir Kapija of -24.44%, JKP Obleshevo Cheshinovo of -36.81%, JP Komunalen Servic Valandovo of -16%, JKP Komunalna Chistota Bogdanci of -6.17, JP Higiena Tearce of -0.18%, DKU Silkom Kratovo of -19.80% and JKP Gazi Baba - 2007 reducing of -29.03%, whereas in the category of other decreases, this is market in JPKD Boshava Demir Kapija of -20.21%, JKP Obleshevo

Cheshinovo od -36.81%, JPKD Komunalec Polin Dojran od -3.85%, JKP Komunalna Chistota Bogdanci of -6.20%, JKP Komunalec Demir Hisar of 18.75%, JKP Komunalec Kriva Palanka of -1.22%, JP Komunalen Servic Valandovo of -16.22%, DKU Silkom Kratovo with a decrease of -19.91%, and JKP Skopska Crna Gora Chucher Sandevo of -0.59%.

The largest increase in the water supply tariff was recorded at the Public Enterprise Komuna Krushevo in the household category with a significant increase in the tariff by 19.11%, while in the other category the largest increase was recorded at the Public Enterprise Vodovod i Kanalizacija Makedonski Brod with 4.00%, which is the result of increased costs, whereby the submitted request for amendment of the tariffs for water services resulted in a decision to amend the tariffs for 2023 and 2024.

From the data in the table, it can be noted that the lowest tariff for households is applied by the JPKD Mavrovo with 2.60 den/m³ from the Polog region, while the highest tariff is applied by the JPKD Bregalnica Delchevo with 40.69 den/m³ from the Eastern region.

7.4 COLLECTION AND DISCHARGE (DISPOSAL) OF URBAN WASTEWATERS

7.4.1 GENERAL DATA

The water service of collection and discharge of urban wastewaters, in the territory of the Republic of North Macedonia, in areas with over 10.000 (equivalent) residents, is provided by 28 water service providers, covering partly or entirely the requirements of the further listed municipalities: Veles, Kavadarci, Negotino, Sveti Nikole, Berovo, Vinica, Kochani, Probishtip, Shtip, Debar, Struga, Kichevo, Ohrid, Gevgelija, Strumica, Radovish, Bitola, Prilep, Resen, Brvenica, Vrapchishte, Gostivar, Zhelino, Tetovo, Kumanovo, Skopje, and Ilinden. Starting from 2024 this group was joined by Dolneni upon submission of an application for setting tariff to the Energy Regulatory Commission.

The water service of collection and discharge of urban wastewaters, in the territory of the Republic of North Macedonia, in areas with over 10.000 (equivalent) residents, is provided by 30 water service providers, covering partly or entirely the requirements of the further listed municipalities: Demir Kapija, Gradsko, Chashka, Rosoman, Makedonska Kamenica, Delchevo, Cheshinovo Obleshevo, Karbinci, Pehchevo, Zrnovci, Lozovo, Vevchani, Debrca, Makedonski Brod, Dojran, Novo Selo, Vasilevo, Bogdanci, Valandovo, Konche, Krushevo, Demir Hisar, Mogila, Krivogashtani, Kriva Palanka, Kratovo, Rankovce, Zelenikovo, Chucher Sandevo, Petrovec and Lipkovo.

7.4.2 TARIFFS FOR COLLECTION AND DISCHARGE OF URBAN WASTEWATERS IN AREAS WITH OVER 10,000 EQUIVALENT RESIDENTS

The regulated period with established tariffs on collection and discharge (disposal) of urban wastewaters by water services providers in areas with more than 10,000 equivalent residents is in timeframe of three years, i.e., for the period between 2024-2026.

The Energy Regulatory Commission defines the range within which water service tariffs can vary, while, upon the proposal of water service providers, the final tariffs by user

category are approved by the Council of the municipality in whose area the water service is provided.

The tariffs applied by water service providers supplying the collection and discharge (disposal) of urban waters for the suppliers to areas with under 10,000 equivalent residents in 2023 and 2024 are shown in Table 7.4.

Table 7.4 Tariffs on collection and discharge of urban wastewaters in areas with over 10.000 equivalent residents for 2023 and 2024 (MKD/ m3)

No.	Water Service Provider- Collection and Discharge (disposal) of Urban wastewaters in Areas with over 10.000 (equivalent) residents	Households			Other		
		2023	2024	2024/2023 (%)	2023	2024	2024/2023 (%)
1	JKP Derven Veles	4.68	4.86	3.85%	6.79	7.05	3.83%
2	JKP Komunalec Kavadarci	5.75	8.00	39.13%	9.03	13.50	49.50%
3	JKP Komunalec Negotino	9.67	12.07	24.82%	13.58	15.98	17.67%
4	JKP Komunalec Sveti Nikole	5.00	4.50	-10.00%	7.00	6.00	-14.29%
5	JPKR Usluga Berovo	5.81	7.53	29.60%	9.23	12.04	30.44%
6	JKP Solidarnost Vinica	8.29	9.48	14.35%	8.29	9.48	14.35%
7	KJP Vodovod Kochani	20.03	20.97	4.69%	27.84	27.26	-2.08%
8	JKP Nikola Karev Probishtip	5.31	5.31	0.00%	5.31	5.31	0.00%
9	JKP Isar Shtip	13.62	13.67	0.37%	25.19	26.66	5.84%
10	JKP Standard Debar	3.50	3.50	0.00%	7.00	7.01	0.14%
11	JP Vodovod i kanalizacija Struga	8.75	15.70	79.43%	15.69	29.70	89.29%
12	JKP Komunalec Kichevo	10.50	7.53	-28.29%	13.65	9.04	-33.77%
13	JP Niskogradba Ohrid	11.65	14.00	20.17%	18.89	22.50	19.11%
14	JKPD Komunalec Gevgelija	5.95	6.40	7.56%	10.60	11.19	5.57%
15	JKP Komunalec Strumica	10.80	10.85	0.46%	20.30	19.50	-3.94%
16	JKP Plavaja Radovish	5.53	6.04	9.22%	8.82	9.07	2.83%
17	JKP Niskogradba Bitola	13.32	14.73	10.59%	18.19	20.18	10.94%
18	JP Dolneni	/	12.00		/	25.00	
19	JP Vodovod i kanalizacija Prilep	5.52	6.20	12.32%	5.52	6.20	12.32%
20	JKP Proleter Resen	5.85	5.55	-5.13%	7.35	7.30	-0.68%
21	OJP Vardar Brvenica	3.70	4.61	24.59%	14.50	17.04	17.52%
22	JKP Vrapchishte	2.60	3.65	40.38%	2.60	3.65	40.38%
23	JKP Komunalec Gostivar	11.00	13.52	22.91%	20.00	23.66	18.30%
24	JPKD Mirmbajtja Zhelino	7.56	9.23	22.09%	7.56	9.23	22.09%
25	PP Tetovo	2.50	2.80	12.00%	4.80	4.95	3.13%
26	JP Vodovod Kumanovo	5.48	6.04	10.22%	6.72	7.04	4.76%
27	JP Vodovod i kanalizacija Skopje	12.50	12.50	0.00%	17.70	17.70	0.00%
28	JKP Vodovod Ilinden	9.85	10.22	3.76%	18.10	18.29	1.05%

From the data in Table 7.4, it can be concluded that 21 out of 28 water service providers - collection and discharge of urban wastewaters in 2024 have an increase in the

household tariff in 2024 compared to 2023, while three of these water service providers marked decrease, and there are no changes with the other providers.

In the category of other users, 20 water service providers - collection and discharge of urban waster waters in 2024 have an increase in the tariff compared to 2023, 5 of them have a reduction in the tariff, while 2 marked no change in the tariff for this category of users.

In 2024 the greatest decrease in the tariff for collection and discharge of urban wastewaters for the two categories of users are marked in JKP Komunalec Kichevo, -28.29% with households, and -33.77% with others.

The largest increase of the tariff for collection and discharge of urban wastewaters for both categories is noted by JP Vodovod i kanalizacija Struga by 79.43% for households and 89.29%.

From the data in the table, it can be noted that the lowest tariff for households is applied by the JKP Tetovo with 2.80 den/m³ from the Polog region, while the highest tariff is applied by the KJP Vodovod Kochani with 20.97 den/m³ from the Eastern region.

According to the data in the table, it can be noted that the lowest tariff for households is applied by the JKP Vrapchishte with 3.65 den/m³ from the Polog region, while the highest tariff is applied by the JP Vodovod i kanalizacija Struga with 29.70 den/m³ from the Eastern region.

7.4.3 TARIFFS FOR COLLECTION AND DISCHARGE OF URBAN WASTEWATERS IN AREAS WITH UNDER 10,000 EQUIVALENT RESIDENTS

The regulated period with established tariffs on collection and discharge (disposal) of urban wastewaters by water services providers in areas with less than 10,000 equivalent residents is in timeframe of three years, i.e., for the period between 2022-2024.

The Energy Regulatory Commission defines the range within which water service tariffs can vary, while, upon the proposal of water service providers, the final tariffs by user category are approved by the Council of the municipality in whose area the water service is provided.

The tariffs applied by water service providers supplying the collection and discharge (disposal) of urban waters for the suppliers to areas with under 10,000 equivalent residents in 2023 and 2024 are shown in Table 7.5.

Table 7.5 Tariffs on Collection and Discharge of Urban Wastewaters in areas with below than 10.000 equivalent residents for 2023 and 2024 (MKD/ m3)

No.	Water Service Provider- Collection and Discharge (disposal) of urban wastewaters in areas with below than 10.000 (equivalent) residents	Households			Other		
		2023	2024	2024/2023 (%)	2023	2024	2024/2023 (%)
1	JPKD Boshava Demir Kapija	8.00	7.70	-3.75%	14.19	14.50	2.18%
2	JKP Klepa Gradsko	5.13	5.50	7.21%	5.13	5.50	7.21%
3	JKP Topolka Chashka	7.00	5.47	-21.86%	7.00	7.00	0.00%
4	JKPD Rosoman	5.44	5.47	0.55%	9.75	9.81	0.62%

5	JP Kamena Reka Makedonska Kamenica	8.00	8.50	6.25%	11.00	11.00	0.00%
6	JPKD Bregalnica Delchevo	13.82	14.06	1.74%	23.09	22.92	-0.74%
7	JKP Obleshevo Cheshinovo Obleshevo	10.00	10.00	0.00%	10.00	10.00	0.00%
8	JP Plachkovica Karbinci	9.17	9.13	-0.44%	9.17	9.13	-0.44%
9	JKP Komunalec Pehchevo	13.34	13.53	1.42%	22.68	22.33	-1.54%
10	JKP Vodna Kula Zrnovci	6.00	6.00	0.00%	15.00	15.00	0.00%
11	JPKD Lozovo	6.50	6.50	0.00%	11.50	11.50	0.00%
12	JP Eremija Vevchani	7.00	7.00	0.00%	13.00	13.00	0.00%
13	JPKD Debrca	3.60	3.80	5.56%	5.60	5.80	3.57%
14	JP Vodovod i kanalizacija Makedonski Brod	8.00	7.50	-6.25%	16.00	15.00	-6.25%
15	JPKD Komunalec Polin Dojran	12.50	12.50	0.00%	24.50	23.50	-4.08%
16	JPKD Komuna Novo Selo	7.79	7.80	0.13%	15.58	15.60	0.13%
17	JKP Turija Vasilevo	3.52	3.62	2.84%	6.34	6.52	2.84%
18	JKP Komunalna Chistota Bogdanci	7.49	5.31	-29.11%	14.98	10.62	-29.11%
19	JP Komunalen Servic Valandovo	6.43	6.34	-1.40%	8.66	8.53	-1.50%
20	JPKD Lavavica Konche	4.69	4.69	0.00%	4.69	4.69	0.00%
21	JP Komuna Krushevo	1.94	1.88	-3.09%	1.94	1.88	-3.09%
22	JKP Komunalec Demir Hisar	6.00	6.00	0.00%	10.00	10.00	0.00%
23	JKP Pela Higiena Mogila	12.48	12.48	0.00%	12.48	12.48	0.00%
24	JP Pelagonija Krivogashtani	9.00	9.00	0.00%	9.00	9.00	0.00%
25	JP Komunalec Kriva Palanka	3.70	3.70	0.00%	4.40	4.40	0.00%
26	DKU Silkom Kratovo	7.76	6.29	-18.94%	7.76	6.29	-18.94%
27	JKP Chist Den Rankovce	4.58	4.47	-2.40%	4.58	4.47	-2.40%
28	JKP Skopska Crna Gora Chucher Sandevo	8.59	8.62	0.35%	21.49	21.55	0.28%
29	JKP Zelenikovo	6.21	6.21	0.00%	6.24	6.24	0.00%
30	JKP Petrovec	11.40	11.80	3.51%	16.00	17.00	6.25%

From the data in Table 7.5, it can be concluded that 10 out of 30 water service providers - collection and discharge of urban wastewaters in 2024 have an increase in the household tariff in 2024 compared to 2023, while nine of these water service providers marked decrease, and there are no changes with 11 other providers for the category of households.

In the category of other users, 8 water service providers - collection and discharge of urban wastewaters in 2024 have an increase in the tariff compared to 2023, 10 of them have a reduction in the tariff, while 12 marked no change in the tariff for this category of users.

The largest decrease in the tariff for the collection and disposal of urban wastewater is recorded at JKP Komunalna Chistota Bogdanci, for both categories, where the tariff is reduced by -29.11%.

The largest increase in the tariff for the collection and disposal of urban wastewaters for the household category is recorded at JKP Klepa Gradsko, where the tariff increases by 7.21%, for both categories.

7.5 WASTEWATERS PURIFICATION (WASTEWATER TREATMENT)

7.5.1 GENERAL DATA

The water service of collection and discharge of urban wastewaters, in the territory of the Republic of North Macedonia, in areas with over 10.000 (equivalent) residents, is provided by 14 water service providers, covering partly or entirely the requirements of the further listed municipalities: Sveti Nikole, Berovo, Kochani, Struga, Kichevo, Gevgelija, Strumica, Radovish, Prilep, Bitola, Resen, Kumanovo, Skopje.

The water service of purification of urban wastewaters, in the territory of the Republic of North Macedonia, in areas with over 10.000 (equivalent) residents, is provided by 6 water service providers, covering partly or entirely the requirements of the further listed municipalities: Makedonski Brod, Dojran, Chucher Sandevo, Karbinci, Cheshinovo-Obleshevo, and Krivogashtani.

7.5.2 TARIFFS FOR PURIFICATION OF URBAN WASTEWATERS IN AREAS WITH OVER 10,000 EQUIVALENT RESIDENTS

The regulated period with established tariffs on purification of urban wastewaters by water services providers in areas with more than 10,000 equivalent residents is in timeframe of three years, i.e., for the period between 2024-2026.

The Energy Regulatory Commission defines the range within which water service tariffs can vary, while, upon the proposal of water service providers, the final tariffs by user category are approved by the Council of the municipality in whose area the water service is provided.

The tariffs applied by water service providers supplying the purification of urban wastewaters for the suppliers to areas with under 10,000 equivalent residents in 2023 and 2024 are shown in Table 7.6.

Table 7.6 Tariffs on wastewaters purification in areas with over 10.000 equivalent residents for 2023 and 2024 (MKD/m3)

No.	Provider of wastewaters purification (wastewaters treatment) to areas with over 10.000 equivalent residents	Households			Other		
		2023	2024	2024/2023 (%)	2023	2024	2024/2023 (%)
1	JKP Komunalec Sveti Nikole	2.50	6.00	140.00%	3.00	7.50	150.00%
2	JPKR Usluga Berovo	17.92	20.57	14.79%	17.92	20.57	14.79%
3	KJP Vodovod Kochani	15.17	17.61	16.08%	15.17	17.61	16.08%
4	JP Kolektorski sistem Skopje	22.19	19.12	-13.84%	35.50	30.59	-13.84%
5	JKP Komunalec Kichevo	4.70	13.16	180.00%	5.73	15.92	177.84%
6	JKPD Komunalec Gevgelija	8.50	9.25	8.82%	19.12	20.52	7.32%
7	JKP Komunalec Strumica	10.50	10.70	1.90%	20.60	20.75	0.73%

8	JKP Plavaja Radovish	15.13	17.30	14.34%	27.38	29.40	7.38%
9	JKP Niskogradba Bitola	2.96	5.00	68.92%	3.79	6.75	78.10%
10	JKP Vodovod i kanalizacija Prilep	17.24	17.24	0.00%	17.24	17.24	0.00%
11	JKP Proleter Resen	11.97	19.20	60.40%	16.14	22.30	38.17%
12	JP Vodovod Kumanovo	13.50	19.00	40.74%	13.50	19.00	40.74%
13	JP Vodovod i kanalizacija Skopje	0.87	0.87	0.00%	0.87	0.87	0.00%
14	JKP Vodovod Ilinden	8.17	9.02	10.40%	15.05	16.69	10.90%

From the data in Table 7.6, it can be concluded that 11 out of 14 water service providers - purification of wastewaters have an increase in the household tariff in 2024 compared to 2023, while one of them marked decrease, and there are no changes with the other two providers.

In the category of other users, 11 water service providers - purification of wastewaters in 2024 have an increase in the tariff compared to 2023, 1 of them has a reduction in the tariff, while 2 marked no change in the tariff for this category of users.

The only decrease of the tariff for purification of the wastewaters for both categories of users is marked with JP Kolektorski sistem Skopje, -13.83 with both categories.

The largest increase of the tariff for purification for both categories is noted by JKP Komunalec Kichevo in the amount of 180% for households and 177.84% for the others.

According to the data in the table, it can be noted that the lowest tariff for households is applied by the JP Vodovod i kanalizacija Skopje with 0.87 den/m³ from the Skopje region, while the highest tariff is applied by the JPKR Usluga Berovo with 20.57 den/m³ from the South-West region.

7.5.3 TARIFFS FOR PURIFICATION OF WASTEWATERS IN AREAS WITH UNDER 10,000 EQUIVALENT RESIDENTS

The regulated period for which tariffs are established on purification of urban wastewaters by water services providers in areas with under 10,000 equivalent residents is in timeframe of three years, i.e., for the period between 2022-2024.

The Energy Regulatory Commission defines the range within which water service tariffs can vary, while, upon the proposal of water service providers, the final tariffs by user category are approved by the Council of the municipality in whose area the water service is provided.

The tariffs applied by water service providers for purification of wastewaters for the suppliers to areas with under 10,000 equivalent residents in 2023 and 2024 are shown in Table 7.7.

Table 7.7 Tariffs on wastewaters purification in areas with below 10.000 equivalent residents for 2023 and 2024 (MKD/ m3)

No.	Water Service Provider Wastewater purification in areas with below 10.000 (equivalent) residents	Households			Other		
		2023	2024	2024/2023 (%)	2023	2024	2024/2023 (%)
1	JKP Obleshevo Cheshinovo Obleshevo	2.60	2.60	0.0%	2.60	2.60	0.00%
2	JP Plachkovica Karbinci	9.04	9.03	-0.1%	9.04	9.03	-0.1%
3	JP Vodovod i kanalizacija Makedonski Brod	14	15	7.1%	27	29	7.4%
4	JPKD Komunalec Polin Dojran	5.12	4.5	-12.1%	5.12	4.5	-12.1%
5	JP Pelagonija Krivogashtani	8	8	0.0%	8	8	0.0%
6	JKP Skopska Crna Gora Chucher Sandevo	10.9	10.91	0.1%	25.09	25.09	0.1%

From the data in Table 7.7, it can be concluded that 2 out of 6 water service providers - purification of wastewaters have an increase in the household tariff and other users in 2024 compared to 2023, while two of them marked decrease, and there are no changes with the other two providers for both categories of users.

Decrease of the tariff for purification of wastewaters for households is marked with JP Plachkovica Karbinci, -0.1% and with JPKD Komunalec Polin Dojran of -12.1%.

The largest increase in the wastewater treatment tariff for both categories is recorded in the area where the service is provided by the JP Vodovod i kanalizacija Makedonski Brod, by 7.1% for households, while in the other category, the tariff increases by 7.4%.

7.6 KEY INDICATORS FOR SUCCESS AND GOALS TO BE ACHIEVED BY THE WATER SERVICE PROVIDER

Pursuant to Article 22 of the Methodology for Setting Water Service Tariffs („Official Gazette of North Macedonia“ no. 63/17) water service providers submit filled in lists of key indicators of success and a list of indicators of success to the Energy Regulatory Commission, in order to assess them and to determine their compliance with the targets which must be achieved by water service providers. After completing the first regulated period, based on the proposal of water service providers, the Energy Regulatory Commission has approved targets which must be achieved by the water service provider, which derive from key indicators for success for each water service separately. In line with approved targets for achievement and in line with the received data from annual reports referring to water service providers, for 2023 several indicators for success are comprised, through which data are collected referring to the performance of water service providers.

7.6.1 COVERAGE WITH WATER SERVICE

The indicator for coverage with water service displays the percentage of the population which has access to water services (with direct service connection). The data

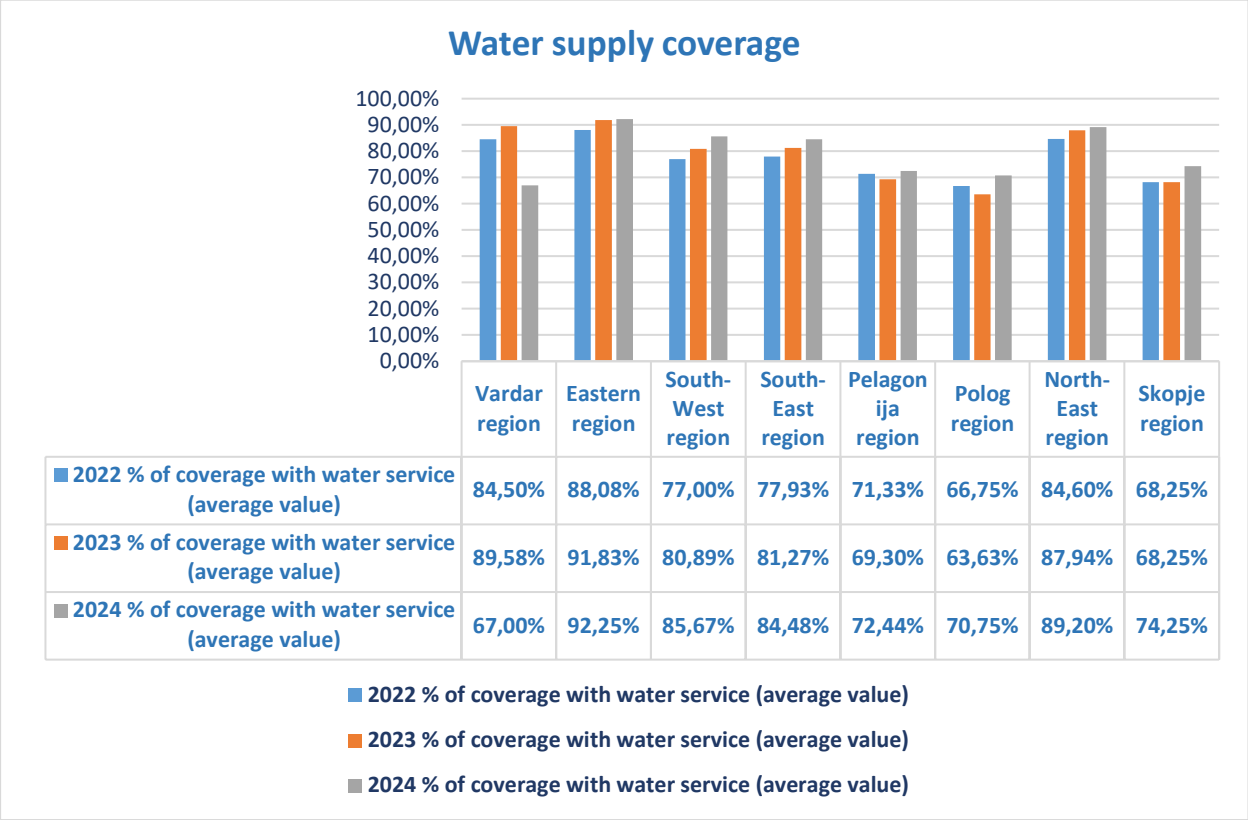
below are provided based on water services provided by water service providers and based on the regional distribution adequately for each service and for each region separately.

7.6.1.1 COVERAGE WITH WATER SUPPLY

In 2024, the percentage of coverage with water supply indicates increase in the Southwest, Southeast, Northeast, East, the Pelagonija region, the Polog region and the Skopje region in relation to 2023.

In the Vardar Region the percentage of coverage with water supply in 2024 compared to 2023 is decreasing.

The chart below provides an overview of the percentage of coverage with water supply in 2024 compared to 2022 and 2023.



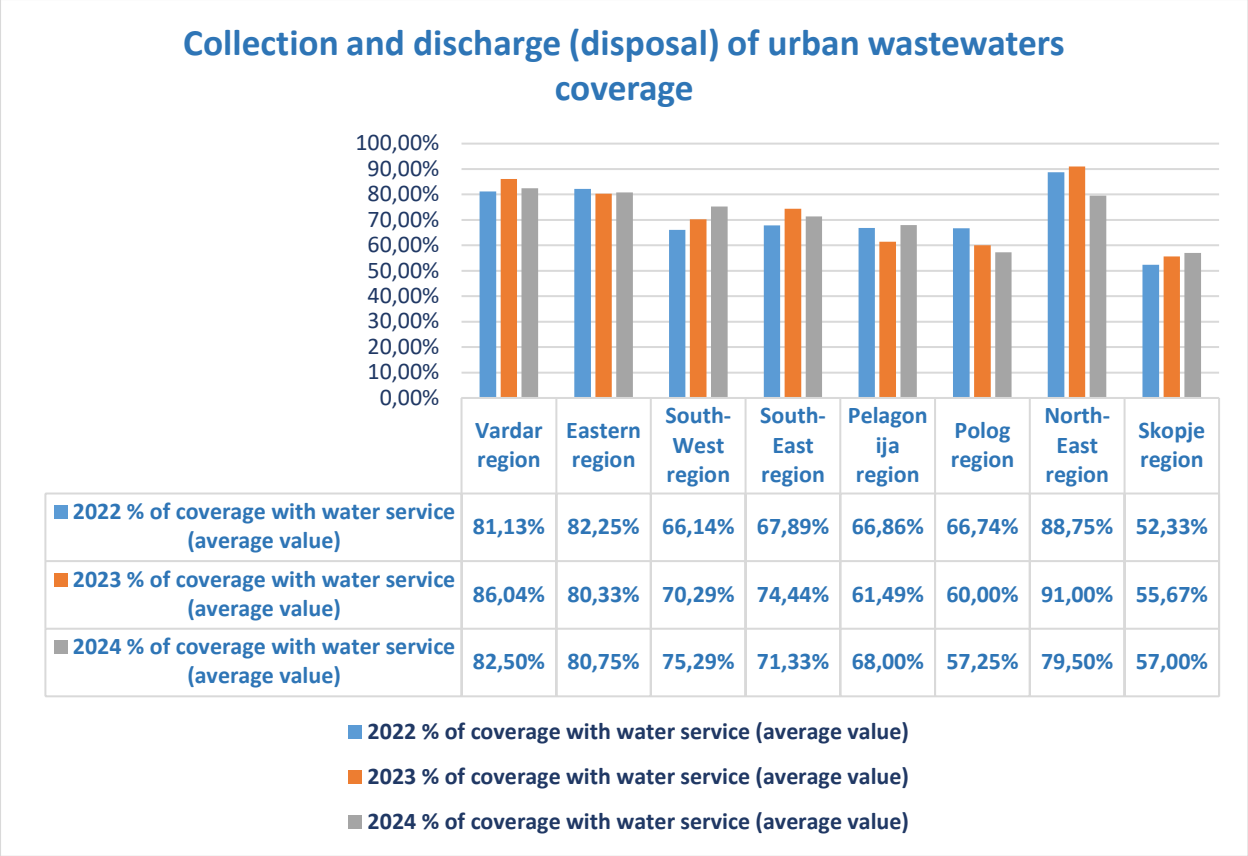
	Vardar region	Eastern region	South-West region	South-East region	Pelagonija region	Polog region	North-East region	Skopje region
2022 % of coverage with water service (average value)	84,50%	88,08%	77,00%	77,93%	71,33%	66,75%	84,60%	68,25%
2023 % of coverage with water service (average value)	89,58%	91,83%	80,89%	81,27%	69,30%	63,63%	87,94%	68,25%
2024 % of coverage with water service (average value)	67,00%	92,25%	85,67%	84,48%	72,44%	70,75%	89,20%	74,25%

Chart 7.5. 1 Percentage of coverage with water supply

7.6.1.2 COVERAGE WITH COLLECTION AND DISCHARGE (DISPOSAL) OF URBAN WASTEWATERS

In 2024, the percentage of coverage with collection and discharge of urban wastewaters indicates increase in the East, Southwest, Pelagonija region and the Skopje region compared to 2023, whereas in the Vardar region, the Southeast, the Polog and the Northeast region, there is a slight decrease compared to 2023.

The chart below provides an overview of the percentage of coverage with water supply in 2024 compared to 2022 and 2023.



	Vardar region	Eastern region	South-West region	South-East region	Pelagonija region	Polog region	North-East region	Skopje region
2022 % of coverage with water service (average value)	81,13%	82,25%	66,14%	67,89%	66,86%	66,74%	88,75%	52,33%
2023 % of coverage with water service (average value)	86,04%	80,33%	70,29%	74,44%	61,49%	60,00%	91,00%	55,67%
2024 % of coverage with water service (average value)	82,50%	80,75%	75,29%	71,33%	68,00%	57,25%	79,50%	57,00%

Chart 7.5. 2 Percentage of coverage with the water service - collection and discharge of wastewaters

7.6.1.3 COVERAGE WITH PURIFICATION OF WASTEWATERS

In 2024, the percentage of coverage with purification of wastewaters indicates increase in the Vardar region, the Southwest, Pelagonija region and the Skopje region compared to 2023, whereas in the East, Southeast and Northeast region, there is a slight decrease compared to 2023.

The chart below provides an overview of the percentage of coverage with water service - purification of wastewaters in 2024 compared to 2022 and 2023.

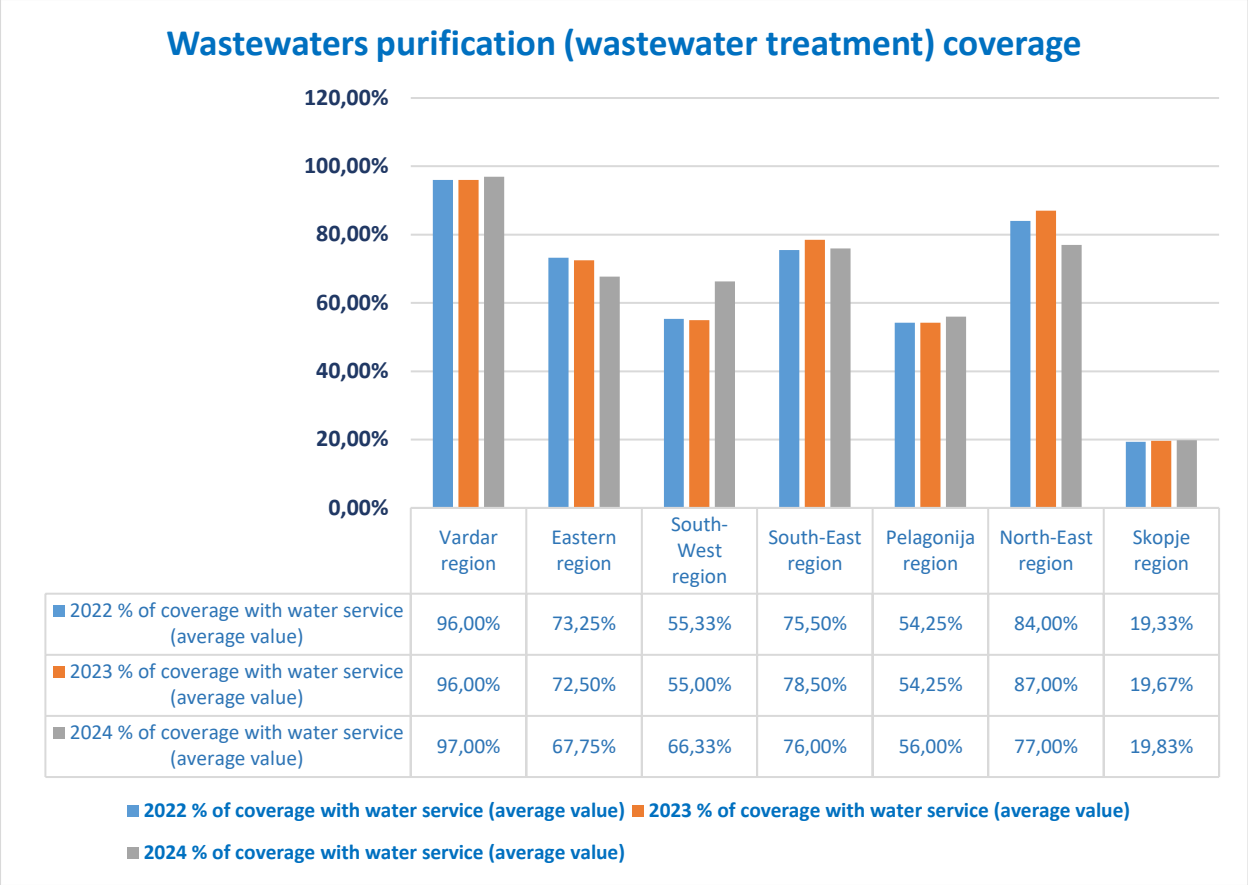


Chart 7.5. 3 Percentage of coverage with the water service - purification of wastewaters

7.6.2 NON-REVENUE WATER (%)

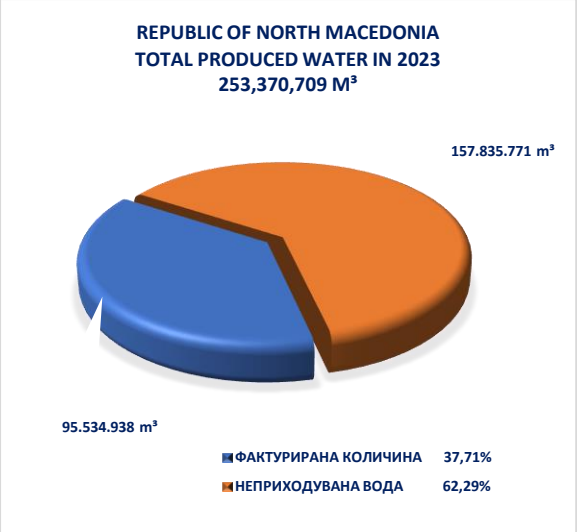
Non-revenue water is becoming even more important in the aspect of natural resource protection, and the enterprises are facing great losses of water. This problem has a direct impact upon the capacity of water service providers for financing new services, for carrying out adequate maintenance and investments in new technologies.

The percentage of non-revenue water in 2023 varies between 6% and 95%, depending on water service providers. According to the latest available data, the percentage of non–revenue water in 2024, on national level in the Republic of North Macedonia, is 63.21%.

Compared to the previous year, the quantity of water entering the water supply systems marks an increase by 6.87 %, while the percentage of invoiced water shows a decrease by 4.29% compared to the previous year.

The level of non-revenue water for water service providers for 2024, based on the last available data, compared to 2023 has increased by 0.92% and displays the real status of non-revenue water in the state based on current reports from enterprises.

Chart 7.64 below provides a comparison of the level of invoiced water and level of non-revenue water in 2024 compared to 2023.



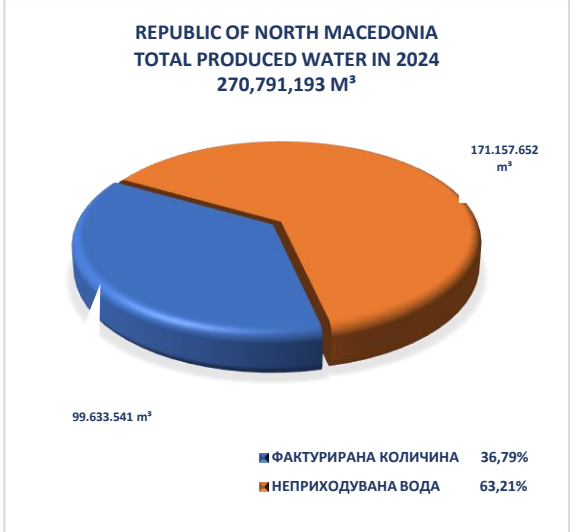


Chart 7.6.4 Comparison of the level of invoiced water and level of non-revenue water in 2023 compared to 2022

7.6.2.1 NON-REVENUE WATER BY REGIONS

VARDAR REGION

Based on the data of the Energy Regulatory Commission, Chart 7.6.5 gives an overview of the level of invoiced water and non-revenue water for 2024 for the Vardar Region.

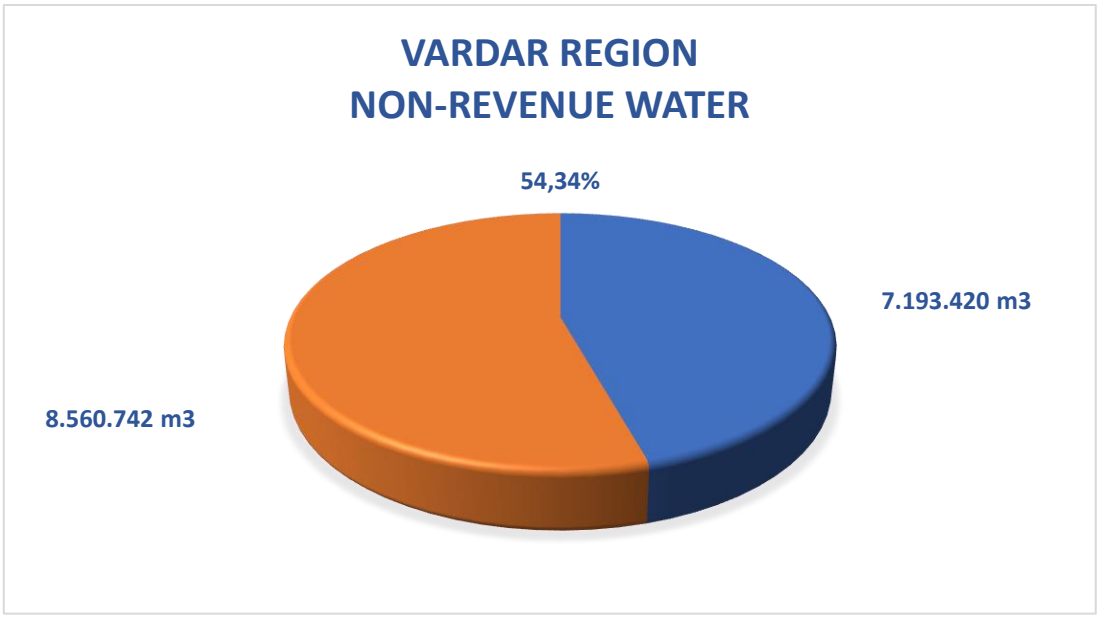


Chart 7.6.5 Comparison of the level of invoiced water and level of non-revenue water in the Vardar region.

EASTERN REGION

Based on the data of the Energy Regulatory Commission, Chart 7.6.6 gives an overview of the level of invoiced water and non-revenue water for 2024 for the East Region.

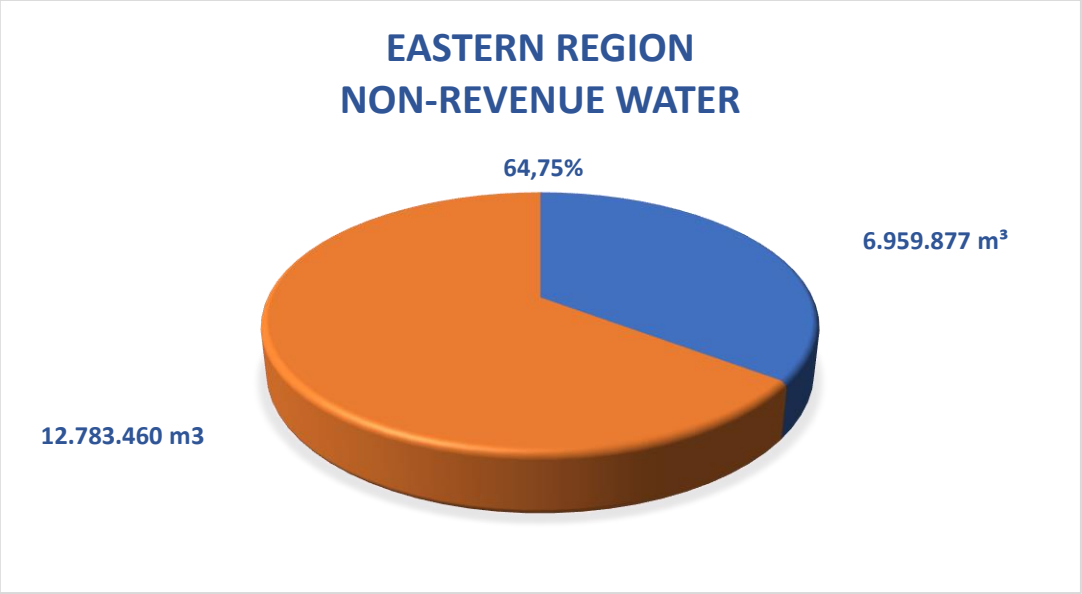


Chart 7.6.6 Comparison of the level of invoiced water and level of non-revenue water in the East Region

SOUTH-WEST REGION

Based on the data of the Energy Regulatory Commission, Chart 7.6.7 gives an overview of the level of invoiced water and non-revenue water for 2024 in the Southwest region.

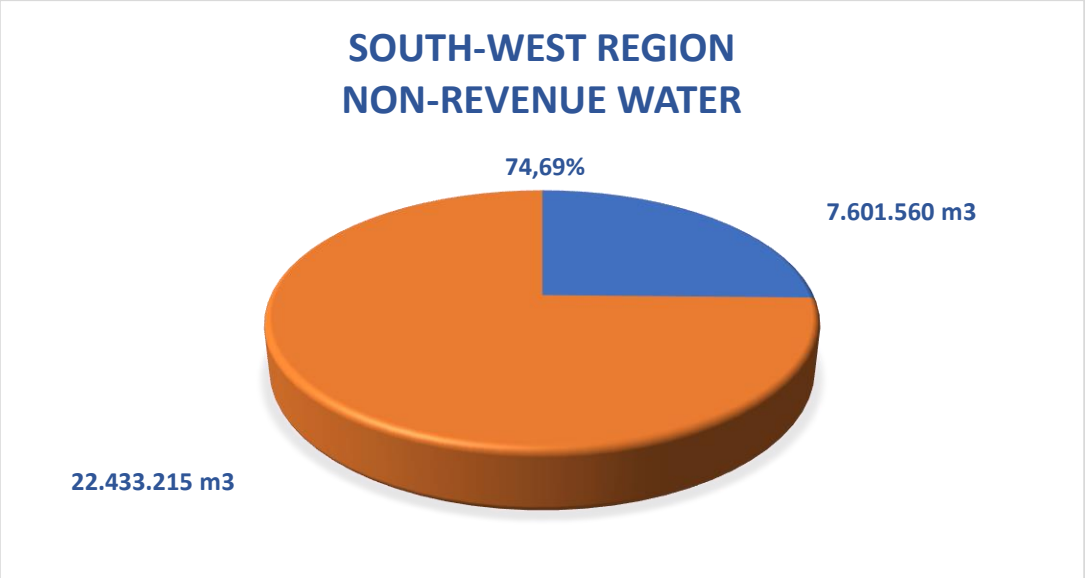


Chart 7.6.7 Comparison of the level of invoiced water and level of non-revenue water in the Southwest region.

SOUTH-EAST REGION

Based on the data of the Energy Regulatory Commission, Chart 7.6.8 gives an overview of the level of invoiced water and non-revenue water for 2024 for the Southeast Region.

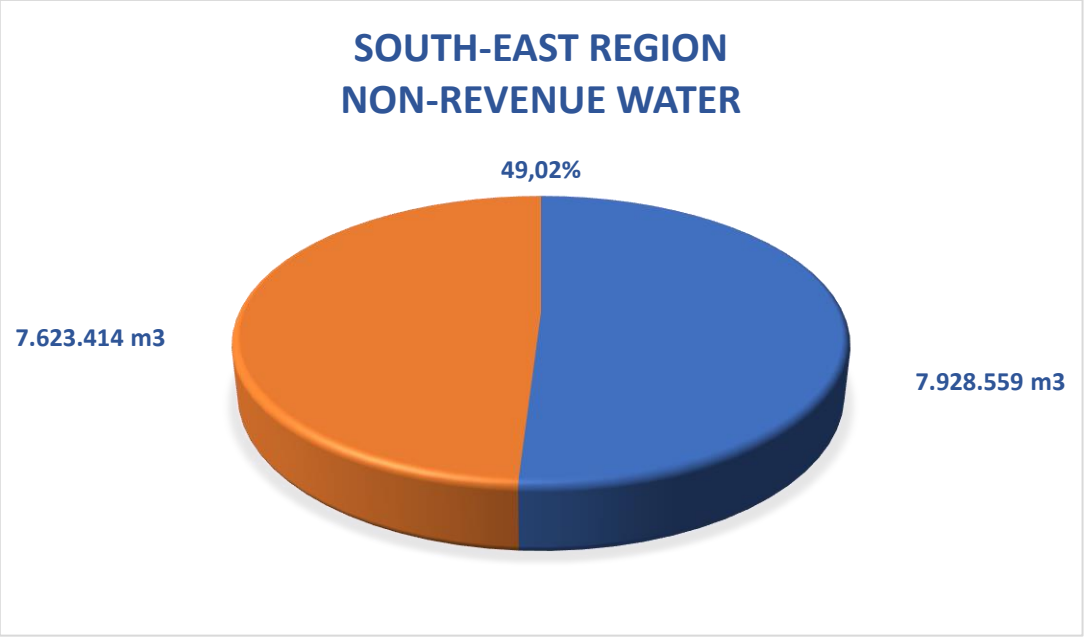


Chart 7.6.8 Comparison of the level of invoiced water and level of non-revenue water in the Southeast Region

PELAGONIJA REGION

Based on the data of the Energy Regulatory Commission, Chart 7.6.9 gives an overview of the level of invoiced water and non-revenue water for 2024 in the Pelagonija region.

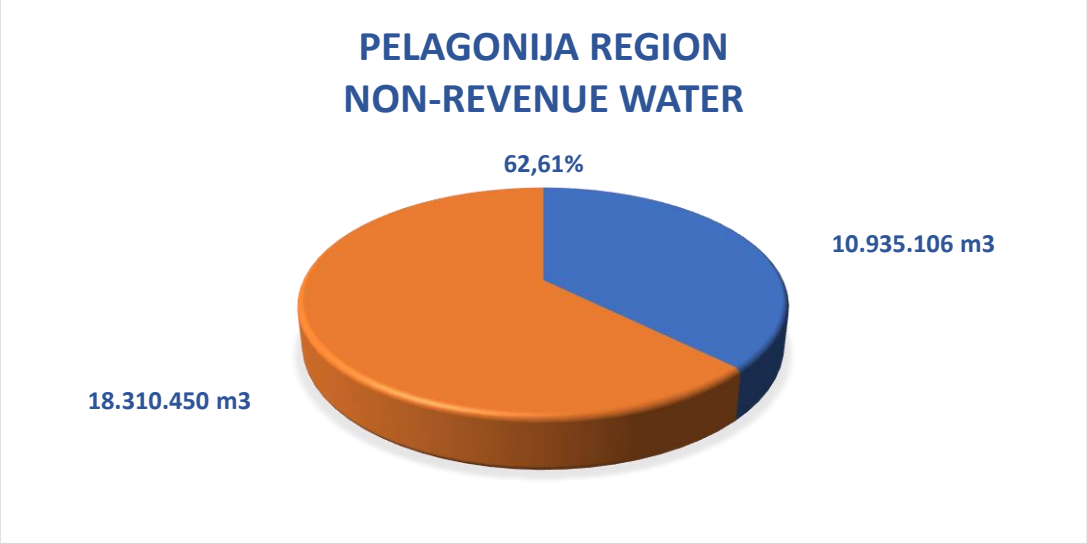


Chart 7.6.9 Comparison of the level of invoiced water and level of non-revenue water in the Pelagonija region.

POLOG REGION

Based on the data of the Energy Regulatory Commission, Chart 7.6.10 gives an overview of the level of invoiced water and non-revenue water for 2024 for the Pelagonija Region.

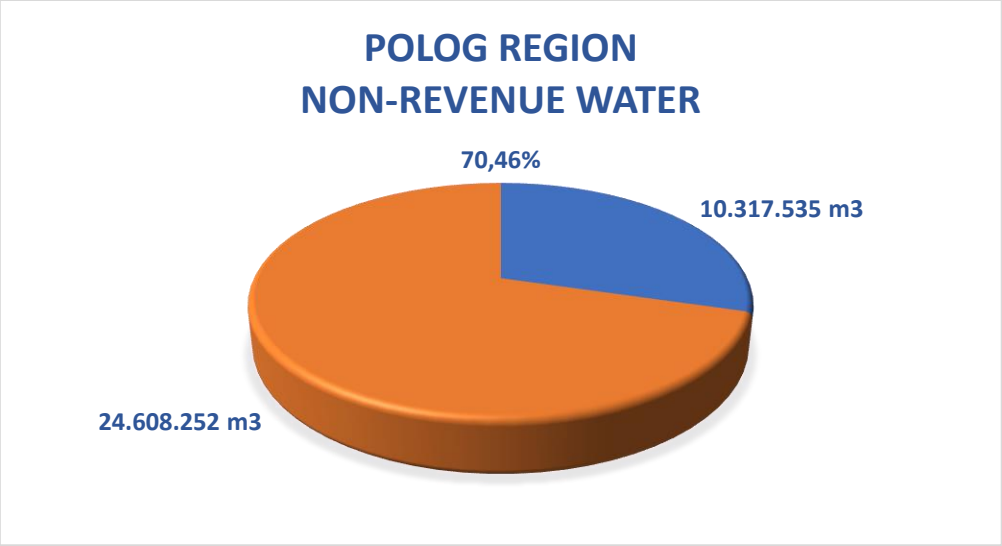


Chart 7.6.10 Comparison of the level of invoiced water and level of non-revenue water in the Pelagonija Region

NORTH-EAST REGION

Based on the data of the Energy Regulatory Commission, Chart 7.6.11 gives an overview of the level of invoiced water and non-revenue water for 2024 in the Northeast region.

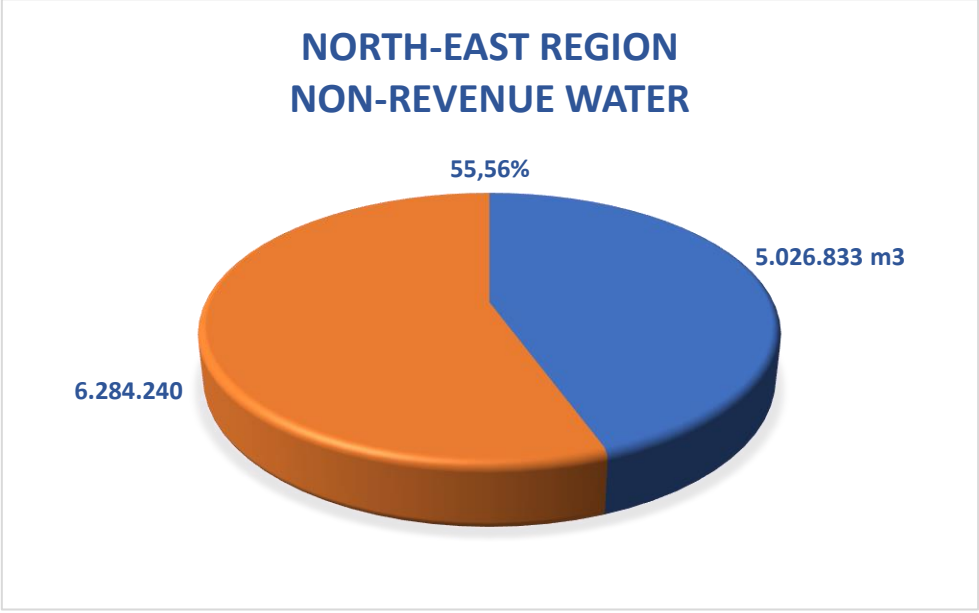


Chart 7.6.11 Comparison of the level of invoiced water and level of non-revenue water in the Northeast region.

SKOPJE REGION

Based on the data of the Energy Regulatory Commission, Chart 7.6.12 gives an overview of the level of invoiced water and non-revenue water for 2024 for the Skopje Region.

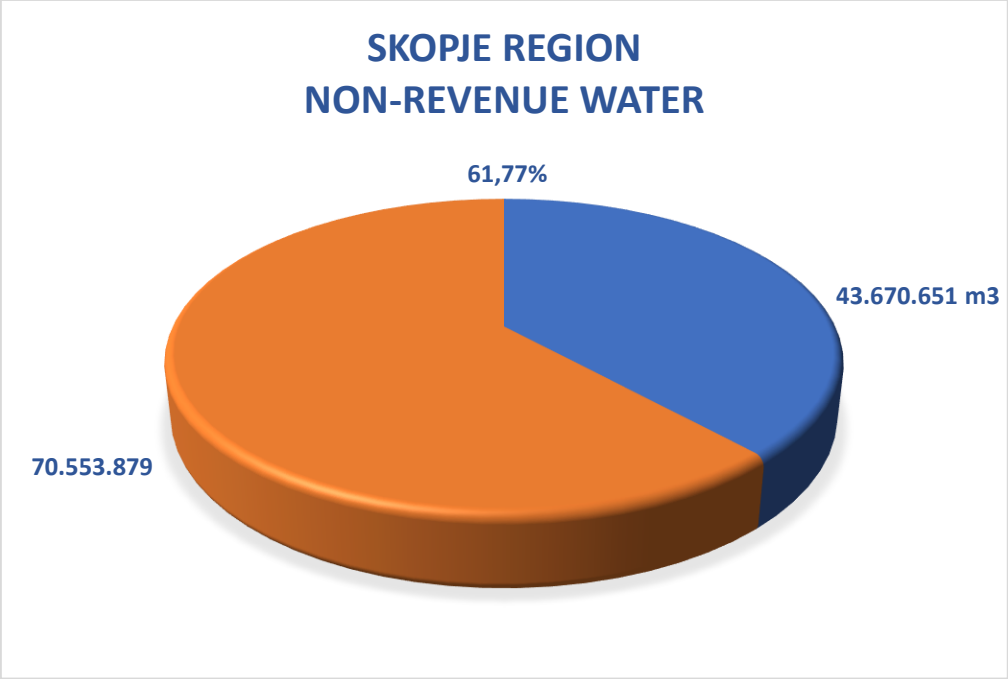


Chart 7.6.12 Comparison of the level of invoiced water and level of non-revenue water in the Skopje Region

7.6.3 WATER CONSUMPTION (m³/household/month)

The average water consumption for households in 2024 remains one of the key parameters in the work of water service providers and ranges on average between 3.15 and 27.86 m³/household/month, depending on the water service provider.

According to the latest available data, the average water consumption in 2024 at the level of the Republic of North Macedonia is 12.92 m³/household/month.

Chart 7.6.13 presents the average water consumption in 2024 in the Republic of North Macedonia.

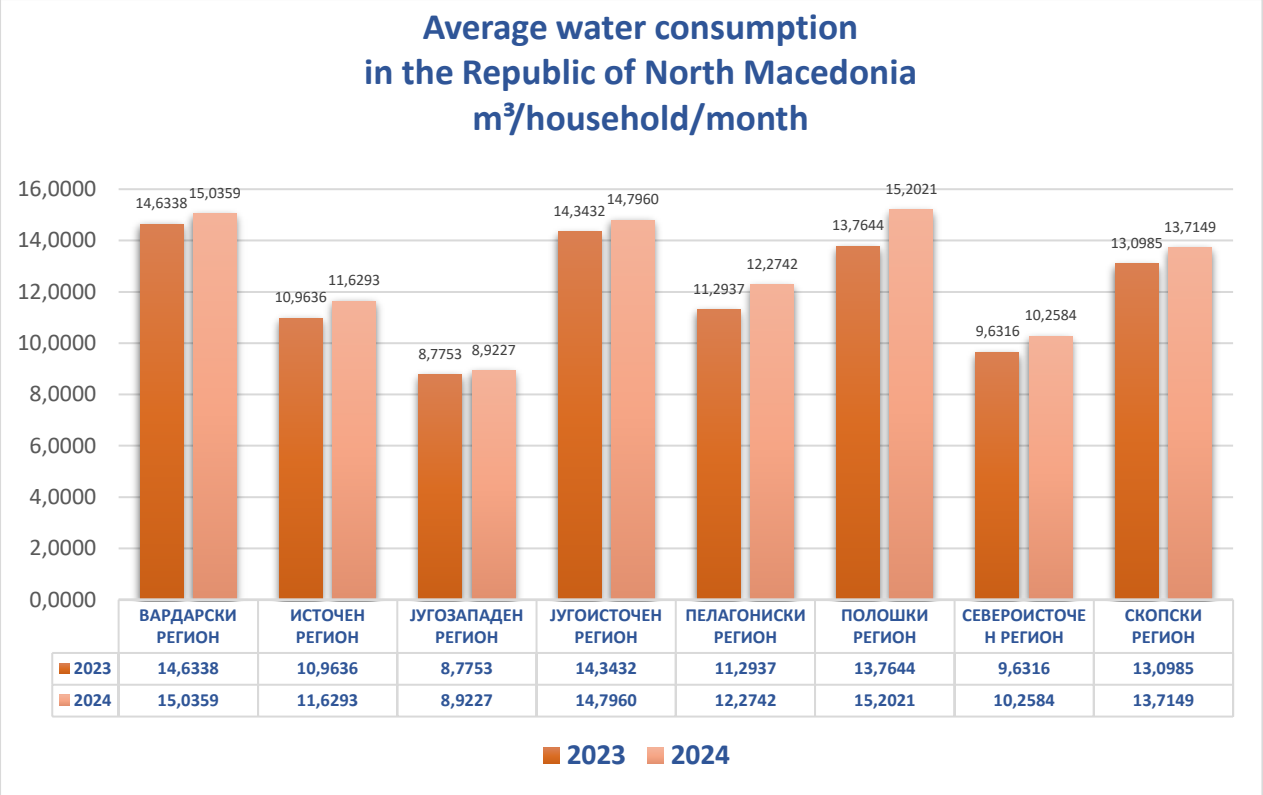


Chart 7.6.13 Overview of the average water consumption in the Republic of North Macedonia (m3/household/month)

7.6.3.1 CONSUMPTION OF WATER BY REGIONS

VARDAR REGION

Chart 7.6.14 presents the average water consumption in 2024 in the Vardar region.

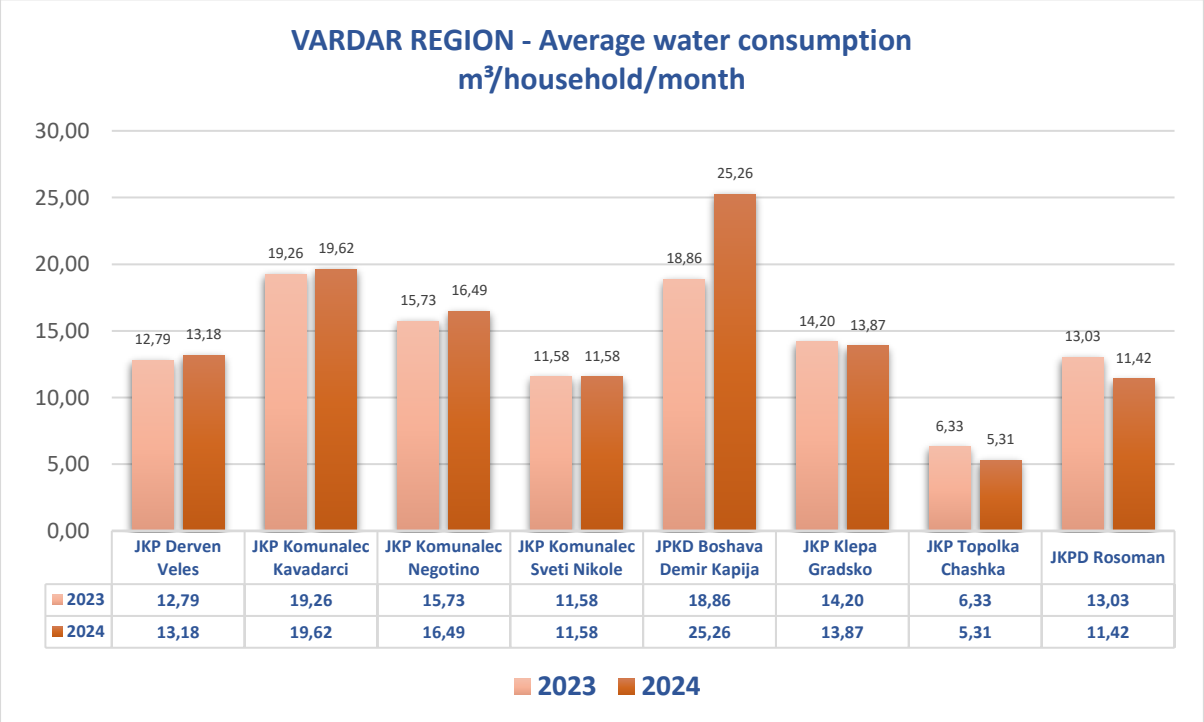


Chart 7.6.14 Overview of the average water consumption in 2024 in the Vardar region

EASTERN REGION

Chart 7.6.15 presents the average water consumption in 2024 in the Eastern region.

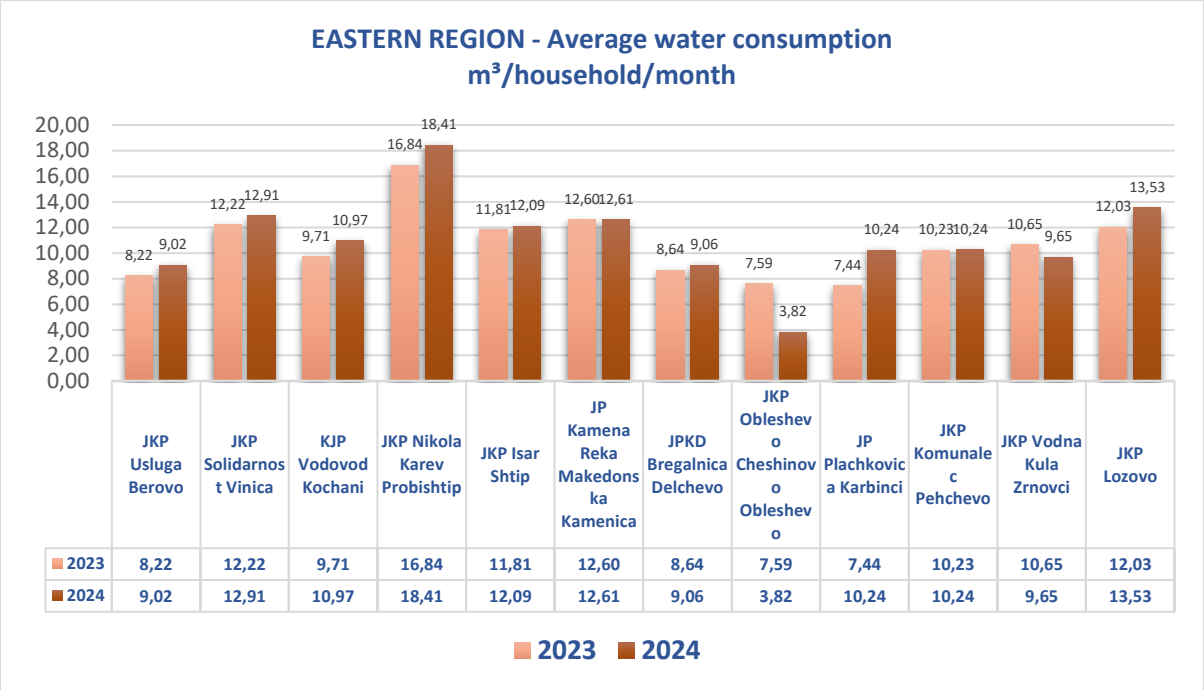


Chart 7.6.15 Overview of the average water consumption in 2024 in the Eastern region

SOUTH-WEST REGION

Chart 7.6.16 presents the average water consumption in 2024 in the Southwest region.

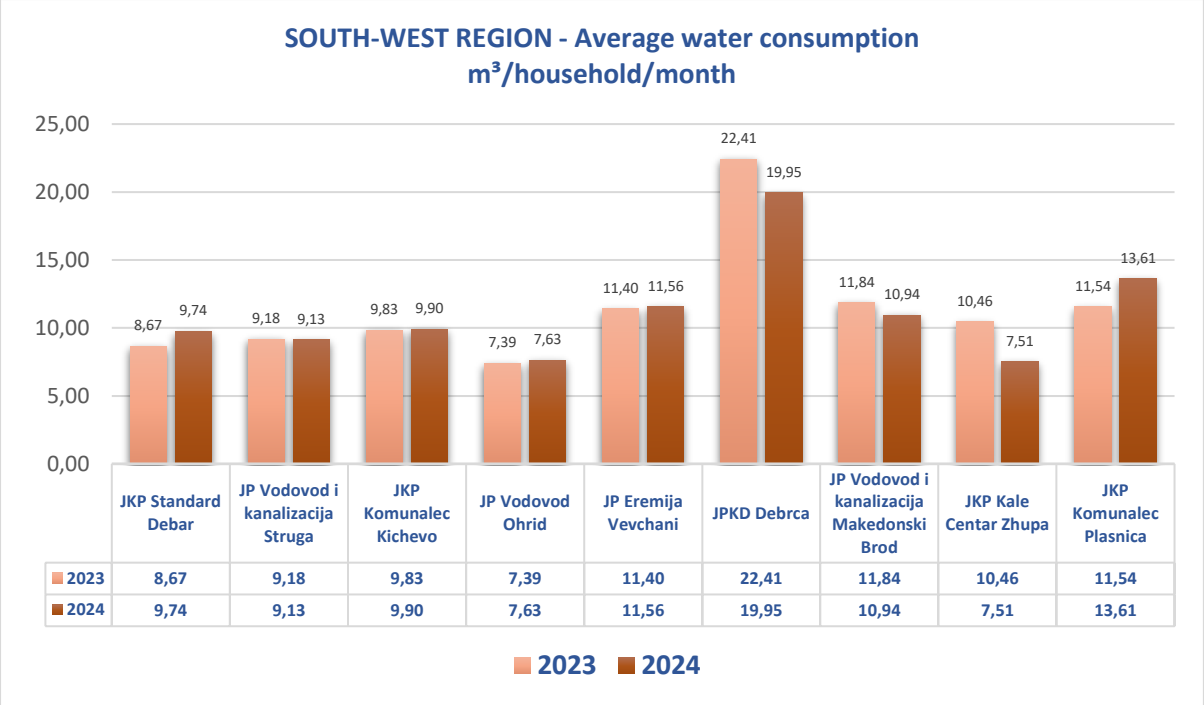


Chart 7.6.16 Overview of the average water consumption in 2024 in the Southwest region

SOUTH-EAST REGION

Chart 7.6.17 presents the average water consumption in 2024 in the Southeast region.

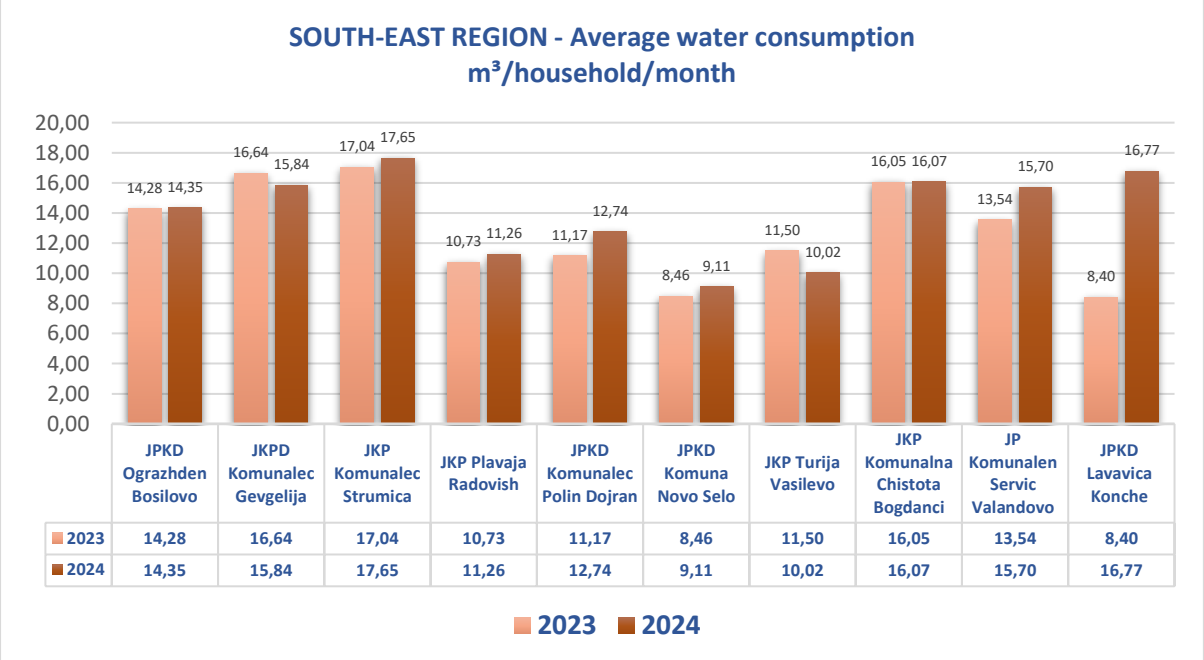


Chart 7.6.17 Overview of the average water consumption in 2024 in the Southeast region

PELAGONIJA REGION

Chart 7.6.18 presents the average water consumption in 2024 in the Pelagonija region.

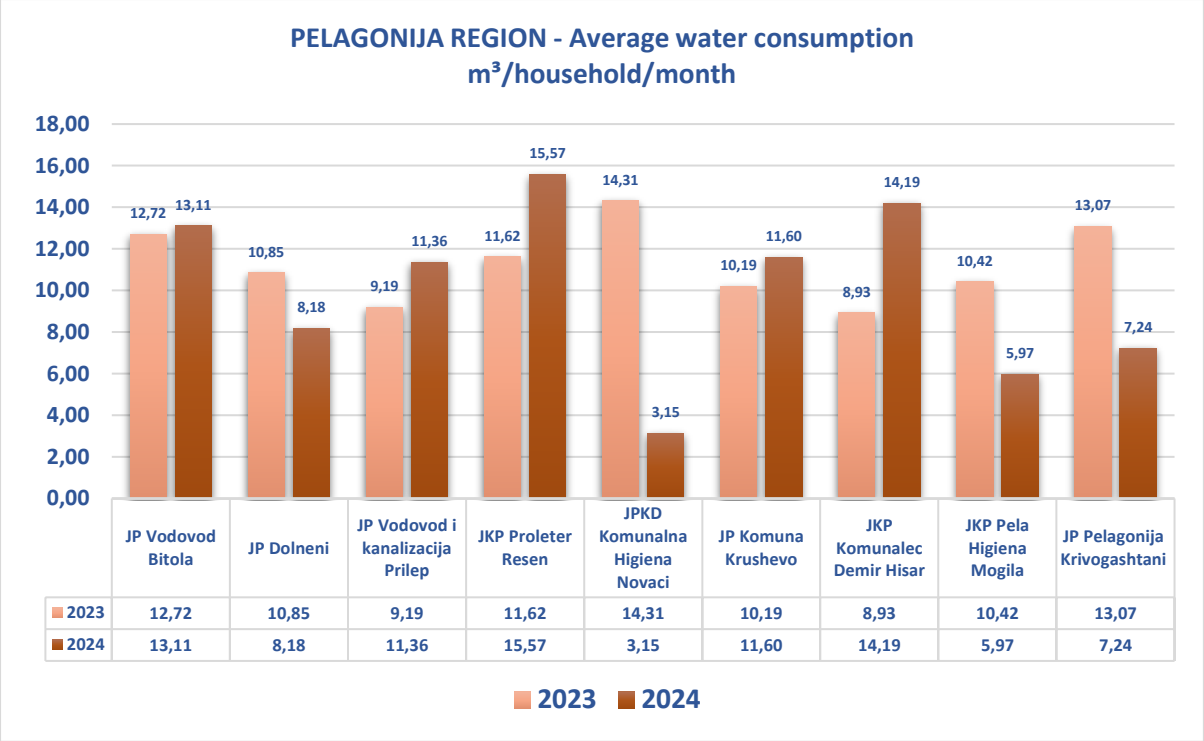


Chart 7.6.18 Overview of the average water consumption in 2024 in the Pelagonija region

POLOG REGION

Chart 7.6.19 presents the average water consumption in 2024 in the Polog region.

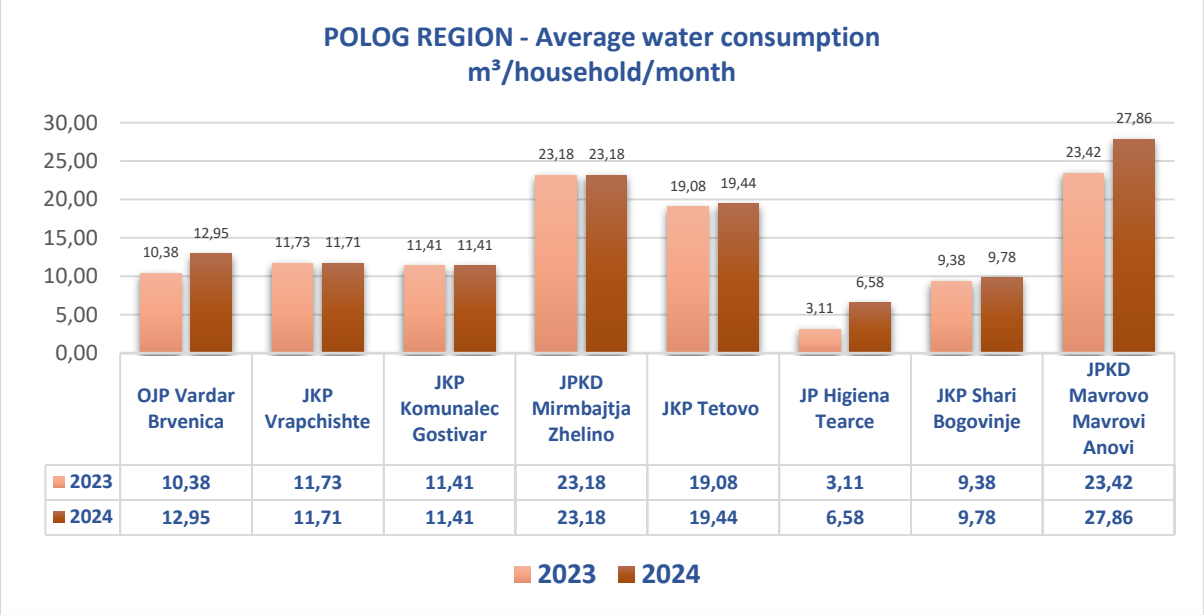


Chart 7.6.19 Overview of the average water consumption in 2024 in the Polog region

NORTH-EAST REGION

Chart 7.6.20 presents the average water consumption in 2024 in the Northeast region.

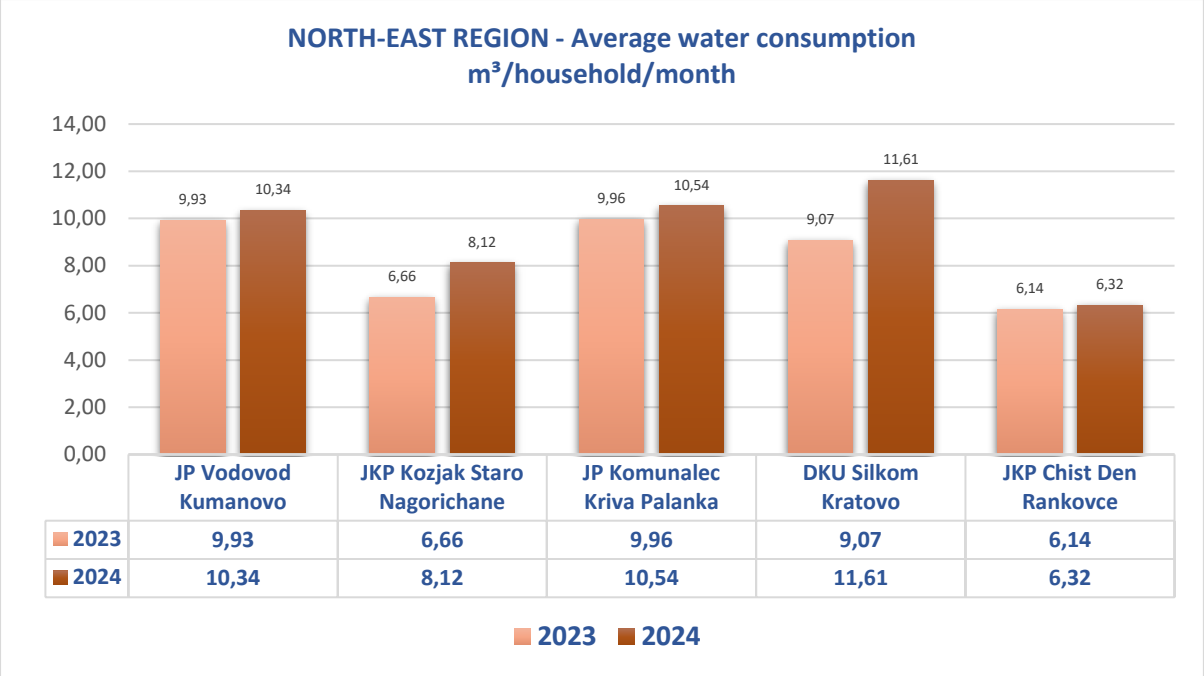


Chart 7.6.20 Overview of the average water consumption in 2024 in the Northeast region

SKOPJE REGION

Chart 7.6.21 presents the average water consumption in 2024 in the Skopje region.

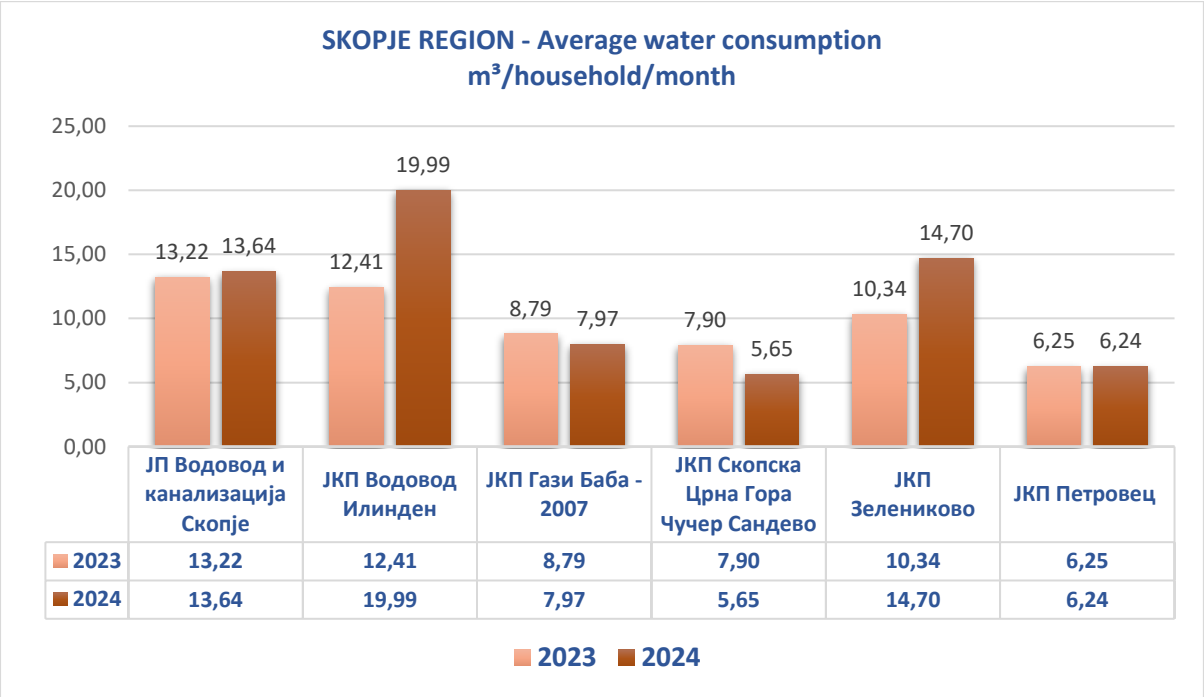


Chart 7.6.21 Overview of the average water consumption in 2024 in the Skopje region

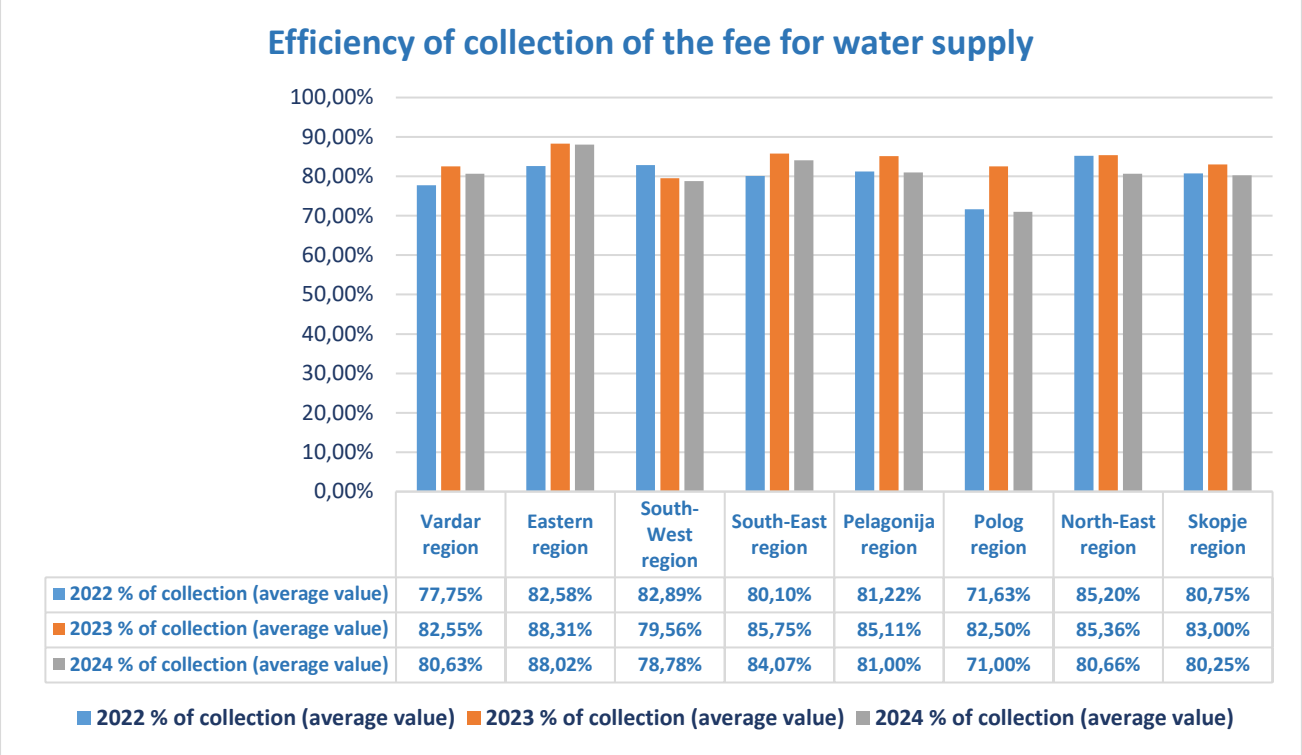
7.6.4 COLLECTION EFFICIENCY (%)

The indicator for efficiency of charge displays the percentage of share for certain water service for water service providers in 2024. The data below are provided based on water services provided by water service providers and based on the regional distribution adequately for each service and for each region separately.

7.6.4.1 EFFICIENCY OF CHARGE FOR WATER SUPPLY

In 2024, the efficiency of collection of the fee for water supply indicates decrease with all regions compared to 2023.

The chart below provides an overview of the percentage of coverage with water supply in 2024 compared to 2022 and 2023.



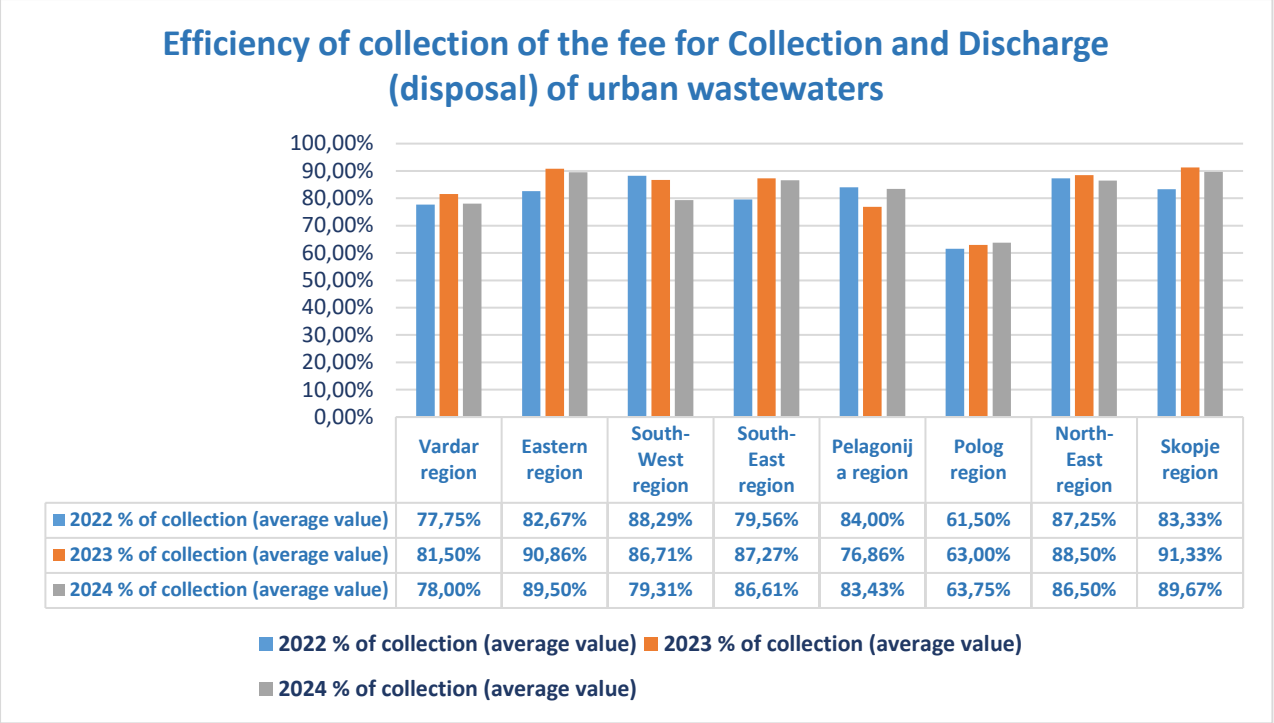
	Vardar region	Eastern region	South-West region	South-East region	Pelagonija region	Polog region	North-East region	Skopje region
2022 % of collection (average value)	77,75%	82,58%	82,89%	80,10%	81,22%	71,63%	85,20%	80,75%
2023 % of collection (average value)	82,55%	88,31%	79,56%	85,75%	85,11%	82,50%	85,36%	83,00%
2024 % of collection (average value)	80,63%	88,02%	78,78%	84,07%	81,00%	71,00%	80,66%	80,25%

Chart 7.6.22 Efficiency of collection of the fee for water supply

7.6.4.2 COLLECTION EFFICIENCY FOR COLLECTION AND DISCHARGE (DISPOSAL) OF URBAN WASTEWATERS

In 2024, the efficiency of charge for collection and discharge of urban wastewaters indicates increase in the Polog and Pelagonija regions, whereas in the Vardar, Southeastern, Southwestern, Northeastern, Eastern and Skopje region, decrease compared to 2023.

The chart below provides an overview of the efficiency of collection of the fee for the water service - collection and discharge of urban wastewaters in 2024 compared to 2022 and 2023.



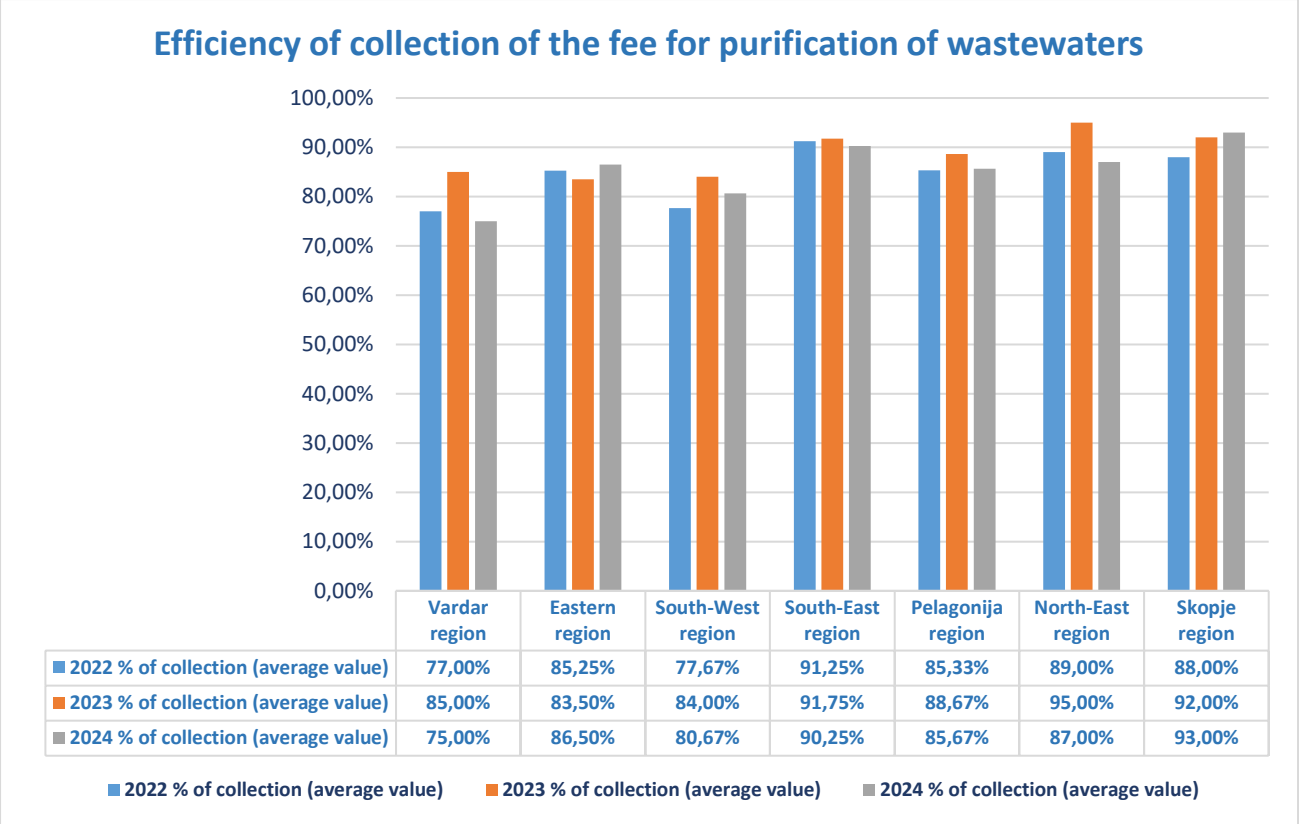
	Vardar region	Eastern region	South-West region	South-East region	Pelagonija region	Polog region	North-East region	Skopje region
2022 % of collection (average value)	77,75%	82,67%	88,29%	79,56%	84,00%	61,50%	87,25%	83,33%
2023 % of collection (average value)	81,50%	90,86%	86,71%	87,27%	76,86%	63,00%	88,50%	91,33%
2024 % of collection (average value)	78,00%	89,50%	79,31%	86,61%	83,43%	63,75%	86,50%	89,67%

Chart 7.5.23 Efficiency of collection of water service fee for collection and discharge of wastewaters

7.6.4.3 EFFICIENCY OF CHARGE FOR WATER PURIFICATION

In 2024, the efficiency of charge for purification of urban wastewaters indicates increase in the Eastern and Skopje region, whereas in the Vardar, Southeastern, Southwestern, Northeastern, Southwestern and Pelagonija there is decrease compared to 2023.

The chart below provides an overview of the percentage of coverage with water service - purification of wastewaters in 2024 compared to 2022 and 2023.



	Vardar region	Eastern region	South-West region	South-East region	Pelagonija region	North-East region	Skopje region
2022 % of collection (average value)	77,00%	85,25%	77,67%	91,25%	85,33%	89,00%	88,00%
2023 % of collection (average value)	85,00%	83,50%	84,00%	91,75%	88,67%	95,00%	92,00%
2024 % of collection (average value)	75,00%	86,50%	80,67%	90,25%	85,67%	87,00%	93,00%

Chart 7.5.24 Efficiency of collection of water service fee for purification of wastewaters

7.6.5 NUMBER OF EMPLOYEES (No./1000 CONNECTIONS)

The indicator of the number of employees provides the number of employees that contribute to a particular water service in relation to 1000 connections.

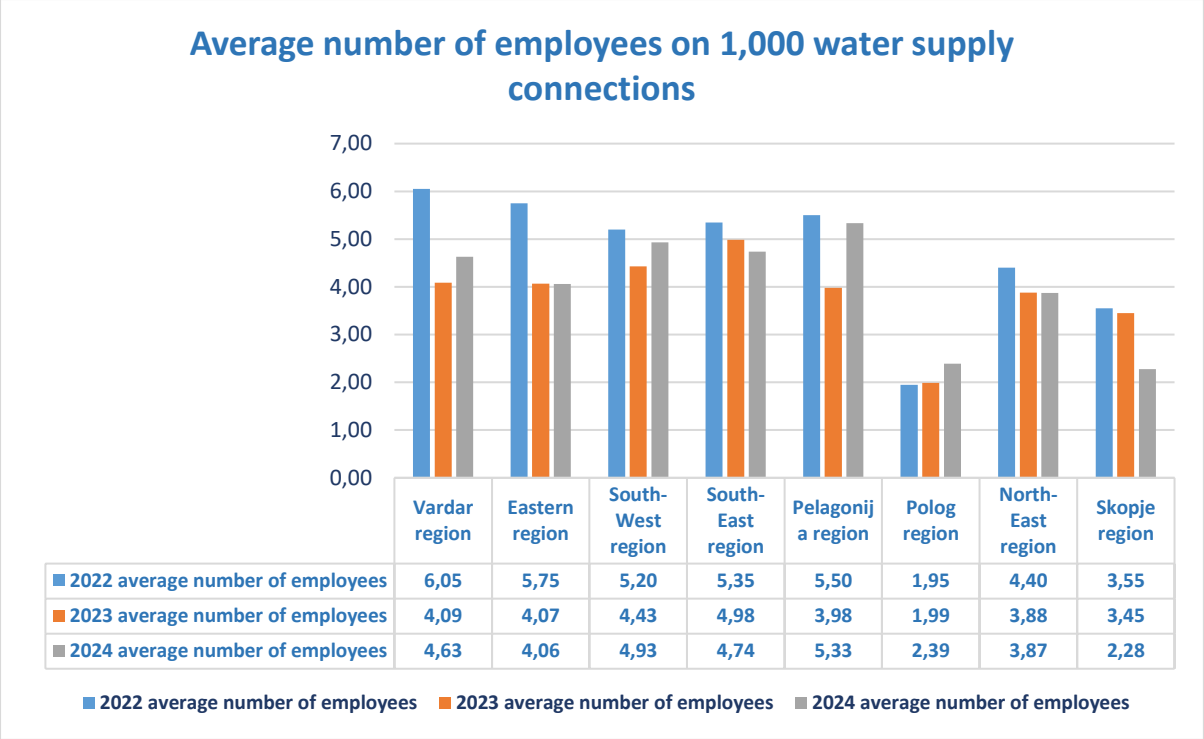
In line with the data received via the water service platform, we provide an analysis of the indicator of success which indicates the number of employees per 1000 connections. These data are part of annual reports submitted by water service providers in line with the Law on Setting Prices for Water Services.

The data below are provided for three years (2022, 2023, and 2024) for water services and regional distribution, adequately for each service and for each region separately.

7.6.5.1 NUMBER OF EMPLOYEES FOR WATER SUPPLY

In 2024, the number of employees for water supply indicates increase in the Vardar, Pelagonija, Southwest and Polog region, compared to the results achieved in 2023. Other regions register a decrease of the number of employees per 1000 connections in relation to 2023.

The chart below provides an overview of the number of employees in relation to 1000 connections for the water service referring to water supply in 2024 compared to 2022 and 2023.



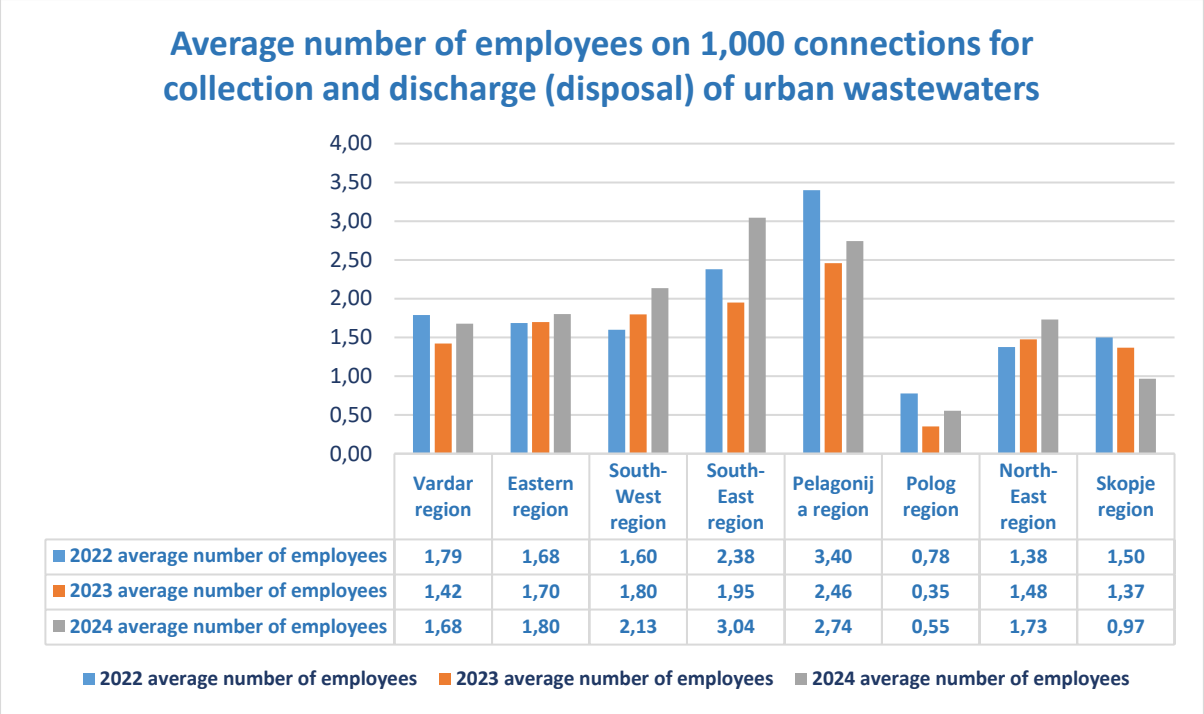
	Vardar region	Eastern region	South-West region	South-East region	Pelagonija region	Polog region	North-East region	Skopje region
2022 average number of employees	6,05	5,75	5,20	5,35	5,50	1,95	4,40	3,55
2023 average number of employees	4,09	4,07	4,43	4,98	3,98	1,99	3,88	3,45
2024 average number of employees	4,63	4,06	4,93	4,74	5,33	2,39	3,87	2,28

Chart 7.6.25 Number of employees per 1000 connections for the water service referring to water supply

7.6.5.2 NUMBER OF EMPLOYEES FOR DISPOSAL OF WASTEWATERS

In 2024, the number of employees for disposal of wastewaters indicates decrease in the Skopje region, compared to the indicators of 2023, whereas the remaining regions show increase compared to 2023.

The chart below provides an overview of the number of employees according to 1000 connections for disposal of wastewaters in 2024 compared to 2022 and 2023.



	Vardar region	Eastern region	South-West region	South-East region	Pelagonija region	Polog region	North-East region	Skopje region
2022 average number of employees	1,79	1,68	1,60	2,38	3,40	0,78	1,38	1,50
2023 average number of employees	1,42	1,70	1,80	1,95	2,46	0,35	1,48	1,37
2024 average number of employees	1,68	1,80	2,13	3,04	2,74	0,55	1,73	0,97

Chart 7.5.26 Efficiency of employees/1000 connections for the water service fee for collection and discharge of urban wastewaters

7.6.5.3 NUMBER OF EMPLOYEES FOR PURIFICATION OF WASTEWATERS

The number of employees for the water service purification of wastewaters 2024 in the Vardar, Pelagonija, Northeastern and Skopje region mark decrease compared to the indicators of 2023, whereas in the Eastern, Southeastern and Southwestern region compared to 2023 show increase of the number of employees/1000 connections.

The following chart below provides an overview of the number of employees according to 1000 connections for purification of wastewaters in 2024 compared to 2022 and 2023.

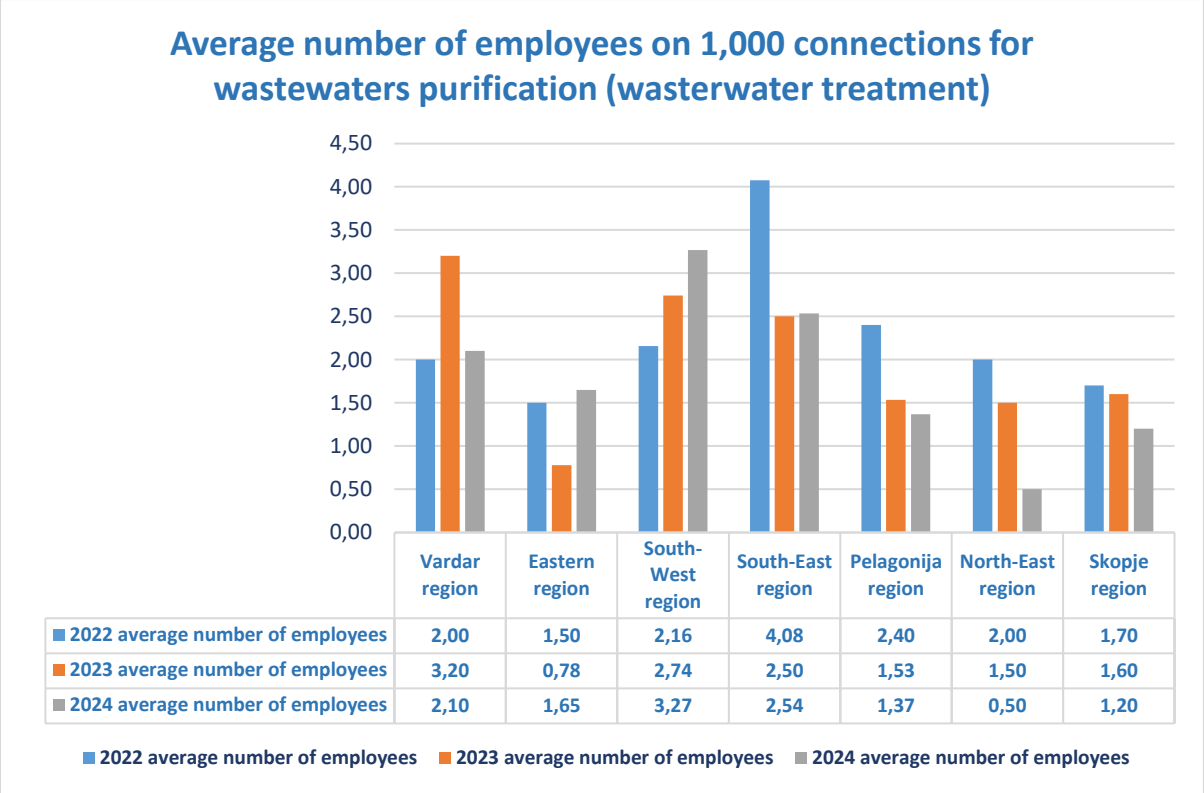


Chart 7.5.27 Efficiency of employees/1000 connections for the water service fee for collection and discharge of urban wastewaters

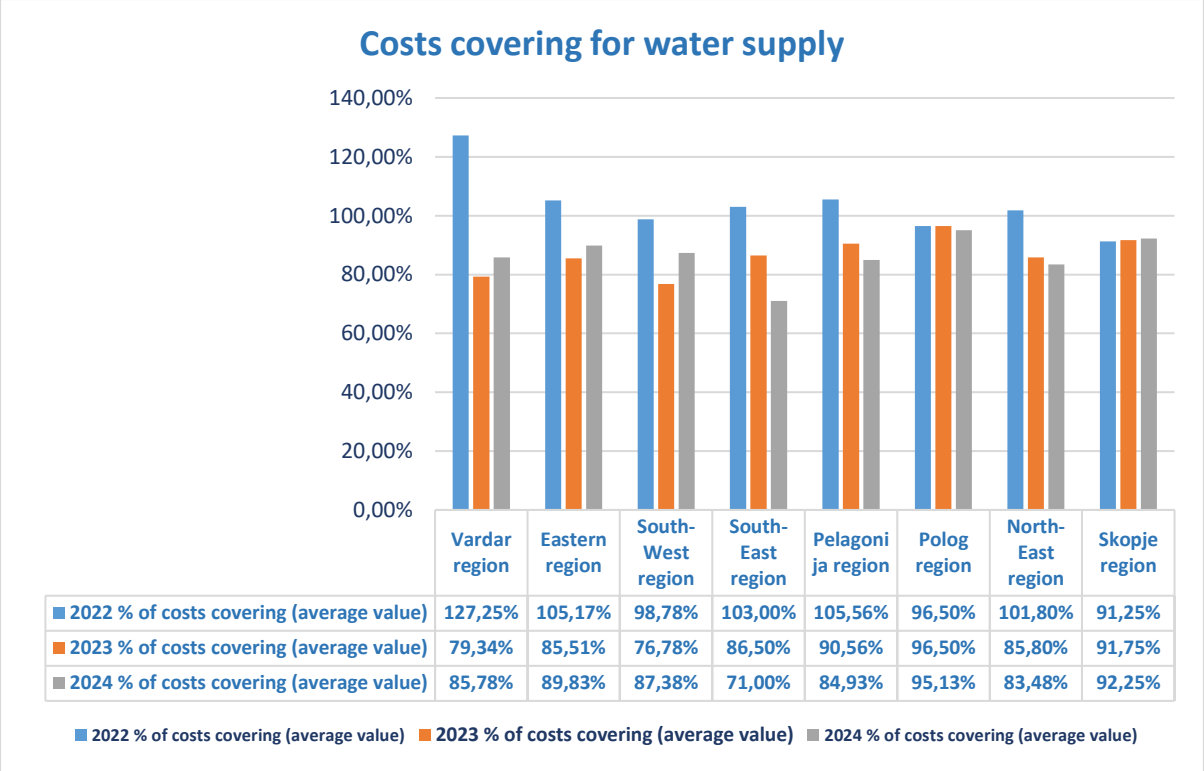
7.6.6 COVERAGE OF COSTS%

The indicator for coverage of costs shows the percentage of costs for the given water service for which the water service provider cover through the collected tariffs. Below is the data for each water service individually which are based on the regional allocation appropriately for each service and each region respectively.

7.6.6.1 COVERAGE OF COSTS FOR WATER SUPPLY

In line with the data owned by the Energy Regulatory Commission, the covering of costs for the water service referring to water supply in 2024, in the Pelagonija, Northeastern and Polog regions is in a lower level compared to 2022.

The chart below provides an overview of cost coverage for water supply in 2024 compared to 2022 and 2023.



	Vardar region	Eastern region	South-West region	South-East region	Pelagonija region	Polog region	North-East region	Skopje region
2022 % of costs covering (average value)	127,25%	105,17%	98,78%	103,00%	105,56%	96,50%	101,80%	91,25%
2023 % of costs covering (average value)	79,34%	85,51%	76,78%	86,50%	90,56%	96,50%	85,80%	91,75%
2024 % of costs covering (average value)	85,78%	89,83%	87,38%	71,00%	84,93%	95,13%	83,48%	92,25%

Chart 7.6.28 Efficiency of collection of the costs for water supply

7.6.6.2 COSTS COVERING FOR COLLECTION AND DISCHARGE (DISPOSAL) OF URBAN WASTEWATERS

In line with the data owned by the Energy Regulatory Commission, the coverage of costs for collection and disposal of urban wastewaters in 2024, except for the Polog region and Skopje region, is at a lower level compared to 2023.

The chart below provides an overview of the efficiency of costs covering for the water service - collection and discharge of urban wastewaters in 2024 compared to 2022 and 2023.

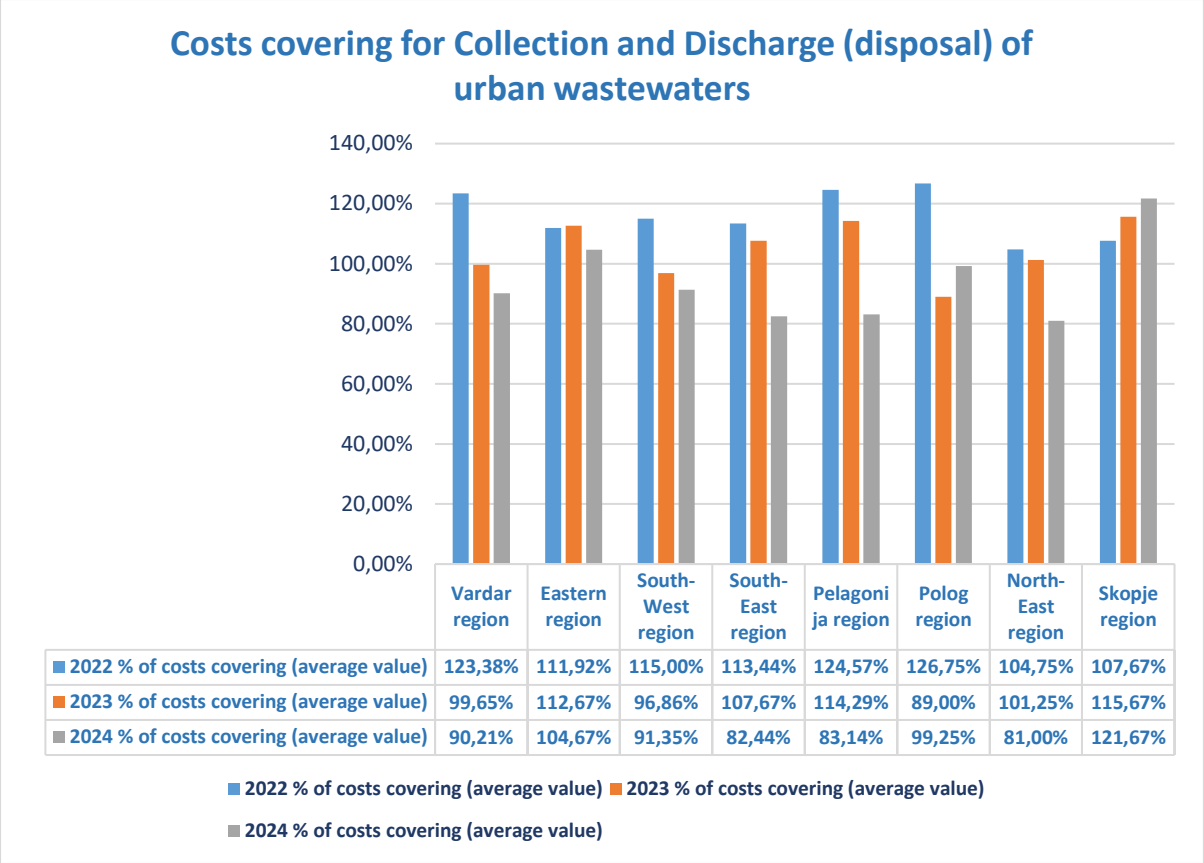


Chart 7.6.29 Percentage of covering costs for collection and discharge of wastewaters

7.6.6.3 COVERAGE OF COSTS FOR WASTEWATERS PURIFICATION (WASTEWATER TREATMENT)

In line with the data owned by the Energy Regulatory Commission, the coverage of costs for the water service - purification of wastewaters in 2024 in the Vardar, Southeast, Northeast and Skopje regions, is at a lower level compared to 2023. Other regions mark an increase in the level of coverage of costs for the water service - purification of wastewaters in 2024.

The chart below provides an overview of the of the cost coverage for the water service - purification of wastewaters in 2024 compared to 2022 and 2023.

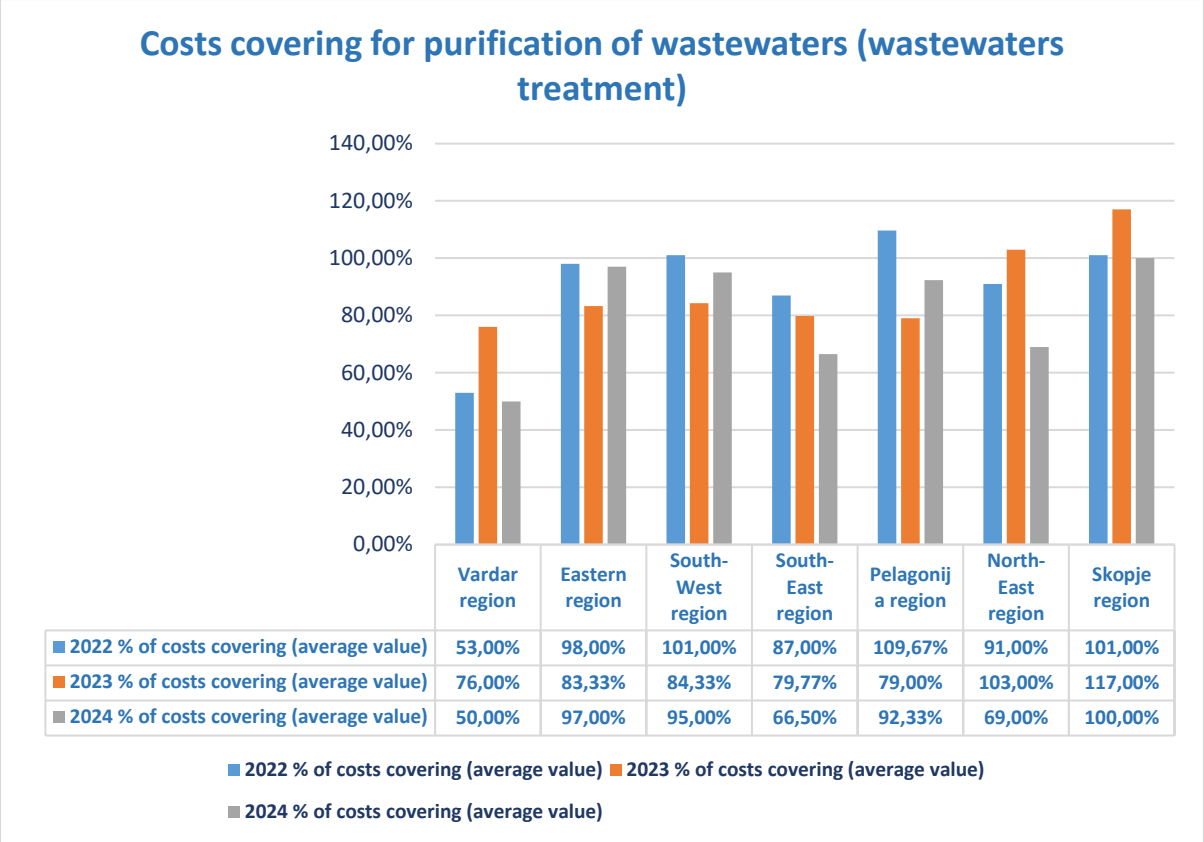


Chart 7.6.30 Percentage of covering costs for purification of wastewaters

LEGAL AFFAIRS

2024

VIII. LEGAL AFFAIRS

The Energy Regulatory Commission operates competences in accordance with provisions stipulated in the Law on Energy* and the Law on Setting Prices for Water Services, as well as in accordance with the provisions of the Law on Energy Efficiency*.

In conducting its competences defined in the previously referred laws, the Energy Regulatory Commission, as a sole, non-profitable regulatory body, in the procedures on protection of the rights of consumers, as well as in the procedures on establishing prices and tariffs for regulated energy activities, methodologies, tariff systems, certification, rules on energy sources market regulation, rules on complaints and dispute resolution, approval of acts adopted by energy activities performers and by the water service providers, providing access to information, accountability and transparency in operation, also applies the provisions of the Law on Administrative Procedure, the Law on Consumers Protection, the Law on Whistleblowers Protection, the Law of Free Access to Information of Public Interest, as well as all other positive regulations of the Republic of North Macedonia in regard to the work of state authorities.

During 2024, the Energy Regulatory Commission, in accordance with the authorizations set out in the Law on Energy*:

- Adopted three general acts, three legal acts, two acts in the area of electricity, three in the area of natural gas, one in the area of district heating and two in the area of oil derivatives, and
- Approved 21 legal acts to performers of energy activity, out of which 11 acts are in the area of electricity, eight in the area of natural gas, and one in the area of district heating.

During 2024, the Energy Regulatory Commission issued 355 licenses for performing energy activities, of which 351 were for performing energy activities in the field of electricity, three in the field of natural gas and one in the field of oil derivatives.

Of a total of 520 decision-making procedures on complaints initiated within the Energy Regulatory Commission, in 2024 134 were accepted, 196 were rejected, dismissed or terminated, and for 190 complaints the procedure continued in 2025.

Out of a total of 323 procedures for handling complaints submitted to the Energy Regulatory Commission in 2024, 302 were processed in 2024, and for 21 complaints, 14 of which were in the field of electricity and seven in the field of heat energy, the procedure continued in 2025.

During 2024, 17 requests for free access to public information were submitted to the Energy Regulatory Commission, of which six were requests for information that the Energy Regulatory Commission does not possess and they were forwarded to the holders of the information; 10 were responded to positively, and one request was processed in accordance with Article 23 of the Law on Free Access to Public Information.

The Energy Regulatory Commission, in accordance with the Plan for Supervision of Licensees for 2024, supervised the operations of a total of 15 licensees for performing energy activities, of which six licensees in the field of electricity, three licensees in the field of wholesale trade in crude oil, oil derivatives, biofuels and transport fuels, five licensees in the field of natural gas and one licensee in the field of district heating.

The REMIT registry, which continued to be updated in 2024, registered 81 participants in the wholesale energy markets for electricity and natural gas. It can be found on the website of the Energy Regulatory Commission.

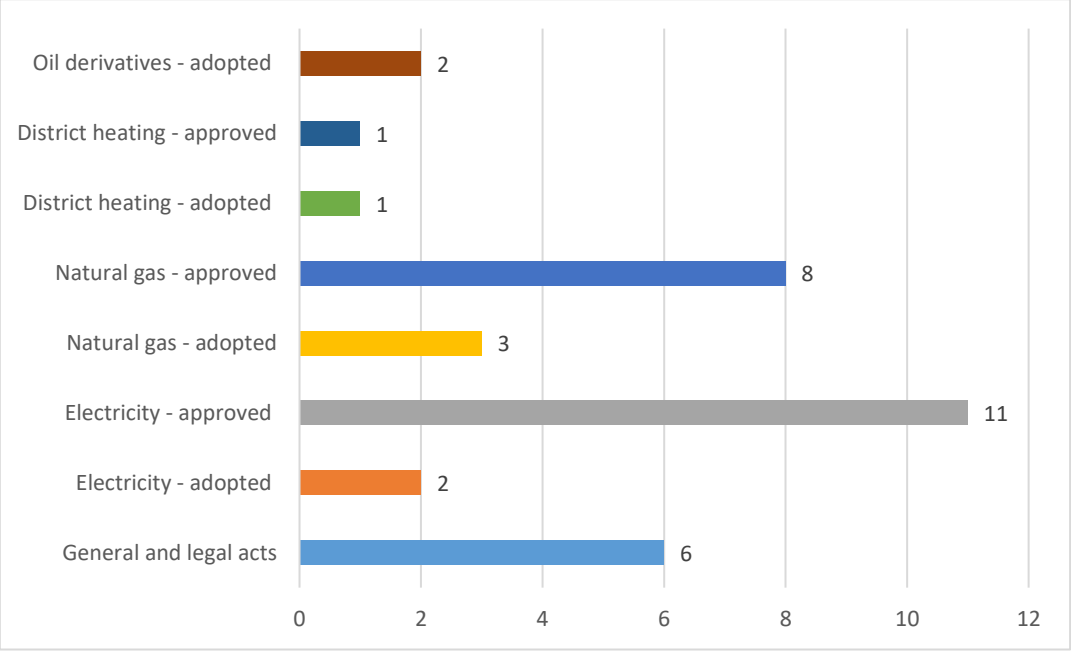
8.1 LEGAL ACTS

In 2024, the Energy Regulatory Commission acceded to amendments and additions to certain acts in all fields of energy, whereby ambiguities noted while practically implementing the acts, noted during the practical implementation of the acts, have been overcome and appropriately elaborated. During 2024, the Energy Regulatory Commission continued to approve the by-laws of the energy transmission and distribution operators, arising from the Energy Law*.

During 2024, the Energy Regulatory Commission adopted two legal and three general acts regulating the operations of the Energy Regulatory Commission, two acts in the field of electricity, three acts in the field of natural gas, one act in the field of thermal energy and two acts in the field of oil derivatives.

Also, during 2024, the Energy Regulatory Commission approved 11 acts that were prepared by the electricity transmission and distribution operators, eight acts that were prepared by the distribution operator and the natural gas supplier and one act of the heat supplier.

Chart 8.1 shows an overview of the legal acts adopted or approved by the Energy Regulatory Commission during 2024.



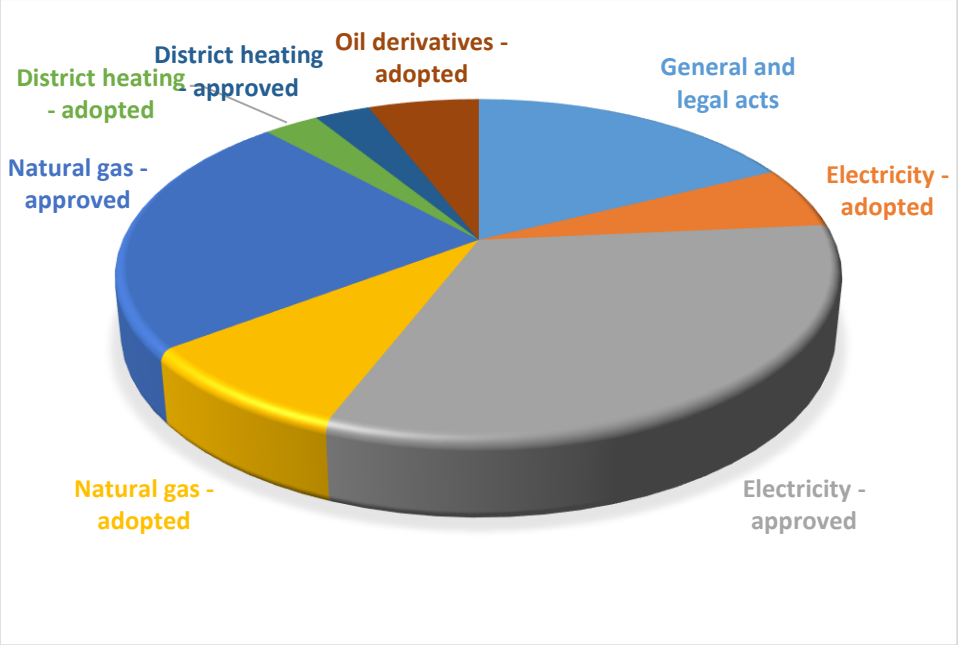


Chart 8.1 Overview of the legal acts adopted or approved by the Energy Regulatory Commission during 2024

8.1.1 GENERAL ACTS During 2024, the Energy Regulatory Commission has adopted the following general acts:

1. **Operation Plan for 2025, adopted on 26 December 2024;**
2. **Rulebook amending and Supplementing the Rulebook on Internal Organization of the Energy and Water Services Regulatory Commission of the Republic of North Macedonia**, adopted on 26 December 2024;
3. **Rulebook amending and Supplementing the Rulebook on Internal Organization of the Energy and Water Services Regulatory Commission of the Republic of North Macedonia**, adopted on 30 December 2024;

In order to advance the process of work, as well as exercising all its legal competences, the Energy Regulatory Commission in 2024 adopted the following acts:

1. **Rulebook Amending the Rulebook for licenses**, adopted on 21 November 2024 ("Official Gazette of the Republic of North Macedonia" No. 240/24);
2. **Rulebook Amending the Rules for Proceeding Upon Complaints and Dispute Resolution**, adopted on 21 November 2024, ("Official Gazette of the Republic of North Macedonia" no. 240/24);
3. **Annual Plan for Monitoring**, adopted on 30 December 2024.

8.1.2 ACTS IN THE FIELD OF ELECTRICITY

During 2024, the Energy Regulatory Commission adopted the following acts in the field of electricity:

1. **Rules for exemption from the application of certain obligations from the network rules for electricity transmission**, adopted on 22 February 2024 ("Official Gazette of the Republic of North Macedonia" No. 47/24);
2. **Rules amending the rules for the procurement of electricity for the universal supplier, adopted on 18 July 2024** ("Official Gazette of the Republic of North Macedonia" No. 150/24);

The Energy Regulatory Commission approved the following acts in the field of electricity during 2024:

1. **Reminder for consumers of SOLE 24 DOOEL Skopje**, approved on 21 January 2024;
2. **Plan for Maintaining the Electricity Transmission System for 2024 of JSC MEPSO for 2024, approved on 8 February April 2024** (“Official Gazette of the Republic of North Macedonia’’ no. 30/24);
3. **Annual Report on the Implementation of the Compliance Program of the AD MEPSO Officer for 2023**, approved on February 29, 2024;
4. **Network Rules for Amendments and Supplements to the Network Rules for Electricity Distribution of Elektrodistribucija DOOEL Skopje**, approved on March 18, 2024 ("Official Gazette of the Republic of North Macedonia" No. 68/24);
5. **Decision on the Amount of Fees for Participation in the Organized Electricity Market of MEMO DOOEL Skopje**, approved on May 2, 2024;
6. **Plan for Maintenance of the Electricity Distribution System for 2024 of Elektrodistribucija DOOEL Skopje**, approved on May 30, 2024 ("Official Gazette of the Republic of North Macedonia" No. 117/24); 117/24);
7. **Plan for Maintenance of the Electricity Distribution System for 2024-2028 of Drustvo za distribucija na elektricna energija Elektrodistribucija DOOEL Skopje**, approved on 4 July 2024 ("Official Gazette of the Republic of North Macedonia" No. 117/24); 139/24);
8. Rules for procurement of electricity to cover the losses in the electricity transmission network of the electricity transmission operator of the Republic of North Macedonia for the JSC for electricity transmission and electrical energy system management in state ownership, Skopje, approved on 18 November 2024 (“Official Gazette of the Republic of North Macedonia” No. 237/24);
9. **Reminder for consumers of GENI-I PRODAZBA NA ENERGIJA DOOEL Skopje,** approved on 11 January 2024;
10. **Auction Rules for the Allocation of Cross-Border Transmission Capacities on the Border of the Republic of North Macedonia-Republic of Serbia and Auction Rules for the Allocation of Cross-Border Transmission Capacities on the Border of the Republic of North Macedonia-Republic of Bulgaria for 2025,** approved on 18 November 2024;
11. **Rules amending the Rules for Balancing the Electricity System of the Electricity Transmission System Operator of the Republic of North Macedonia, the Joint Stock Company for Electricity Transmission and Management of the State-Owned Electricity System, Skopje**, approved on 19 December 2024 ("Official Gazette of the Republic of North Macedonia" No. 264/24).

8.1.3 ACTS IN THE FIELD OF NATURAL GAS

During 2024, the Energy Regulatory Commission adopted the following acts in the field of natural gas:

1. **Rules for amending the Rules for Natural Gas Supply**, adopted on 8 February 2024 ("Official Gazette of the Republic of North Macedonia" No. 30/24);
2. **Decision on Certification and Appointment of the Natural Gas Transmission System Operator of the Republic of North Macedonia**, adopted on 4 July 2024;
3. **Tariff System Amending the Tariff System for Natural Gas Transmission and Natural Gas Market**, adopted on 21 November 2024 ("Official Gazette of the Republic of North Macedonia" No. 240/24). 240/24).

The Energy Regulatory Commission approved the following acts in the field of natural gas during 2024:

1. **Plan for Development of the Natural Gas Distribution System for the Next Five Years of the Directorate for Technological Industrial Development Zones**, approved on 11 January 2024;
2. **Network rules for the distribution of natural gas of the Public Enterprise for the Construction of Infrastructure Facilities "KUMANOVO-GAS"-Kumanovo**, approved on October 31, 2024 ("Official Gazette of the Republic of North Macedonia" no. 225/24);
3. **Rules for the procurement of natural gas and system services for covering losses in the distribution network of the Public Enterprise "KUMANOVO-GAS" - Kumanovo, approved on 31 October 2024** ("Official Gazette of the Republic of North Macedonia" No. 225/24);
4. **Rules for the procurement of natural gas and system services for covering losses in the distribution network for Kumanovo gas,** approved on 31 October 2024 ("Official Gazette of the Republic of North Macedonia" No. 225/24);
5. **Reminder for consumers of the natural gas supplier of Kumanovo gas**, approved on 31 October 2024
6. **Plan for the development of the natural gas distribution system for the next five years of the Public Enterprise for Energy Activities "STRUMICA-GAS" - Strumica**, approved on 26 December 2024;
7. **Reminder for consumers of the natural gas supplier ESM)Prodazhba**, approved on December 26, 2024;
8. **Reminder for consumers of the natural gas supplier Strumica Gas,** approved on December 26, 2024.

8.1.4 ACTS IN THE FIELD OF DISTRICT HEATING

On July 22, 2024, the Energy Regulatory Commission adopted a Rulebook amending the Rulebook on Determining Prices for Thermal Energy and System Services ("Official Gazette of the Republic of North Macedonia" No. 225/24).

On January 11, 2024, the Energy Regulatory Commission approved the Rulebook for determining the quality of delivered thermal energy of ESM Snabduvanje so toplina DOOEL Skopje.

8.1.5 ACTS IN THE FIELD OF OIL DERIVATIVES

During 2024, the Energy Regulatory Commission adopted the following acts in the field of oil derivatives:

1. On April 25, 2024, **the Energy Regulatory Commission adopted a Decision on determining the escalated density ρand the deescalated density ρ of each oil derivative and fuel for transportation, the amount of the premium fee P, the transportation costs T to a warehouse in the Republic of North Macedonia, and the amount of the fee D for operating costs through a warehouse and trade margin, including transportation costs from the warehouse to gas stations and end consumers** ("Official Gazette of the Republic of North Macedonia" no. 95/24);
2. On October 25, 2024, **the Energy Regulatory Commission adopted a Decision on determining the escalated density ρe and the deescalated density ρd of each oil derivative and fuel for transportation, the amount of the premium fee P, the transportation costs T to a warehouse in the Republic of North Macedonia, and the amount of the fee D for operating costs through a warehouse and trade margin, including transportation costs from the warehouse to gas stations and end consumers** ("Official Gazette of the Republic of North Macedonia" No. 217/24).

8.2 LICENSES FOR PERFORMANCE OF ENERGY ACTIVITIES

In the period 2004 until 31 December 2024, the Energy Regulatory Commission has issued a total of 1761 licenses for performance of the energy activities, out of which at the end of 2024, 1455 licenses are active. The licenses issued by the Energy Regulatory Commission, divided per areas, and active on 31 December 2024, are presented in Chart 8.2.

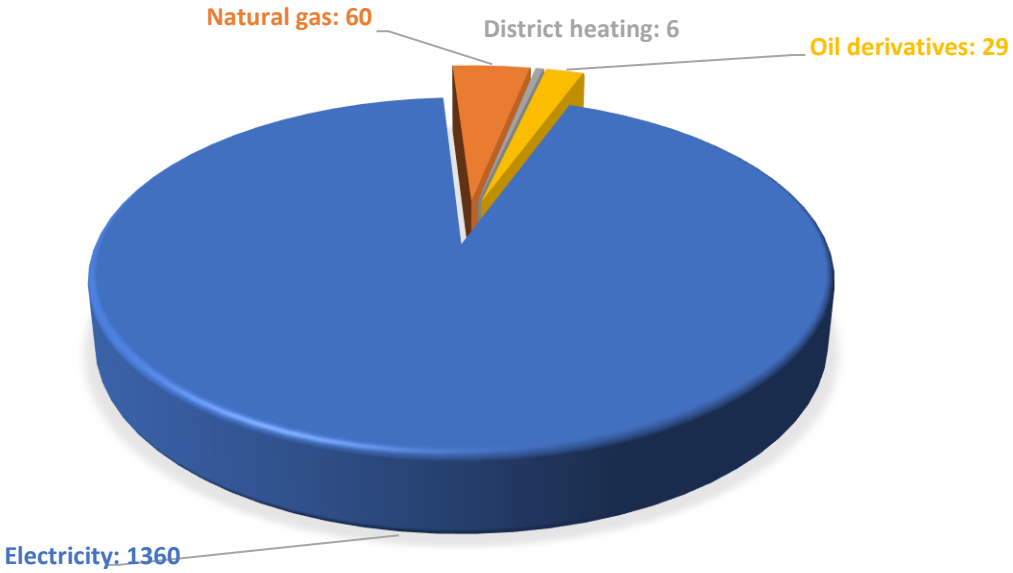


Chart 8.2 Active licenses in areas, 31 December 2024

In accordance with the Law on Energy* and the Rulebook on licenses, the Energy Regulatory Commission performs the issuance, change, extension, transfer, suspension, revocation, or validity expiration of licenses for energy activity performance, temporary and

trial licenses, as well as decisions for registration in the Registry on Foreign Traders and Suppliers of Electricity and Natural Gas.

8.2.1 LICENSES IN THE FIELD OF ELECTRICITY

In 2024 the Energy Regulatory Commission adopted:

- 6 decisions for issuance of licenses for electricity trade;
- 5 decisions for extension of the license for electricity trade;
- 6 decisions amending the licenses for electricity trade;
- 7 decisions for issuance of licenses for electricity supply;
- 6 decisions for extension of the license for electricity supply;
- 2 decisions amending the licenses for electricity supply;
- 240 decisions for issuance of licenses for production of electricity out of which 28 are for issuance of a bearer of temporary license, and 64 are for issuance of a temporary license holder and/or probationary work license;
- 29 decisions to change licenses for electricity production, of which 5 decisions are ex officio, and 24 are due to an increase in the capacities with which the activity is performed;
- 6 decisions for transfer of a license for electricity production;
- 141 decisions to issue temporary licenses for electricity production;
- 119 decisions to issue licenses for probationary operation for electricity production, of which 32 were issued licenses for electricity production;
- 56 decisions to extend the validity of licenses for trial operation for electricity production;
- 10 decisions to terminate temporary licenses for electricity production;
- 1 decision to reject a request for issuing a license for electricity production;
- 2 decisions to reject a request for extending a license for probationary operation for electricity production;
- 1 decision to initiate a procedure for revoking a license for electricity production; and
- 1 decision to revoke an electricity production license.

The Energy Regulatory Commission, in the period from 2004 to 31 December 2024, has issued a total of 1589 licenses in the electricity sector, of which 1360 licenses are active at the end of 2024 (Table 8.1).

Table 8.1 Active licenses in the area of electricity, by activities, on 31 December 2024

Energy activity	Number of active licenses
electricity transmission	1
Electricity market organization and management	1
electricity distribution	2
electricity production	1231
District heating supply	55
Electricity trade	70
total	**1,360**

8.2.2 LICENSES IN THE FIELD OF NATURAL GAS

In 2024 the Energy Regulatory Commission adopted:

- 2 decisions for issuance of licenses for natural gas trade;
- 1 decision for issuance of licenses for natural gas supply;
- 1 decision amending the licenses for natural gas supply;
- 1 decision for extension of the license for natural gas supply;

The Energy Regulatory Commission, in the period from 2004 to 31 December 2024, has issued a total of 81 licenses in the natural gas sector, of which 60 licenses are active at the end of 2024 (Table 8.2).

Table 8.2 Active licenses in the area of natural gas, by activities, on 31 December 2024

Energy activity	Number of active licenses
Natural gas transmission	1
Natural gas market organization and management	/
Distribution of natural gas	3
Natural gas supply	28
Natural gas Trade	28
total	**60**

8.2.3 LICENSES IN THE FIELD OF DISTRICT HEATING

In 2024 the Energy Regulatory Commission did not pass any new decisions for licenses in the area of district heating.

The Energy Regulatory Commission, in the period from 2004 to 31 December 2024, has issued a total of 21 licenses in the district heating sector, of which 60 licenses are active at the end of 2024 (Table 8.3).

Table 8.3 Active licenses in the area of district heating, by activities, on 31 December 2024

Energy activity	Number of active licenses
district heating distribution	2
district heating supply	2
District heating production	0
Regulated production of district heating	2
total	**6**

8.2.4 LICENSES IN THE FIELD OF OIL DERIVATIVES

In 2024 the Energy Regulatory Commission adopted:

- 1 decision for issuance of a license for wholesale trade of crude oil, oil derivatives, biofuels and transportation fuels;
- 2 decisions for extension of the wholesale trade of crude oil, oil derivatives, biofuels and transportation fuels;
- 5 decisions for change of licenses for wholesale trade of crude oil, oil derivatives, biofuels and transportation fuels;
- 2 decisions for initiating a procedure for revoking of licenses for wholesale trade of crude oil, oil derivatives, biofuels and transportation fuels;
- 1 decision to stop the procedure for revoking a license for wholesale trade in crude oil, oil derivatives, biofuels and transport fuels.

The Energy Regulatory Commission, in the period from 2004 to 31 December 2024, has issued a total of 70 licenses in the crude oil and oil derivatives sector, of which 29 licenses are active at the end of 2024 (Table 8.4).

Table 8.4 Active licenses in the area of oil derivatives, by activities, on 31 December 2024

Energy activity	Number of active licenses
crude oil processing and oil derivatives production	1
Production of fuels designated for transportation, with mixture of fossil fuels and biofuels	2
transportation of oil derivatives via product lines;	1
wholesale trade of crude oil, oil derivatives, biofuels, and transportation fuels	25
total	**29**

8.3 CONSUMER PROTECTION

Within the scope of work and implementation of competencies, the Energy Regulatory Commission a special accent places on the protection of the rights of consumers by monitoring status and electricity market functionality, and oversight of mistreatment by dominant position on the energy markets, aiming to provide benefits to consumers based on efficiency and competitive functionality of energy markets. The implementation of all activities on protection of the rights of consumers are based on the principles of transparency, non-discrimination, and objectivity.

The measures for implementing the protection of consumer rights are adequately elaborated in the rules for the supply of certain types of energy, in particular regulating the issues of dealing with the category of vulnerable consumers, the procedure for protecting consumer rights by submitting a complaint to energy service providers regarding the service they provide, as well as the obligations to inform consumers about all aspects related to the service and the sustainability of the quality of services provided by energy service providers.

In case of breach of consumers' rights, within the Rules on Complaints and Dispute Resolution, mechanisms are introduced enabling consumers to initiate a procedure for protection of their rights, which in first instance is carried out in front of the authorities of the respective energy activity performer, if the consumer is unsatisfied of the outcome of the first instance proceeding, the consumer shall proceed to second instance to the commission for proceeding upon complaints, established by the Energy Regulatory Commission. Taking into consideration the increased scope of objections, in November 2024 deputy members in this commission were introduced from the lines of the employees in the professional services of the Energy Regulatory Commission.

In 2024, the REMIT Register of Wholesale Energy Market Participants continued to be updated, as required by Regulation (EU) 1227/2011 of the European Parliament and of the Council of the EU on the integrity and transparency of wholesale energy markets (CELEX 32011R1227) of 25 October 2011 (hereinafter: REMIT regulation). The implementation of obligations arising from REMIT was also part of the topics for supervision carried out among energy activity providers in the field of electricity.

In addition to the previously mentioned instruments and mechanisms, consumers can also protect their rights with the procedures established in the Law on Handling Complaints and Proposals, the Law on Free Access to Public Information, and the Law on Whistleblower Protection. Namely, with the provisions of the cited laws, the quality and scope of rights protection are expanded in the part of the obligations of the Energy Regulatory Commission for accountability in its operations by enabling access to all information available to the Energy Regulatory Commission, as well as submitting reports of suspicion or knowledge that a punishable or other illegal or impermissible action has been committed, is being committed, or is likely to be committed that violates or threatens the public interest.

8.3.1 COMPLAINTS TO DISTRICT SUPPLIERS

Types of complaints submitted to district heating supplier presented in Table 8.5. Based on the data and information received from heat suppliers, Table 8.6 shows the complaints submitted to heat suppliers by consumer group (households, education and other consumers) and by type of complaint, with data on how many complaints were received, how many were approved and how many were rejected, as well as the average response time by number of working days.

Table 8.5 Types of complaints in the area of district heating

Type of complaint	Description
A	Connection to objects (postponement, obstacles, others)
B	Connection of consumers (postponement, obstacles, others)
C	Metering (reading of metering devices, functionality of metering devices, other)
D	Continuant supply / permanent flow
E	Undelivered Invoice, amount of invoice, manner on calculation, amount of debt, calculation of interest, appeals, consumer switch, payment switch, instalment payment, negotiations, double payments of bills, etc.
F	Preliminary measure off square meters, installed / engaged capacity, status check connected / disconnected, water discharge, diagram change of level of metering place, measure off outbuildings / attachments, manner on calculation and array of energy per metering place, connection and disconnection requests, etc.
G	Quality of Heating Service (lower temperature than prescribed to consumer, etc.)
H	Others

Table 8.6 Complaints submitted to District heating Suppliers, in 2024

Type of consumers	Complaints	A	B	C	D	E	F	G	H	total
Households	Received	34	7	14	12	186	69	101	45	**468**
Education	Received	0	0	0	0	1	0	10	2	**13**
Other consumers	Received	18	1	1	0	74	19	10	7	**130**
Households	approved	18	0	9	0	30	16	48	26	**147**
Education	approved	0	0	0	0	0	0	10	2	**12**
Other consumers	approved	0	0	0	0	0	0	3	2	**5**
Households	dismissed	0	0	0	0	0	0	0	0	**0**
Education	dismissed	0	0	0	0	0	0	0	0	**0**
Other consumers	dismissed	0	0	0	0	0	0	0	0	**0**
Households	time of response (Working days)	75	41	17	19	139	115	35	69	

Education	time of response (Working days)	0	0	0	0	2	0	0	0
Other consumers	time of response (Working days)	19	15	2	2	131	81	21	9

The data from Table 8.6 indicate that in 2024, an overall of 611 complaints were submitted from all three consumer categories, whereby 468 complaints (76.6%) were submitted by households, 13 complaints (2.1 %) were submitted by the education category and 130 complaints (21.3 %) are submitted by other consumers. Compared to 2023, the total submitted complaints in 2024 are increased by 49.4%.

It is also visible that 42.7% of the total complaints submitted relate to complaints from group D, i.e. for undelivered invoice, invoice amount, method of calculation, amount of debt, calculated interest, lawsuits, change of consumer, change of payment method, payment in instalments, agreements and double-paid bills, etc., while 19.8% relate to complaints from group E, i.e. for heating quality (lower temperature at the consumer than prescribed, etc.).

This distribution of complaints is different compared to 2023, when a total of 409 complaints were submitted, of which 55.31% related to complaints from group D, 32.04% related to complaints from group F, while 15.1% related to complaints from group E.

8.3.2 COMPLAINTS TO ELECTRICITY SUPPLIERS

Based on data and information received by the Universal Electricity Supplier, during 2023, households have submitted complaints referring to complaints type A only, i.e., issues related to contracts and sale (non-loyal commercial terms / switch to commercial terms, lack of information, confirmation of contract, right to contract withdrawal, payments, inconvenient contractual terms, minimum timeframe on reaching agreement, etc.), as it is enclosed in Table 8.7.

Table 8.7 Number of complaints from households submitted to the Universal Electricity Supplier, during 2024

Type of consumers	Complaints	Questions related to agreements and sale
Households	received	6,183
	approved	1,918
	dismissed	4,265
	time of response (Working days)	2

Compared to 2023, the number of complaints filed by households is 5% lower.

Out of the foreseen three groups of consumers (large consumers, small consumer and households), only the group of households established communication with the universal supplier in 2024, in the scope presented in Table 8.8.

Table 8.8 Communication of consumers with the Universal Electricity Supplier during 2024

Type of consumers	Complaints	Questions related to agreements and sale
Households	Phone calls	488,350
	E-mails	83,296
	Visits to users' centre	95,148
	Written requests	0
	Total	666,794

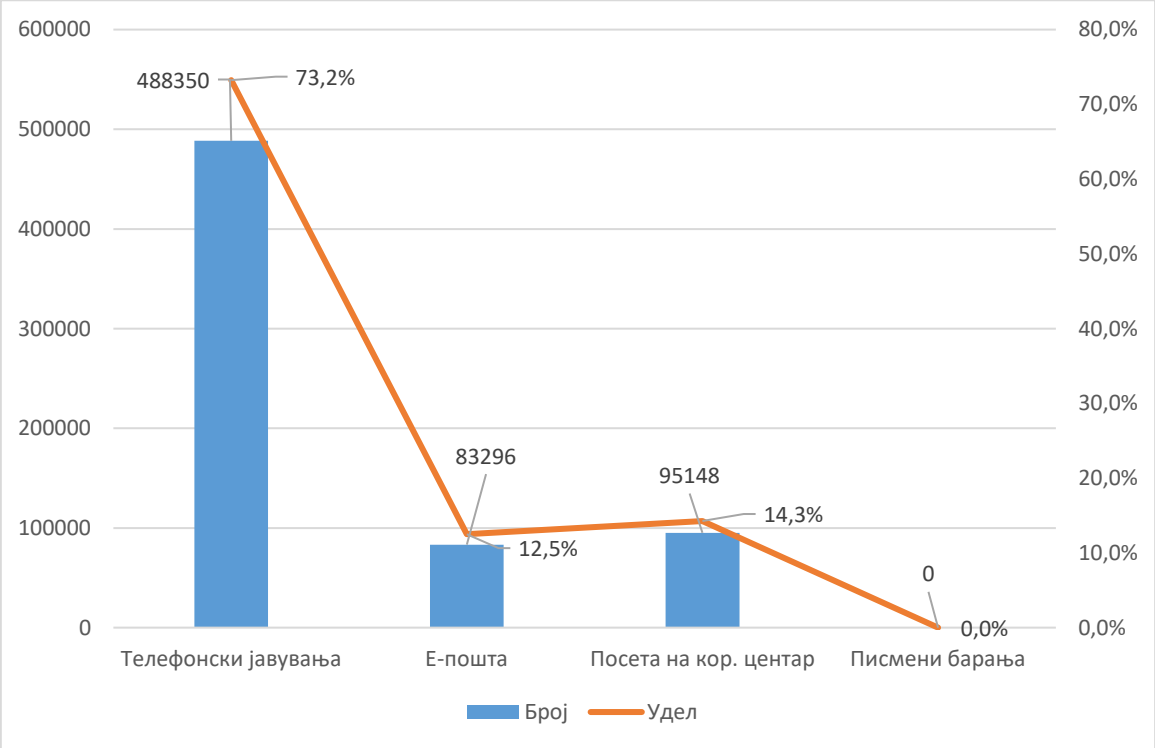


Chart 8.3 Structure of communication channels of consumers with the Universal Electricity Supplier, during 2024

Chart 8.3 indicates that phone calls dominate the way of communication with the universal electricity supplier (73.2 %), followed by direct visits to users' centre (14.3%), and communication via e-mail (12.5%).

8.3.3 CONNECTION TO AND DISCONNECTION FROM THE ELECTRICITY DISTRIBUTION SYSTEM

Tables 8.9, 8.10 and 8.11 provide data submitted by the electricity distribution system operator, Elektrodistribucija DOOEL Skopje, for the activities related to connections in the electricity distribution system and the disconnections of consumers from that system and producers during 2024.

Table 8.9 Activities by the Electricity Distribution System Operator referring to requests for connection to the electricity distribution system in 2024

Activity	Consumers					
	Total	35 kV	10 kV	0.4 kV	Households	Other
Requests for connection	7,995	1	82	7,912	/	/
Approved requests	7,378	0	70	7,308	/	/
Realized connections	4,801	481	1,181	3,139	2,773	366
Average time (days)	13.2	0	0.1	20.2	22.8	/

Table 8.10 Activities by the Electricity Distribution System Operator referring to connection of producers in 2024

Activity	Producers			
	Total	**35 kV**	**10 kV**	**0.4 kV**
Requests for connection	378	27	231	120
Approved requests	309	27	194	88
Realized connections	77	1	38	38
Average time (days)	112.0	/	197.7	29.2

Table 8.11 Activities by the DSO referring to connection of consumers-producers in 2024

Activity	Consumers-producers
	Total
Requests for connection	638
Approved requests	291
Realized connections	312
Average time (days)	187.1

The data on the number of disconnected consumers from the electricity distribution system by measuring points is presented in Table 8.12.

Review of disconnected consumers per metering places in ratio with average number of connections in the period from 2022 to 2024

	2022	2023	2024
Disconnected- unpaid bills	71,839	79,354	98,272
average number of connections	899,303	913,564	924,519
Share of disconnected consumers	**7.99%**	**8.69%**	**10.63%**

The data disclosed in Table 8.12 indicate that the share of disconnected consumers due to unpaid bills, according to metering places, in relation to average number of connections in 2024 was 10.63%. For the period 2022-2024 this share in 2024 was higher by 2.64% compared to 2022, i.e., 1.94% compared to 2023.

8.3.4 COMPLAINTS AND DISPUTES

The procedures for complaints and dispute resolution are conducted in line with Rules for Proceeding Upon Complaints and Dispute Resolution. In 2024, there was no initiated procedure for dispute resolution.

The procedure for complaint resolution is conducted by the Complaints Resolution Commission in the field of electricity and the Complaints Resolution Commission in the field of district heating within the Energy Regulatory Commission.

During 2024, an overall of 520 complaint resolution procedures were initiated before the Energy Regulatory Commission, whereby, 148 were initiated by legal entities, and 380 initiated by physical entities (Table 8.12). The Complaints Resolution Commission in the field of electricity has held 56 sessions, and the Complaints Resolution Commission in the field of district heating has held 9 sessions.

Table 8.12 Cross-reference of initiated procedures for dispute resolution in 2022, 2023 and 2024

	2022	2023	2024	2024/2022 %	2024/2023 %
Electricity	244	345	478	95.9	38.55
District heating	31	35	42	35.48	20
Natural gas	-	-	-	-	-
oil and oil derivatives	-	-	-	-	-
Total	**275**	**380**	**520**	**89.09**	**36.84**

The above table 8.12 indicates that in 2024, the number of initiated complaint resolution procedures shows 40.87% increase in relation to 2023, while compared to 2022, the number shows increase by 99.18 %.

The adopted decisions in relation to initiated complaint resolution procedures in 2024 are displayed in Table 8.13.

Table 8.13 Adopted decisions in relation to initiated complaint resolution procedures in 2024

	Adopted	Stopped	dismissed	Rejected	The procedure continues in 2025
Electricity	117	27	145	7	182
District heating	17	/	17	/	8

Comparison of the adopted decisions in relation to initiated complaint resolution procedures in 2022, 2023 and 2024 are displayed in Table 8.14.

Table 8.14 Comparison of adopted decisions in relation to initiated complaint resolution procedures in 2022, 2023, 2024

	2022	2023	2024
Adopted	90	102	134
Stopped	14	22	27
dismissed	129	142	162
Rejected	7	4	7
The procedure continues next year	35	81	190
Total	**275**	**380**	**520**

8.3.5 APPLICATIONS (COMPLAINTS)

During 2024, in accordance with the Law on Proceeding upon Complaints and Proposals, 323 applications (complaints) from legal and physical entities were submitted, whereby 204 were related to issues in the field of electricity and 119 issues in the field of district heating (Table 8.15 and 8.16).

Out of a total of 323 procedures for handling complaints submitted to the Energy Regulatory Commission in 2024, 302 were processed in 2024, and for 21 complaints, 14 of which were in the field of electricity and seven in the field of heat energy, the procedure continued in 2025.

Table 8.15 Submitted applications (complaints) to the Energy Regulatory Commission on issues from the field of electricity in 2024

Electricity	Legal entities	Individuals (natural persons)	Others	Total
Submitted	16	183	5	**204**
Proceeded	14	170	5	**189**
The procedure continues next year	2	12	-	**14**
Forwarded to jurisdiction	-	-	-	**-**
Proceeded in another way	-	1	-	**1**

Table 8.16 Submitted applications (complaints) to the Energy Regulatory Commission on issues from the field of district heating in 2024

District heating	Legal entities	Individuals (natural persons)	Others	Total
Submitted	8	105	6	**119**
Proceeded	7	98	6	**111**
The procedure continues next year	1	6	-	**7**
Forwarded to jurisdiction	-	-	-	**-**
Proceeded in another way	-	1	-	**1**

The number of submitted applications in the field of electricity, compared to last year, is higher by 22.9%, while it is decreasing in the of district heating by 2.5%. Detailed information is provided in Table 8.17.

Table 8.17 Cross-reference of initiated procedures for dispute resolution in 2022, 2023 and 2024

	2022	2023	2024	2024/22 (%)	2024/23 (%)
Electricity	198	166	204	44.6%	22.9%
District heating	56	122	119	118%	-2.5%
Natural gas	-	-	-	-	-
oil and oil derivatives	-	-	-	-	
Water services	-	-	-	-	
Total	**254**	**278**	**323**	**127%**	**9.4%**

8.4 COURT PROCEDURES

8.4.1 ADMINISTRATIVE DISPUTES

Of the lawsuits for initiating an administrative dispute before the Administrative Court that were filed against the decisions of the Energy Regulatory Commission before 2024, for 17 administrative disputes the proceedings continued in 2024. For three, the lawsuits were dismissed or rejected as unfounded, for six the lawsuits were accepted, while for eight administrative disputes the proceedings continued in 2025.

During 2024, 67 administrative disputes were filed against the decisions made by the Energy Regulatory Commission, four lawsuits were rejected, one lawsuit was accepted, and for the remaining 62 the proceedings continued in 2025 (Table 8.18).

Table 8.18 Review of Administrative Disputes initiated against decisions adopted by the Energy Regulatory Commission, prior and in 2024

	Initiated before and during 2024		Resolved in 2024		the procedure continues in 2025	
	Before 2024	*From 2024*	*Prior to 2024*	*From 2024*	*Prior to 2024*	*From 2024*
Administrative disputes	**17**	**67**	**9**	**5**	**8**	**62**
	Total 84		**Total 14**		**Total 70**	

8.4.2 OTHER COURT PROCEDURES

During 2024, activities were undertaken intensively for voluntary debt payment (collection of charges) related to invoices from 2024. The debtors were usually contacted via phone call; warnings were delivered to them which resulted in a significant increase in collection. More precisely, 508 invoices for payment were prepared and delivered for 2024 and most of the invoices are settled, whereas for the unpaid, the companies have been contacted to pay the debt toward the Energy Regulatory Commission before initiating the procedure on forced payment.

In 2024, the Energy Regulatory Commission has not filed any application for initiating misdemeanour procedure before authorized institutions. There is only one ongoing misdemeanour procedure from the applications for initiation of misdemeanour procedure in the past years.

In 2024, only one procedure in the field of labour disputes was initiated against the Energy Regulatory Commission.

In 2024, the procedure against the Energy Regulatory Commission is ongoing for three procedures for paying of unpaid fees to the members of the complaints in the field of energy.

8.5 INFORMATION OF PUBLIC INTEREST

The Energy Regulatory Commission, as an owner of information, implements the Law on Access to Information of Public Interest which started to apply on 29 November 2019.

Aiming to implement the obligations deriving from the cited law, the Energy Regulatory Commission has appointed officials for mediating when an entity asks for free access to information of public interest at the disposal of the Energy Regulatory Commission. The public information is published on the website of the Energy Regulatory Commission in the main menu Transparency sub-menu Public interest information, including the decisions made, where personal data is protected, pursuant of the valid regulations for personal information protection.

The undertaken activities are listed below:

- During 2024, 17 requests for free access to public information were submitted to the Energy Regulatory Commission, of which six were requests for information that the Energy Regulatory Commission does not possess and they were

forwarded to the holders of the information, pursuant to Article 18 paragraph (1) of the Law on Free Access to Public information, and 1 was responded to positively in accordance with Article 23 of the Law on Free Access to Public Information.

- The Energy Regulatory Commission responded positively to 10 requests for free access to public interest information;
- The Energy Regulatory Commission has not rejected, dismissed or unanswered requests for free access to public information in 2024;
- The Energy Regulatory Commission has not adopted any appeals against decisions of the Agency for Protection of the Right to Free Access to Public Information, nor has it revised first-instance decisions following actions taken by the Agency for Protection of the Right to Free Access to Public Information.

8.6 IMPLEMENTATION OF THE LAW ON WHISTLEBLOWERS PROTECTION

Pursuant to the provisions of the Law on Whistleblowers, the Energy Regulatory Commission has appointed one official from the personnel of the professional offices to conduct the procedure on submitted report by a whistleblower under protected internal reporting, or upon protected external reporting.

Reports relate to suspicion or acknowledgment of committed, is committed or is probable to commit a criminal act, an illegal or any prohibited act which shall harm or endanger public interest.

In 2024, no internal, or external reporting on illegal or prohibited acts is submitted to the Energy Regulatory Commission.

8.7 MONITORING LICENSE HOLDERS

As of 1 January 2024, the Rules for Monitoring started applying (“Official Gazette of the Republic of North Macedonia” NO. 164/23) which regulates in detail the preparation and implementation of the monitoring performed by the Energy Regulatory Commission with regards to meeting certain obligations by the energy activity performers. Its adoption, apart from being an obligation arising from the adoption of the Law on Amendments to the Law on Energy* ("Official Gazette of the Republic of North Macedonia" No. 236/22), is also conditioned by the transposition of the REMIT Regulation.

During 2024, the Plan for Monitoring of Licensees for 2024 was implemented, which the Energy Regulatory Commission adopted on December 25, 2023, as an obligation arising from Article 208-a of the Law on Energy* and Article 4 paragraph (2) of the Regulation on Supervision.

Supervision was carried out on a total of 15 licensees from the following areas: electricity, crude oil, oil derivatives, biofuels and fuels for transport and natural gas, as follows:

- 6 license holders from the field of electricity, all holders of electricity production license
- 3 holders of licenses for wholesale trade with crude oil, oil derivatives, biofuels, and transportation fuels,

- 5 license holders in the field of natural gas, whereby 3 are holders of licenses for natural gas distribution and supply and 2 are holders of the license on natural gas supply
- 1 holder of a license in the area of district heating distribution

Monitoring is performed by meetings and collecting relevant documents for some license holders and through on-site inspection where the license holders are resident or in the place where the fixed assets for performing the activity are located. Regarding the licensees in the field of electricity, the focus of supervision was placed on issues of integrity and transparency of the wholesale energy markets, i.e. the REMIT Regulation and cybersecurity, while regarding the other licensees, these were separate obligations arising from the respective issued licenses.

On 30 December 2024, the Energy Regulatory Commission adopted a Decision on the Annual Supervision Plan for 2025, according to which in 2025 it is planned to supervise a total of 11 licensees, of which six are in the field of electricity, three are in the field of crude oil, oil derivatives and transport fuels, one is in the field of natural gas and one is in the field of district heating.

8.8 TRANSPARENCY AND INTEGRITY OF ENERGY WHOLESALE ENERGY MARKETS

The Law amending and supplementing the Law on Energy* („Official Gazette of the Republic of North Macedonia'' no. 236/22), transposed the REMIT Regulation in the national legislation.

REMIT regulation aims to increase the integrity and transparency of wholesale electricity and natural gas markets for improving competitiveness in these markets on one hand and the trust and benefit of end consumers, on the other hand. Aiming to achieve this goal, REMIT establishes: Prohibition of trade based on inside information, prohibition to manipulate wholesale energy markets, including attempts at manipulation, obligation to publish inside information by participants in wholesale energy markets, obligation to register participants in the wholesale energy markets in the register whose establishment is under the obligation of the regulatory energy authority, an obligation for persons who, within the frames of performing their activities, mediate in concluding transactions with energy products on the wholesale market, etc.

The implementation of the REMIT Regulation in our country began with the adoption by the Energy Regulatory Commission of the new Rulebook on the manner and procedure for monitoring the functioning of energy markets ("Official Gazette of the Republic of North Macedonia" No. 98/23), which entered into force on 10 May 2023, and the Guidelines for the implementation of the obligation to publish inside information, in order to properly apply and fulfil the obligation to publish inside information by participants in the wholesale energy market based on the Guidelines of the Agency for Cooperation with Energy Regulators (ACER) for the implementation of the REMIT Regulation.

In accordance with the above regulations, participants in the wholesale market from Article 25-a paragraph (4) of the Energy Law*, among other things, have the obligation to submit a request for registration in the Register to the Energy Regulatory Commission before initiating transactions or giving any order for trading in energy products on the wholesale market. An exception to the obligation to submit a request for registration in the records is provided for market participants - producers of electricity from renewable energy sources,

where the largest installed capacity of any of the production facilities is less than 5 MW or the total installed capacity of all the producer's facilities is less than 10 MW.

In 2024, the Energy Regulatory Commission continued to regularly update the REMIT register that it established in 2023. It can be found on the website of the Energy Regulatory Commission on the following link: https://erc.org.mk/page.aspx?id=491. It currently presents 81 participants on the energy wholesale markets. They are also presented in Table 8.19 by type of energy activity performed, i.e., for which they have received an appropriate license. . In addition, part of the energy wholesale market participants performs several activities, i.e., have more than one license for performing energy activity.

Table 8.19 Registered participants at the wholesale energy markets in the national REMIT register

Type of energy activity	Electricity	Natural gas
Production	14[1]	0
Supply	31[2]	8
Trade	30	11
Distribution	2	1
Transmission	1	1
Market operator (and organized market)	1	0
Total	79	21

[1] Out of which one is a holder of a license for production of district heating and electricity in co-generation plants for district heating and electricity.
[2] Out of which one is a holder of a license for supply with obligations to supply electricity as a universal service and for supply of electricity as last resort.

INTERNATIONAL ACTIVITIES

2024

IX. INTERNATIONAL ACTIVITIES

The Energy Regulatory Commission had another successful year internationally, through active participation in the work of existing international associations and their working bodies in the field of energy and water services.

In 2024, the Energy Regulatory Commission actively worked to fulfil its obligations under the Treaty Establishing the Energy Community, through harmonization of the regulatory framework, participation in working groups and exchange of experiences and best practices. The President of the Energy Regulatory Commission, Marko Bislimoski, presided over the Energy Community Regulatory Board (ECRB) until the completion of his second mandate in June 2024.

In 2024 the Energy Regulatory Commission actively participated in the activities of the Energy Regulators Regional Association (ERRA) as part of ERRA's Presidium, the working groups, as well as in professional trainings and conferences in the area of energy. In May 2024 Andrijana Nelkova-Chuchuk was elected Chair of the Association and thus, the Energy Regulatory Commission had the honour of presiding over ERRA in the next two years.

The European Water Regulators (WAREG), of which the Energy Regulatory Commission is a full member, held a large number of activities during 2024 with the active participation of representatives of the ERC. Within the framework of the regular assemblies of the European Water Regulators WAREG, the 32nd Assembly was held on 19 June 2024 in Skopje. The Energy Regulatory Commission was organizer and host of the mentioned event.

The Energy Regulatory Commission is an observer in the Working Group for Electricity within the Agency for the Cooperation of Energy Regulators (ACER).

As of June 2023, the Energy Regulatory Commission is a full-fledged member of the Mediterranean Energy Regulators - MEDREG).

The Energy Regulatory Commission, as the founder of the Balkan Energy School (BES), during 2024 participated in the work both in the organizational positioning and functioning, but also in working meetings related to topics in the area of energy.

9.1 ENERGY COMMUNITY REGULATORY BOARD (ECRB)

The Energy Community is founded based on the Treaty for Establishing Energy Community, signed on October 25th, 2005, by the European Commission and Southeast Europe countries (Albania, Bulgaria, Bosnia and Hercegovina, Romania, Serbia, Croatia, Montenegro, Kosovo and North Macedonia). The signing of the Treaty for Establishing Energy Community was ratified by the signatory countries, and entered into force on July 1st, 2006, declaring the establishment of the Energy Community. Energy Community comprises:

- Nine signatory countries, as contracting parties (Albania, Bosnia and Hercegovina, Gorgia, Kosovo, North Macedonia, Moldova, Serbia, Ukraine and Montenegro);
- EU member-states, as participants, and
- Three countries as observers (Armenia, Norway, and Turkey).

The functional effectuation of the Energy Community is within the institutions, listed below:

- The Ministerial Council;
- The Permanent High-Level Group;

- The Energy Community Regulatory Board;
- Electricity, Natural Gas, Oil and Social Issues Forums, and
- The Energy Community Secretariat.

The Energy Community Regulatory Board - ECRB is a coordinative institution of national regulators to the Energy Community for development of harmonized regulatory rules composed by representatives of signatory countries regulatory bodies, as contracting parties. Marko Bislimoski, president of the Energy Regulatory Commission presided over the Energy Community Regulatory Board until June 2024. In 2024 four meetings were held of the Energy Community Regulatory Board in Athens, Greece.

The Energy Regulatory Commission as a full member, significantly contributes to the organization and to the manner on functioning of the regional and European market of electricity and natural gas by undertaking active participation in the operations of the ECRB and the ECRB Electricity Working Groups (ECRB EWG), Natural Gas (ECRB GWG), Consumers and Retail Markets (ECRB CRM WG), and in the Working Group for implementation of the Regulation Energy Markets Integrity and Transparency (ECRB REMIT WG).

During 2024, the Electricity Working Group (ECRB EWG) in three meeting performed activities on topics and issues listed below:

- Integration of wholesale electricity markets by introducing regulatory measures to support merging of day-ahead markets, and mostly monitoring the preparation of an operational plan for merging the markets by the nominated electricity market operators;
- Implementation of the Package on integration of electricity markets;
- Integration and balance of renewable energy sources and flexibility;
- Status of deviation balancing and development of intra-day;
- Monitoring of electricity markets in line with ACER indicators;
- Transparency of wholesale electricity markets;

During 2024, the Consumers and Retail Markets Working Group (ECRB CRM WG) held three working meetings, out of which two online (23 January and 20 June 2024), and the third took place in Lisbon, Portugal, on 10 October 2024. Together with the third meeting of the working group the trilateral meeting of CEER-ECRB-MEDREG took place. A representative of the Energy Regulatory Commission is a co-chair of ECRB CRM WG. In 2024 the group prepared the following reports:

- Monitoring report of the retail electricity and natural gas markets within the frames of the Energy Community for 2023 prepared based on information provided by regulatory authorities of contracting parties;
- Report on the status of implementation of the Electricity Directive 2019/944 in the area of consumer protection within the Energy Community;
- Report on the regulation relating to active consumers and its implementation within the Energy Community.

The Natural Gas Working Group (ECRB GWG) worked on the following topics in 2024:

- Wholesale market monitoring - Report on the development of the wholesale gas markets among the contracting parties;

- Analysis of the ACER Market Monitoring Report on aspects of the wholesale gas market among the contracting parties;
- Implementation of Grid Rules - Report on Methodologies and Reference Prices and Report on the Halt of Interconnection Points and
- Regulatory framework for biogas - Report for the development of the biogas market.

The 19th Gas Forum was organized within the framework of the Natural Gas Working Group, where the main topics were:

- security of energy supply, and in particular the supply of natural gas after the Russian aggression in Ukraine;
- current state of the gas market and review of regulation;
- case study: increasing the utilization and efficiency of cross-border interconnection points on the Trans-Balkan gas route;
- challenges of decarbonization of the gas sector;
- how to best utilize PECI/PMI projects in gas markets;
- new supply and trade flows in gas markets in Central and South-Western Europe;
- REMIT in the Energy Community.

Within the framework of the Working Group for the Implementation of the Regulation on Transparency and Integrity in Energy Markets (ECRB REMIT WG), the following topics were worked on in 2024:

- Guidelines for the regulatory authorities of the Energy Community Contracting Parties on REMIT
- Procedures for data collection and reporting in the Energy Community Contracting Parties
- Implementation of REMIT and platforms for publishing internal information
- Remit sanctions regime in the Energy Community Contracting Parties
- REMIT procedures and actions in the regulatory authorities of the Energy Community Contracting Parties
- Strengthening the capacities of the regulatory authorities of the Energy Community Contracting Parties on REMIT
- Cooperation of the regulatory authorities of the Energy Community Contracting Parties on topics arising from REMIT

Two workshops were also organized within the framework of the group, namely:

- Workshop on the implementation of REMIT by the Austrian Electricity and Gas Regulatory Authority, with a focus on market monitoring, supervision and cybersecurity issues, on 27 March 2024 (online),
- Workshop on the implementation of a full REMIT in the Energy Community, on 17 June 2024 (online).

Representatives of the Energy Regulatory Commission also participated in other events, meetings and trainings organized by the Energy Community during 2024, including the Athens Electricity Forum.

9.2 ENERGY REGULATORS REGIONAL ASSOCIATION (ERRA)

The Energy Regulators Regional Association – ERRA is a Professional Association of Regulatory Bodies, with the aim to improve cooperation, experience exchange and strengthen capacities of regulatory bodies. As of 2004, the Energy Regulatory Commission is a full member of the Association.

The ERRA presidency has held numerous meetings in 2023, where several issues were discussed, related to the operation of the association and current topics in the field of energy and regulation. A new ERRA Strategy for the period 2025-2030, a Work Plan for 2024/2025 were developed and several important events were organized:

- organization of the 21st ERRA Annual Conference, which was held in Bangkok, Thailand, together with the regional Asian Energy Forum, which discussed topics related to the energy transition, the impact of renewable energy sources on networks and the stability of energy systems, investments in green energy and innovative technologies needed for the energy transition;
- ERRA General Assembly, at which Andrijana Nelkova-Chuchuk was elected as the Chair of ERRA for a two-year term;
- Meeting of the managements of the regulatory bodies, members of ERRA, which discussed the lack of capacities of the transmission and distribution networks for connecting new energy sources and cybersecurity in the energy infrastructure.

In cooperation with RAP (Regulatory Assistant Project), a study was developed and published on the topic "Lack of grid capacities in the era of breakthrough renewable energy sources - policies, regulatory context and tools".

Considering the specific role of nuclear energy in the energy transition, ERRA organized an event that resulted in a publication on the topic “Nuclear energy and the transmission network – challenges of electricity system planning”.

Representatives of the Energy Regulatory Commission actively participated in the working bodies during 2024, as well as in the following events organized by ERRA:

- Committee on Electricity Markets and Economic Regulation:
  - Trends for the development of electricity markets in 2024.
  - Grid development plans and investment plans and their efficiency;
  - Grid capacity for connecting new producers;
  - Prospects for the development of electricity storage devices (battery systems);
  - Reliability indicators and their connection to the increasing number of power plants connected to the systems;
  - New participants in electricity markets such as consumer-producers, mutual energy distribution and mutual trading;
  - investment opportunities in network development.

During 2024, three online meetings of this committee were held on 23 January, 4 June and 12 September and three meetings with physical presence on 8 March and 7 November 2024.

- Committee on Natural Gas Markets and Economic Regulation:
  - status of member states regarding hydrogen and biogas, technical requirements for hydrogen uptake in the transmission system, etc.;

- LNG market situation, contracts and case studies;
- biomethane in gas distribution systems;
- preparation and publication of a study on the topic: Innovations in regulation, coupling of gas and electricity markets;
- tariff structure in gas distribution systems;
- effect of digital transformation on gas markets;
- quantification of methane emissions;
- method of natural gas forecasting for regulatory purposes;
- assessment of security of natural gas supply and emergency procedures;

During 2024, four meetings of this committee were held, two of which were online on 25 January and 6 June, and two with physical presence on 7 March and 28 October 2024. The representative of the Energy Regulatory Commission was appointed as co-chair of the ERRA Gas and Economic Regulation Group.

- The Energy Transition Committee held three meetings in 2024 and worked on the following topics:

  - Work Plan of the Committee 2024-2026;
  - Discussion on Regulatory Roles in Facilitating Energy Innovation and Research;
  - Presentation of the report on the ERRA Study entitled "Grid Capacity Gap in the Era of Renewable Energy Breakthrough – Policies, Regulatory Context and Tools";
  - Exchange of experiences between Member States regarding the integration of renewable energy sources;
  - Discussion on renewable energy support measures, feed-in tariffs, feed-in premiums, auctions, etc. and their impacts on investors and other stakeholders, as well as on the dynamics of replacing fossil fuel energy production.

- Consumer Protection Working Group/Consumer Protection Working Committee:
  - Reporting on progress in countries on consumer protection innovations in the energy sector (presentations by all participants)
  - Activities of DSOs when consumers do not allow access to metering equipment (presentation by Moldova and Turkey)
  - Users of electric vehicles (presentations by all participants)
  - Work plan for 2024-2026
  - Presentation of the candidates for the Chair and Co-Chair of the Consumer Protection Working Committee for the period 2024-2026
  - Voting and publication of the election results
  - The role of the regulator in improving the customer experience of service providers (presentations by the regulator of Saudi Arabia and Georgia)
  - Improving the transparency of supply contracts in the retail market by introducing colour signals (presentation of the experience of the regulator of Greece)
  - Regulatory framework for dynamic pricing (presentation of the experience of the Greek regulator)
  - Vulnerable consumers (presentations from all participants)

- The place of consumers: all digital services that the Greek regulator offers to consumers
- Future planned activities of ERRA.

In June 2024, the Consumer Protection Working Group grew into a Consumer Protection Working Committee, rising in rank with the other committees within ERRA. A total of three meetings were held, of which two meetings were held by the Consumer Protection Working Group: on 5 and 6 March in Bucharest and 11 June (online), while the Consumer Protection Working Committee held one meeting on 16 and 17 October 2024 in Athens, Greece.

In April 2024, ERRA organized a training on "Mastering Communications for Difficult Regulatory Decisions", at which experiences in this segment were shared for the activities of the Energy Regulatory Commission.

9.3 EUROPEAN WATER REGULATORS (WAREG)

In 2023, the Energy Regulatory Commission, as full member, has participated in the work of the European Water Regulators – WAREG.

The European Regulators Association commenced its activities in April 2014. Following meetings and coordination sessions among Regulatory Bodies initiators for the creation of this platform, in December 2017, WAREG was registered as an Association of the European Water Regulators and was granted capacity of a legal subject with headquarters in Milan, Italy.

The Association with the Mission on cooperation of water regulatory bodies in Europe aims towards harmonization of differences in the National Framework on regulation and identification of requirements for mutual efforts in the resolution of common challenges, as well as the establishment of stable base in the regulation of water services in Europe.

The Association of the European Water Regulators with the regulatory and observer member bodies, require realization of the targets listed below:

- Exchange of mutual practices, information, joint analyses, and cross-reference of actual models for determination performances of enterprises on water supply;
- organization of specialized training, technical assistance, and exchange of experience;
- Promotion of best practices, and stable regulation of the water sector in European level, and
- Promotion of activities on cooperation with analysis on service sustainability, opportunities for respective infrastructure investments, standards on the service quality, and protection of consumers.

During 2024, the Energy Regulatory Commission, as full member took part in three meetings organized by the Association of the European Water Regulators, as follows:

- 31. WAREG General Assembly (Florence, Italy)
- 32. WAREG General Assembly (Skopje, North Macedonia); and
- 33. WAREG General Assembly (Brussels, Belgium)

- 32. WAREG General Assembly (Skopje, North Macedonia)

Within the framework of the regular assemblies of the European Water Regulators WAREG, the 32nd Assembly was held on 19 June 2024 in Skopje. The Energy Regulatory Commission was organizer and host of the mentioned event. Among other activities planned according to the agenda of the events, the main topic of discussion was the approval of the Association's budget for 2023, the sustainability of water services with a concrete presentation and examples from Scotland and the request of the Greek Regulator for Energy, Water and Waste Management (RAAEY) for access to full WAREG membership. The Energy Regulatory Commission received praise and was commended for organizing this international event.

Through periodic meetings, internal discussions on best practices and various case studies, member states assess areas where improvements and new approaches are needed. Using this opportunity, experience is collected from members, and an opportunity is created to establish a comprehensive and up-to-date database as a basis for information on the performance of the water sector in Europe.

Representatives of the Energy Regulatory Commission participated in several virtual meetings within this working group during 2024 and thus contributed to the building of the European Water Sector Database.

9.4 AGENCY FOR THE COOPERATION OF ENERGY REGULATORS (ACER)

The Energy Regulatory Commission is an observer in the Working Group for Electricity within the Agency for the Cooperation of Energy Regulators (ACER).

During 2024, eight meetings of the Electricity Working Group were held, in which a representative of the Energy Regulatory Commission participated electronically. Within the framework of this working group, issues related to the wholesale electricity market (balancing, organized market, bilateral agreements) are discussed, and in particular obligations from European Union legislation, network codes, etc. Several topics were discussed at the meetings, the most important of which were issues of security of supply, further integration of electricity markets, development of the balancing market and participation in capacity procurement platforms, integration of renewable energy sources, coordinated allocation of cross-border transmission capacities, possibilities for demand response, and more.

9.5 COUNCIL OF THE EUROPEAN ENERGY REGULATORS (CEER)

The Energy Regulatory Commission participates as an Observer in the work of the Council of European Energy Regulators (CEER) with Headquarters in Brussels, Belgium, and provides its contribution to the preparation of the appropriate reports.

The Council of European Energy Regulators with Headquarters in Brussels, Belgium, is established in 2000 as an Association for European Independent Energy Regulators Cooperation. There are 39 Regulatory Bodies taking part in the CEER, whereby, 30 share status as members (Austria, Belgium, Bulgaria, Croatia, Cyprus, CESKA, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Island, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Holland, Norway, Poland, Portugal, Romania, Slovenia, Slovakia, Spain,

Sweden, and the Great Britain), while 9 (nine) countries (Albania, Bosnia and Hercegovina, Gorgia, Kosovo, Moldova, Montenegro, North Macedonia, Serbia, and Switzerland) share the status of an Observer.

The Council of the European Regulators is constituted by a General Assembly, Board of Directors, six main working groups and other theme sub-groups. Taking participation in this Association, the Energy Regulatory Commission achieves significant experience in the practical implementation of the Third Energy Package Legislation on Energy Internal Market, and challenges to be met by the member states of the European Union in the creation of a single, competitive, efficient, and sustainable internal energy market of the European Union, also addressing the new packages of the European legislation.

9.6 ASSOCIATION OF MEDITERRANEAN ENERGY REGULATORS (MEDREG)

The Energy Regulatory Commission became a fully-fledged member of the Mediterranean Energy Regulators - MEDREG. During the 35th General Assembly of MEDREG, held on 15 June 2023 on Rhodos, Greece, a decision was made for membership of the Energy Regulatory Commission in this association.

MEDREG comprises 28 energy regulators from 23 countries, comprising EU, the Balkans, and the MENA region: Albania, Algeria, Bosnia and Herzegovina, Croatia, Cyprus, Egypt, France, Greece, Israel, Italy, Jordan, Lebanon, Libya, Malta, Montenegro, Morocco, North Macedonia, Palestinian directorate, Portugal, Slovenia, Spain, Tunisia, and Turkey.

MEDREG comprises the General Assembly and five working groups (working group on natural gas, working group on renewable energy sources, working group on consumers, Working group on electricity and Institutional working group) where the Energy Regulatory Commission has its own representatives.

On 27 September 2024 an online joint workshop MEDREG-ECRB was held to promote the renewable energy sources and energy efficiency which presented the following topics:

- MEDREG - country study: Portugal
- MEDREG - country study: Morocco
- ECRB - country study: Renewable energy sources development in North Macedonia
- ECRB - country study: Renewable energy sources integration in Bosnia and Herzegovina
- ECRB - country study: Stimulating progress of renewable energy sources in Ukraine
- ECRB - Report on renewable energy sources and flexibility: Preliminary insights
- Regulation on energy efficiency in the Mediterranean
- MEDREG - country study: France
- ECRB - country study: Energy efficiency comes first in the Energy Community

The Electricity Working Group held a working meeting on 1 October 2024 (online), which addressed the following topics:

- Analysis of the Mediterranean Electricity Market,
- A Concept for Promoting Investment and Infrastructure Development in the Mediterranean Region,
- Smart Meters and Necessary Conditions for Smart Grid Integration.

The Renewable Energy Working Group held a working meeting on 24 October 2024 in Milan, Italy, which addressed, among other things, the following topics:

- Report on the Regulatory Framework for the Development of Electricity Storage and Distributed Resources for Flexibility,
- Review of the Joint MEDREG-ECRB Workshop on the Promotion of Renewable Energy and Energy Efficiency.

The Working Group on Institutional Setup held a working meeting on 15 October 2024 in Milan, Italy, which, among other things, addressed the following topics:

- Analysis of the institutional setup report,
- The role of the regulatory body in opening up market competition,
- Presentation of the manner of setup and operation of the Energy Regulatory Commission.

The Working Group on Institutional Setup held a working meeting on 7 March 2024 (online), at which a draft version of the institutional setup questionnaire was reviewed.

The President and a representative from the professional service attended the 38th MEDREG General Assembly which was held on 3 and 4 December 2024 in Brussels, Belgium.

9.7 EUROPEAN INTEGRATIONS

The Energy Regulatory Commission significantly contributes to meeting the obligations assumed by the Republic of North Macedonia within the accession process with the European Union.

Pursuant to the Decision on Working Groups Establishment for the development of the National Program for adoption of the EU legislation, and the preparation of the negotiating positions for the negotiations for membership to the European Union (NPAA), the Energy Regulatory Commission shall take participation in the Working Group for Chapter 3.15 Energy and is preparing the part 3.15.2 of the Chapter referring to the field of Internal Energy Market.

The Energy Regulatory Commission has developed quarterly and mid-term reports on undertaken activities to the Internal Energy Market, and within the renewable energy sources, and submitting the reports to the Secretariat of European Affairs required for regular reporting to the European Commission, as well as for the requirements of the Report on 2024 Progress of the Country Membership in the European Union.

Representatives of the Energy Regulatory Commission participated at the 20th meeting of the Sub-Committee on transport, environment, energy and regional development which took place on 7 March 2024.

9.8 IMPLEMENTATION OF PROJECTS AND PARTICIPATION IN OTHER EVENTS

Cooperation with NARUC (National Association of Regulatory Utility Commissioners)

During 2024, the cooperation with NARUC continued successfully within the project on Energy Systems Cyber-Security with the participation of representatives of the Energy Regulatory Commission in numerous online workshops within this project.

In 2024, activities were implemented under the project Coupling of Electricity Markets between Albania, Kosovo, North Macedonia and Greece, which resulted from analyses of shortcomings among electricity market operators and transmission system operators.

With the Memorandum of Understanding, an implementation group composed of regulatory bodies was formed, as well as another working group composed of regulatory bodies. Representatives of the Energy Regulatory Commission participate in the work of these two groups.

On October 14, 2024, the IBWT (Italian Border Working Table Cooperation Regional Project) submitted a positive response to the request of April 22, 2024, for this regional project to be included within the IBWT.

In 2024, the implementation of the regional project of NARUK for the preparation of an assessment of regional resource adequacy continued, where the main bearers are the operators of the electricity transmission systems from the region.

In 2024, the implementation of the project for the advancement of women leaders in energy through the mentoring program continued, where among the mentor regulators from the United States of America, the mentor was the then member of the Energy Regulatory Commission, Andrijana Nelkova-Chuchuk. Furthermore, training was held in Skopje from June 24-26, 2024, with the aim of women as leaders to build a comprehensive set of skills that will contribute to the overall leadership ability of women, as well as strengthening their commitment to their own career advancement. During 2024, mentoring was also conducted with members of regulatory bodies from the United States of America.

Balkan Energy School - BES

The Balkan Energy School - BES is a non-profitable association established in 2022 with a seat in Milan in ARERA, the Italian Regulatory Authority for Energy, Networks and Environment. The purpose of this association is to promote debate and exchange of knowledge in the field of energy with a special focus on market development, regulation, and integration, considering new sustainability parameters. Members of BES are the regulatory bodies of Albania, Bosnia and Herzegovina, Greece, Italy, Montenegro, and North Macedonia, while the regulatory body of Serbia still has the status of observer.

The following activities were organized within the framework of BES:

- Several online meetings of the working groups within the framework of BES (strategic and implementation working groups) were held in which the Energy Regulatory Commission has its nominated members;
- The 4th General Assembly of BES was held online on March 19, 2024, and at the same time the BES Annual Report for 2023, the BES Financial Statements for 2023 were approved and a bid for the development of a website was selected;
- The 5th BES Seminar was held on April 4, 2024, in Milan and was dedicated to the CBAM Regulation and the role of regulatory bodies in relation to this regulation;
- On May 8, 2024, the report "Assessment of the Design and Performance of the Albanian Electricity Market" was presented in Tirana within the framework of the Knowledge Exchange Project (KEP) co-financed by the Central European Initiative entitled "Support to the Albanian Regulatory Authority to Improve the Efficiency of the Wholesale Electricity Market";
- The 6th BES Seminar was held on 9 May 2024 in Tirana, where the new design of electricity markets and its impact on the operation of regulatory bodies, organized market operators and transmission system operators were discussed;

- High-level Conference on Promoting Connectivity: Fostering Interconnectivity and EU Integration of the Eastern Partnership, which was held on 24 and 25 September 2024 in Rome, where the Energy Regulatory Commission participated with its representative in the panel discussion: The Balkan Experience in the East-West Electricity Transmission Corridor;
- The last two BES Seminars were held in Sarajevo on 12 and 13 November 2024, while the 5th BES General Assembly was held on 14 November. At these two seminars, experiences from the electricity markets of the Balkan countries were shared and for the first time, experiences from countries outside Europe were shared, i.e. the representative of the Energy Regulatory Commission shared the Chinese experience in terms of electricity production from renewable energy sources. At the 5th General Assembly, Mr. Saglia, a member of the board of the Italian regulatory body, was elected President of BES, then the BES Work Program for 2025 was adopted and the BES Budget for 2025 was adopted.

TAIEX Expert Mission on Transposition of EU Electricity Legislation

The Energy Regulatory Commission co-hosted a TAIEX Expert Mission on Transposition of EU Electricity Legislation with experts from the Balkan Energy School (BES) and representatives from the regulatory bodies of Italy and Greece. The aim of the TAIEX workshop was to exchange experiences in the transposition of EU electricity legislation. The workshop took place on 16 and 17 October 2024 in Skopje and was attended by representatives from all stakeholders in the electricity sector in the Republic of North Macedonia.

Workshop of the Regulatory Commission for Energy, Water and Municipal Waste Management Services of the Republic of North Macedonia and the Energy and Water Services Agency of Montenegro

The Energy Regulatory Commission in cooperation with the Energy and Water Services Agency of Montenegro held a workshop on 24 and 25 October 2024 in Budva, Montenegro, where the methodologies for calculating prices and tariffs in the field of electricity and water services were discussed. The aim of this workshop was to exchange experiences between these two regulatory bodies that are part of the Energy Community.

Energy education for the youngest!

The Energy Regulatory Commission launched an initiative for energy education for primary school children in 2024, with the aim of raising awareness about the importance of electricity, renewable sources and ways to use it rationally.

As part of this initiative, educational lectures were held in the following primary schools:
"Vera Ciriviri Trena", "Panajot Ginovski", "Kiro Gligorov", "Goce Delchev", "Lazo Angelovski" and "Kocho Racin". The lectures were intended for students aged 7 to 14, and the content was carefully adapted to the age and educational program. The youngest students are introduced to the basic concepts of energy - what is energy, what types exist, the difference

between renewable and non-renewable sources and how they can contribute to saving electricity in everyday life in a simple way. For older students, the lectures also cover topics related to the method of electricity production, as well as the role and responsibilities of the Energy Regulatory Commission in the energy sector. The lectures are conducted in an interactive manner, through quizzes, educational games and drawings, in order to present the topics in an understandable, interesting and impressive way. Experience so far has shown that children show a sincere interest and desire to learn more about energy and its importance for the environment and everyday life.

As part of this initiative, several educational and entertaining videos were recorded with the students of the "Panajot Ginovski" primary school, which were published on the official Facebook profile and YouTube channel of the Energy Regulatory Commission. These videos represent an additional tool for communication with the young audience and aim to strengthen interest in energy topics through a creative approach.

This activity represents an important step towards building energy-conscious generations, who will know how to use energy responsibly and sustainably.

FINANCIAL OPERATIONS

2024

X. FINANCIAL OPERATIONS

Pursuant to the Law on Energy*, Article 35, paragraph 1, the Energy Regulatory Commission is funded by its own sources of funds secured by:

- Collection of fees on issuing Licenses for Energy Activity Performance, i.e., entry in the Register of Foreign Traders and Suppliers of Electricity and Natural Gas granted to perform activity in the Republic of North Macedonia,
- Fees from the procedure for establishing tariffs on Water Services, i.e., regulatory tariff on Water Services,
- Collection of annual fees on holders of Licenses for Energy Activity Performance and foreign associations that perform energy activity in the Republic of North Macedonia and
- Special annual fee determined as a percentage of share from the total annual income of the Water Service Providers, achieved by providing water services.

The fee of 0.0364% of the overall annual revenue acquired by holders of Licenses for Energy Activity Performance, and of the annual revenue by the Water Service Providers under the water service provision, is in line with the Decision number 08-1960/1, adopted on 13 March 2024 by the Assembly of the Republic of North Macedonia ("Official Gazette of the Republic of North Macedonia'' no. 61/24).

10.1 FINANCIAL RESULTS OF THE OPERATIONS The Energy Regulatory Commission maintains the accounting records in accordance with the Law on Accounting for Non-Profit Organizations, the Rulebook on Accounting Plans of the Non-Profit Organizations, the Rulebook on Non-profitable Organizations Accounting Plan and Balance Sheet (Financial Balance Sheet / Statement), and the Rulebook on Non-profitable Organizations Individual Accounts of the Accounting Plan.

The recognition of the revenues and expenditures of non-profitable organizations is applied in accordance with the principle of modified incurred business changes, i.e., transactions.

The principle of modified incurred business changes, i.e., transactions means that revenues and expenditures are recognized for the calculation period they occur according to the criterion of measurability and availability. The revenues are measurable when they are expressed in value. The revenues are available when they are achieved in the calculation period or within 30 days after the expiry of the calculation period if the revenues refer to the calculation period and serve to cover the obligations of that calculation period.

The accounting principle of modified incurred business changes, i.e., transactions, means that expenditures are recognized in the calculation period during which they occurred or within 30 days after the expiry of the calculation period, of the obligation for paying occurred in that calculation period.

10.1.1 REVENUESThe overall collected revenues of the Energy Regulatory Commission for the period of 01. 01.2024 – 31.12.2024 are 123,749,750 MKD (Table 10.1), whereby:

121,202,739 MKD i.e., 97.95% revenues of paid fee of the license holders who perform energy activities, fee for issuance of licenses, fee paid by water service providers and fee of the procedure for determining tariffs of water services.

The other revenues amount to 2,547,011 MKD i.e., 2.05% collected through:

- Other revenues (interests of regular operation, based on court decisions, currency exchange difference, etc.) and amount to 238,053 MKD i.e., 0.19% of the total collected revenues, and
- Other incomes (based on (based on funds returned from the bank - guarantee) amounts to 2,308,958 MKD or 1.86%.

121,202,739 MKD in revenues of paid fee of the license holders who perform energy activities, fee for issuance of licenses, fee paid by water service providers and fee of the procedure for determining tariffs of water services (hereinafter: revenues of collected fees) are collected through:

- Fee paid by the license holders who perform energy activities in the amount of 106,438,988 MKD which participate with 87.82% in the revenues of collected fee,
- Fee paid by the water service providers in the amount of 1,745,939 MKD which participate with 1.44% in the revenues of collected fee,
- Revenues for issuance of licenses in the amount of 11,757,812 MKD which participate with 9.70% in the revenues of collected fee,
- Revenues of the procedure for setting tariffs for water services in the amount of 1,260,000 MKD which participate with 1.04% in the revenues of collected fee,

Table 10.1 Review of achieved revenue of operation by the Energy Regulatory Commission, for 2024

No.	REVENUES	2024	
		Collected MKD	Percentage of share in total revenues (%)
I .	**Overall revenues from operation (I.1. + I.2.)**	**123,749,750**	**100.00**
I.1.	Revenues of collected fees of license holders for energy activities performance, fees for issuing licenses, fees paid by water service providers, fees for the procedure on setting water service tariff (I.1.1+ I.1.2+ I.1.1+ I.1.4)	121,202,739	97.95
I.1.1	Fee of the overall revenue of holders of licenses for performing energy activities	106,438,988	86.01
I.1.2	Fee for license issuance	11,757,812	9.50
I.1.3	Water service provider fee	1,745,939	1.42
I.1.4	Fees of the procedure for setting water service tariffs	1,260,000	1.02
I.2	Other revenues	2,547,011	2.05
I.2.1	Other Revenues (interest on regular operation, court decisions, currency exchange differences and so on)	238,053	0.19
I.2.2	Other revenues (based on assets returned from bank)	2,308,958	1.86

Chart 10.1 presents the structure of accomplished revenues in 2024

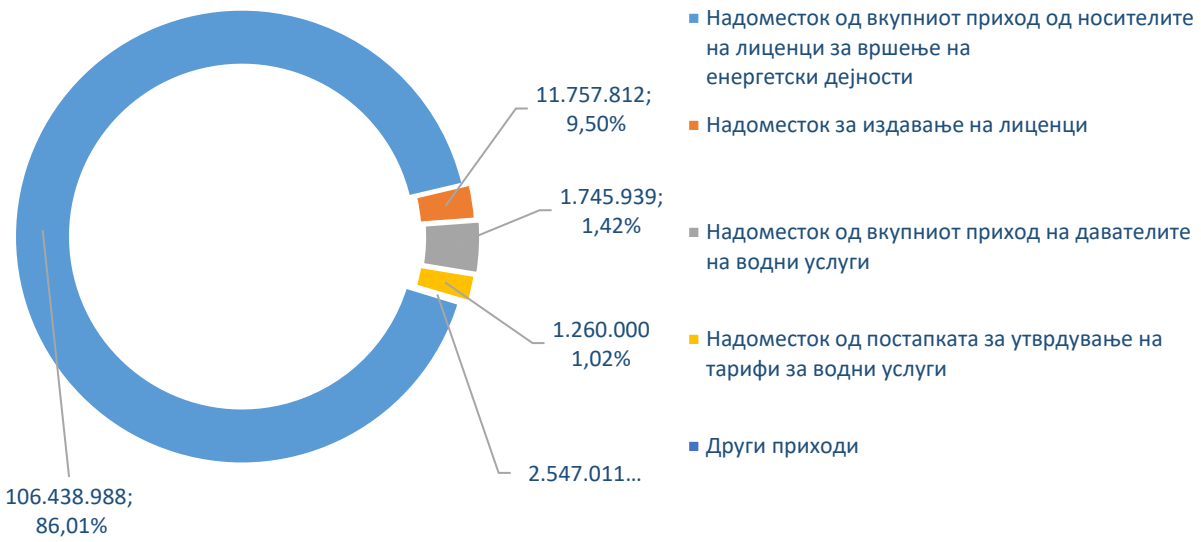


Chart 10.1 Structure of accomplished revenues in 2024

Pursuant to the Law on Energy* and the Rulebook on Calculation Plan and the Balances of Non-profitable Organizations, the surplus of revenues is transferable to the upcoming year.

10.1.2 EXPENDITURES

For realizing the competencies of the Law on Energy* and the Law on the Determination of Prices for Water Services, in 2024, the Energy Regulatory Commission has realized expenditures at the amount of 108,242,865 MKD. The expenditures are 47.02% lower than the planned ones (Table 10.2), due to rational efficient and effective operation of the Energy Regulatory Commission.

Table 10.2 Review of planned and accomplished revenue of operation by the Energy Regulatory Commission, for 2024

No.	EXPENDITURES	2024		
		Approved with the plan (MKD) (MKD)	Realized (MKD)	Achieved/planned (%)
I.1	**TANGIBLE EXPENDITURES SERVICES AND DEPRECIATION**	27,709,664.00	19,119,932.00	69.00
1	Tangibles	970,000.00	404,309.00	41.68
2	Energy costs	3,500,000.00	1,764,972.00	50.43
3	Other services and investments	10,019,664.00	5,387,200.00	53.77
4	Transportation services	6,450,000.00	5,698,700.00	88.35
5	Representation costs	1,650,000.00	1,612,889.00	97.75
6	Lease	2,000,000.00	1,140,974.00	57.05
7	Other tangible expenditures, unforeseen and expenditures for cooperation with other regulatory bodies	3,120,000.00	3,110,888.00	99.71
I.2	**OTHER EXPENDITURES**	14,824,440.00	11,545,114.00	77.88
8	Transaction provisions	150,000.00	141,472.00	94.31
9	Insurance costs	600,000.00	456,805.00	76.13
10	Costs for business travel in the country and abroad	4,400,000.00	4,271,113.00	97.07
11	Expenses incurred by workers and citizens	3,401,440.00	2,552,493.00	75.04
12	Membership fees	1,310,000.00	1,043,325.00	79.64
13	Intellectual and other services (negative exchange rate difference)	4,963,000.00	3,079,906.00	62.06
I.3	**CAPITAL AND OTHER ASSETS**	93,936,500.00	8,691,817.00	9.25
14	Assets for construction materials	0.00	0.00	0.00
15	Assets for Accounting equipment, software and software licenses	5,060,500.00	4,788,968.00	94.63
16	Purchase of vehicles	0.00	0.00	0.00
17	Purchase of furniture	900,000.00	0.00	0.00
18	Purchase of other equipment	200,000.00	0.00	0.00
19	Procurement of additional business space in the existing building	87,776,000.00	3,902,849.00	4.45
I.4	**SALARIES AND CONTRIBUTIONS OF SALARIES**	93,752,808.00	68,886,002.00	73.48
II.	**OVERALL EXPENDITURES (I.1+ I.2+ I.3+ I.4)**	230,223,412.00	108,242,865.00	47.02

The purpose of exploitation of assets following respective expenditures categories is listed below:

- The category of tangibles refers to office consumables; and maintenance consumables, other tangibles and assets on consumables for procurement of small inventory and purchase of auto-tires;
- The category of energy expenses refers to electricity and fuel;
- Other services refer to consumed assets: For investment maintenance of basic and transportation means, public calls, printing, hygiene, for software maintenance (for adaptive maintenance of the webpage), archive and accounting operation and publication of acts in the „Official Gazette“ etc.;
- The category transportation – communication services refer to expenses on telephone services, post-mailing services, Internet, and subscription to Platts,
- Representation costs
- The category of expenses on leases refers to incurred costs for lease of equipment, lease of business premises
- Other material expenditures refer to the expenses listed below: For professional literature, seminars, for vehicle registration, cooperation with regional bodies, etc.
- The category of expenses on insurance refers to costs on insurance of administration building, elementary and transportation costs, travel insurance of employees, collective insurance of employees and life insurance;
- The category of per diem expenses refers to per diem costs for business trips in the country and abroad, transportation costs, accommodation, parking and toll fees, etc.
- The category of expenses on employment refer to costs incurred on repayment of regress on employment, severance pay for retirement, mandatory health check, jubilee award and other compensation in accordance with the Collective Employment Agreement of the energy Regulatory Commission;
- The category of expenses on membership fees refer to costs on membership to ERRA, CEER, WAREG and MAKO CIGRE;
- The category of expenses on intellectual and other services incurred by costs on lawyer and notary services, contract fees, consultation services, and other intellectual services;
- The category of other expenses refers to costs based on currency differences, mandatory systematic examination of employees, etc.;
- The category of capital and other assets refers to costs on procurement of equipment for automatic processing of data, office furniture, licenses and other equipment required for operation of the Energy Regulatory Commission, and
- The category of expenses on salaries and salaries contributions refers to costs incurred for salaries and contributions for employees in the Energy Regulatory Commission.

Annex 12.6 and 12.7 provides an overview of the Balance Statement of Revenues and Expenditures for the period from 01.01.2024 - 31. 12. 2024, and the Balance Sheet Statement of 12/31/2024.

ACTIVITIES IN 2025

2025

XI. ACTIVITIES IN 2025

In 2025, the Energy Regulatory Commission continues in full capacity and using new IT-tools to professionally fulfil its legal authorizations, to work on improving the regulatory framework from the aspect of transparency, equality, and non-discrimination of energy market participants, which shall contribute to improve the services and offers to end users, that is, consumers.

IN 2025, the Energy Regulatory Commission, in the part related to the electricity, shall continue to monitor the situation in the Electricity Market in the Republic of North Macedonia, foremost in the transparent operation of participants in the electricity market, consumer protection in the aspect of accomplishing their rights to electricity supply, and the right to quality and permanent delivery of electricity through the electricity transmission and electricity distribution network (grid), especially:

- It shall monitor the functioning of the electricity power system in terms of safety of supply, i.e., its possibility to provide balance between supply and electricity needs;
- It shall work for issuing, changing, and extending licenses for performing energy activities in the field of electricity, foremost for electricity production, trade and supply;
- It shall adopt decisions for maximum allowed revenue and tariffs for regulated energy activities;
- Shall continue monitoring the situations in the Electricity Market in the Republic of North Macedonia, foremost in the transparent operation of participants in the electricity market, consumer protection in the aspect of accomplishing their rights to electricity supply, and the right to quality and permanent delivery of electricity through the electricity transmission and electricity distribution network (grid),
- In the domain of regulatory issues, it shall work for possible coupling of day-ahead of markets with electricity markets of neighbouring member states of the European Union and other neighbouring countries;
- Shall monitor the implementation of by-laws, and if necessary adequate changes shall be proposed;
- Shall conduct procedures for approving the acts of the operators of adequate systems, which derive from the Law on Energy*;
- After the entry into force of the new Law on Energy, in 2025, work will be carried out for adopting relevant by-laws in the area of electricity,
- Shall participate in the work in the field of electricity in the international organizations of which it is a member.

The main focus in the field of natural gas during 2025 is expected to be:

- Monitoring of the functioning of the natural gas market,
- Adoption of decisions for maximum allowed revenue and tariffs for regulated energy activities in the area of natural gas,

- working on the procedures for issuing, amending, and extending licenses for performing energy activities in the field of natural gas,
- implementing procedures for approving acts of the operators of the relevant systems arising from the Energy Law*,
- monitoring the implementation of the bylaws and, if necessary, proposing appropriate amendments,
- preparing the appropriate bylaws after the new Energy Law enters into force*,
- participating in the work in the field of natural gas in international organizations of which it is a member.

In the field of crude oil, oil derivatives and transport fuels, the Energy Regulatory Commission during 2025:

- will continue to actively monitor the oil and oil derivatives market, from the aspect of security of supply, i.e. its ability to ensure a balance between supply and demand for oil derivatives and transport fuels,
- will make decisions on the highest retail prices of oil derivatives,
- will work on the procedures for issuing, amending, and extending licenses for performing energy activities in the field of crude oil, oil derivatives and transport fuels,
- will monitor the fulfilment of obligations arising from the issued licenses in the field of crude oil, oil derivatives and transport fuels,
- will prepare the appropriate by-laws after the entry into force of the new Energy Law*.

In the area of district heating, during 2025 the Energy Regulatory Commission:

- will continue to actively monitor the district heating market in order to protect consumers for quality and timely supply of district heating;
- It shall adopt decisions for maximum allowed revenue and tariffs for regulated energy activities;
- will monitor the fulfilment of obligations arising from the issued licenses in the field of district heating,
- Shall monitor the implementation of by-laws, and if necessary adequate changes shall be proposed;
- implementing procedures for approving acts of the operators of the relevant systems arising from the Energy Law*,
- will prepare the appropriate by-laws after the entry into force of the new Energy Law*.
- Will proceed upon petitions, complaints and dispute resolution in the field of district heating.

The Energy Regulatory Commission shall continue implementing the activities which are performed in accordance with the Law on Setting the Prices for Water Services. The key

activities in 2025 will be aimed at monitoring the application of water service prices and the compliance of the application of water service tariffs with the implementation of the business plans of water service providers adopted for the regulated period 2024-2026 for water service providers in areas with more than 10,000 population equivalent, as well as for 2025-2027 for water service providers in areas with under 10,000 population equivalent.

The Energy Regulatory Commission will begin preparatory activities for setting municipal waste tariffs in 2025.
It will also participate in the project "Regional Solid Waste Project - Corporate Development and Institutional Support", financed by SECO, EBRD and the Ministry of Finance, within which amendments to the Law on Waste Management should be developed, by-laws and a methodology for setting municipal waste tariffs will be developed, work will be done to upgrade the platform for setting water service tariffs with municipal waste tariffs, and training and education of employees in the Energy Regulatory Commission for the implementation of the regulation of municipal waste tariffs will be provided.

In the area of information technology, the following activities are planned for 2025:

- connecting part of the information systems in the Energy Regulatory Commission with the National Interoperability Platform and the National Portal for e-services, in order to make services more accessible to companies and citizens;
- implementation of the Cybersecurity Rules in the Electricity Sector;
- monitoring of certification in accordance with the ISO 9001:2015 standard;
- certification of the systems in the Energy Regulatory Commission in accordance with the ISO 27001 standard - Information Security Management System.

In 2025, the Energy Regulatory Commission will continue to actively implement all legal competencies with the aim of:

- enabling competitive, stable and sustainable energy markets in the Republic of North Macedonia and their inclusion in regional and international energy markets in cooperation with the institutions of the Energy Community, and in particular with the Energy Community Board of Regulators and the regulatory bodies of other contracting parties and participants in the Energy Community;
- removing restrictions on trade in electricity and natural gas, including adequate cross-border transmission capacities to meet demand and facilitating electricity and natural gas flows in the Energy Community;
- development of secure, reliable and competitive energy systems oriented towards consumers, with the lowest possible cost;
- optimizing the use of electricity and natural gas by electricity, natural gas and heat companies in order to improve energy efficiency by providing energy management services, introducing advanced metering systems and smart grids;
- facilitating access for new participants in the energy markets and for energy produced from renewable energy sources;

- appropriate short-term and long-term incentives for operators and users of transmission and distribution systems in order to increase the efficiency of the systems and accelerate the integration of the markets;
- protecting consumers and promoting effective competition, so that consumers benefit from the efficient and competitive functioning of the energy markets in the country;
- supervising the fulfilment of the conditions, rights and obligations of the performers of regulated energy activities that are determined by the Law on Energy* and the by-laws adopted on the basis of this Law;
- achieving high standards in fulfilling the obligation of the public and/or universal service in the supply of electricity, natural gas and heat and contributing to the protection of vulnerable consumers;
- monitoring the operation and fulfilment of the legal obligations of energy activity providers according to the deadlines and dynamics set out in the Law on Energy* and the by-laws adopted on the basis of this Law;
- continuous preparation of rulebooks, decisions, conclusions, instructions and other general and special legal acts adopted by the Energy Regulatory Commission;
- activities in accordance with the competencies of the Energy Regulatory Commission provided for by the Law on Municipal Waste;
- implementation of requests for public information in accordance with the Law on Free Access to Public Information;
- continuous scheduling of main and preparatory sessions, official meetings and events;
- human resources management, adoption of an annual employment plan and a report on its implementation, a generic training plan and a report on its implementation;
- preparation of a public procurement plan and monitoring of its implementation;
- monitoring of the financial plan for the current year;
- preparation of invoices for compensation in accordance with Article 35 of the Energy Law;
- implementation of procedures for voluntary and compulsory collection of unpaid receivables;
- preparation and adoption of a draft financial plan in accordance with the provisions of the Energy Law*; and
- keeping accounting records.

XII. ANNEXES

Annex 12.1 Electricity production by domestic producers from 2014 to 2024

Years	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
GWh	4,982.30	5,271.5	5,302.7	5,229.0	5,287.5	5,655.5	5,128.3	5.284, 8	5,634.23	6,552.59	6,128.55
JSC ESM (former JSC ELEM)	4,535.00	4,741.8	4,299.9	4,080.1	4,114.3	4,283.7	3,642.8	3,273.60	3,754.98	4,054.59	3,573.39
TPP Production	3,506.40	3,092.7	2,699.1	3,145.1	2,613.0	3,293.8	2,509.8	2,078.30	2,621.64	2,685.81	2,355.22
TP Bitola	3,316.80	2,986.2	2,672.3	3,076.1	2,545.3	3,200.9	2,415.1	1,864.40	2,354.20	2,511.07	2,163.52
TP Oslomej	189.60	106.5	26.8	69.0	67.7	92.9	94.7	213.90	267.44	174.74	191.70
TPP NEGOTINO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.00	412.00	346.24	0.00
HPP Production	958.20	1,528.3	1,490.1	816.1	1,391.1	879.5	965.3	1,078.60	985.17	1,216.26	1,060.18
HPP Mavrovo	398.00	438.9	553.2	393.3	433.5	418.0	386.7	423.50	368.23	496.20	493.32
HPP Shpilje	190.30	303.7	353.2	157.5	366.7	172.6	204.6	257.90	223.67	254.31	232.47
HPP Tikvesh	116.10	312.8	145.2	63.1	138.1	67.5	98.6	90.50	101.50	112.41	70.27
HPP Globochica	136.20	225.5	232.6	96.9	229.3	112.7	137.7	160.50	145.97	154.95	138.96
HPP Kozjak	80.40	171.6	142.8	71.0	156.7	73.1	95.8	97.90	98.80	135.44	84.46
HPP SVETA PETKA	37.20	75.8	63.1	34.3	66.8	35.5	41.9	48.20	47.00	62.95	40.69
WP Bogdanci	70.40	120.8	109.5	110.5	97.3	101.8	116.9	103.30	107.66	111.60	106.06
TE– TO Subsidiary Energetika	0.00	0.0	1.2	8.4	12.9	8.6	8.00	0.00	0.28	0.00	0.00
KOGEL Sever	1.20	0.7	3.7	7.0	0.0	0.0	42.8	13.90	40.23	40.92	51.93
TE-TO JSC	189.80	177.8	550.1	794.7	716.6	987.0	1,067.8	1,503.20	926.81	1,307.00	1,207.00
SHPP	241.90	308.4	389.3	271.8	379.2	304.0	322.05	375.00	412.22	431.74	355.53
FEC (PVPP)	14.30	22.6	23.7	23.9	23.3	25.6	37.3	52.00	76.84	298.01	852.52
TPP using biogas	0.00	20.2	36.0	51.6	54.1	55.1	57.3	54.00	51.38	62.14	52.58
VEC (WPP)									0.00	52.87	87.53

Annex 12.2 Feed-in tariffs determined in the decree on the measures for supporting electricity production from renewable energy sources and prescribed total installed capacity of power plants, for which feed-in tariffs are allocated with the decision on installed capacity of preferential electricity producers

Type of power plant	Upper limit of installed capacity of the Power Plant	Amount of feed-in tariff	Period of use of feed-in tariff	Prescribed total installed capacity
Hydro power plant	**10 MW**	For monthly quantity of delivered electricity by blocks: Block I: **12,00 €¢/kWh** (≤ 85.000 kWh) Block II: **8,00 €¢/kWh** (> 85.000 и ≤ 170.000 kWh) Block III: **6,00 €¢/kWh** (> 170.000 и ≤ 350.000 kWh) Block IV: **5,00 €¢/kWh** (> 350.000 и ≤ 700.000 kWh) Block V: **4,50 €¢/kWh** (> 700.000 kWh)	**20 years**	
Wind power plants (wind parks)	**50 MW**	**8,9 €¢/kWh**	**20 years**	**160 MW**
Thermal power plants using biomass	**≤ 3 MW** (Up to 6/30/2021) **≤ 1 MW** (As of 7/01/2021)	**18 €¢/kWh**	**15 years**	**10 MW**
Thermal power plant using biogas	**≤ 3 MW** (Up to 6/30/2021) **≤ 1 MW** (As of 7/01/2021)	**18 €¢/kWh**	**15 years**	**20 MW**

Annex 12.3 Paid assets for produced electricity from preferential producers in 2024 (MKD, no VAT)

No.	Name of power plant with preferential status	Installed capacity (kW)	Produced electricity in 2024 (kWh)	Amount (MKD, no VAT)
1	MHE OHRID 1	117	196,586	1,452,197
2	MHE OHRID 2	320	1,085,116	7,357,479
3	MHE OHRID 3	229	613,822	4,411,173
4	MHE DABNISHTE	32	133,784	987,876
5	HYDROENERGO PROEKT BITOLA	400	1,629,844	10,525,900
6	MHE KRKLJANSKA REKA	384	747,352	5,030,338
7	MHE SLATINO	560	1,198,609	7,488,632
8	MHE BRBUSHNICA	576	1,320,020	8,193,349
9	MHE KRANSKA REKA	584	1,483,103	8,255,127
10	MHE KRIVA REKA 2	584	1,615,770	9,363,327
11	MHE BRAJCHINO 1	704	1,851,501	9,840,603
12	MHE KAMENICHKA REKA	1200	3,335,276	16,435,984
13	MHE LJUBANSKA	234	514,968	3,685,974
14	MHE PESOCHAN Ref. No. 393	990	3,687,039	17,603,272
15	MHE SELECHKA REKA	1720	4,092,117	18,467,312
16	MHE ZELEN GRAD	130	125,601	927,631
17	MHE BRESTJANSKA	666	1,957,696	10,606,356
18	MHEC MINI TURIJA	160	447,044	3,302,291
19	MHEC 350 GRADECHKA	920	2,257,236	12,139,745
20	MHE TRESONCHE Ref. No. 11	1980	4,683,228	21,117,615
21	MHE PESOCHAN Ref. No. 392	1125	4,084,767	18,748,864
22	MHE GOLEMACHA - Ref. No. 259	423	1,509,281	9,261,369
23	MHE MALA REKA - Ref. No. 258	270	629,683	4,467,935
24	MHE DOBRENOEC	480	2,643,762	14,291,008
25	MHE BISTRICA-97	2640	5,643,252	23,557,351
26	MHE BISTRICA-98	3200	5,717,214	23,753,738
27	MHE BRAJCHINO - 2	1472.5	3,077,580	14,104,122
28	MHE GALICHKA REKA 3	1282.5	1,727,937	9,508,736
29	HEC 372 ESHTEREC Ref. No. 372	376	279,789	2,066,820
30	MHE BISTRICA 99	3280	5,359,074	22,202,807
31	MHEC EXPLOITATION MINIMUM	320	883,766	6,321,538
32	MHEC BRZA VODA 3	720	271,840	1,972,817
33	MHEC BRZA VODA 2	960	775,480	4,725,091
34	MHEC BRZA VODA 1	960	489,770	3,154,768
35	MHE PATISHKA REKA	712.5	1,661,734	9,481,836
36	MHE GOLEMO ILINO	464	1,295,326	8,049,092
37	MHE BACHISHKA REKA 2	1170	3,510,699	16,511,558

38	MHE KUSHNICA	247.5	681,278	4,786,014
39	MHEC KAMENA REKA 125	2400	3,774,600	17,084,826
40	HEC 236 KONJARKA	1000	2,985,480	15,311,748
41	MHE KRIVA REKA 1	540	1,700,876	9,925,662
42	MHE KRIVA REKA AND TORANICA	990	3,044,671	15,080,607
43	MHE BOSHAVA 1	2800	3,742,964	16,978,749
44	MHE BOSHAVA 2	2800	3,577,872	15,951,639
45	MHE BOSHAVA 3	1920	0	-
46	MHE BOSHAVA 4	1920	0	-
47	MHE BOSHAVA 5	1440	1,494,118	7,710,477
48	MHE KAZHANI Ref. No. 208	1064	2,596,652	12,007,811
49	MHEC VEJACHKA REKA Ref. No. 93	1306.4	2,319,214	12,361,338
50	MHE JABLANICA Ref. No. 399	3280	8,977,912	34,304,742
51	MHEC ESHTERICHKA Ref. No. 373	567	386,574	2,855,384
52	MHEC KLEPALSKA Ref. . No. 322	252	511,110	3,646,614
53	MHEC KLEPALSKA Ref. . No. 321	172	346,003	2,556,223
54	MHE BANJANI Ref. . No. 116	132	197,103	1,456,055
55	MHEC Konjarka Ref. . No. 235	1000	3,011,964	15,378,712
56	MHEC BREGALNICA Ref. No. 329	684	1,214,523	7,214,488
57	MHEC DUPNICA	990	1,422,148	8,297,089
58	MHEC BELICHKA Ref. No. 52	765	845,559	5,748,885
59	MHEC BREGALNICA Ref. . No. 325	351	1,379,320	8,441,200
60	MHEC LJUTACHKA Ref. . No. 326	918	545,610	3,952,825
61	MHE BACHISHKA REKA 1 Ref. No. 27	1440	4,346,378	19,300,599
62	MHEC SHEMNICA	800	2,061,210	10,239,870
63	MHEC BOSHAVICA	981	1,289,062	7,589,385
64	MHEC Banjanska Ref. . No. 115	293	493,717	3,507,075
65	MHEC MAVROVO 1 - BELICHICA	80	176,233	1,301,860
66	MHEC MAVROVO 2 - KAKACH	124	155,015	1,145,315
67	MHE VRANOVSKA Ref. No. 312	792	1,591,414	8,609,077
68	MHEC TIKVESH 2	2240	8,847,183	31,717,910
69	MHE RECHICA AND GRMESHNICA No. 378	720	1,710,767	9,681,081
70	MHEC KONSKA REF. NO. 184	990	1,055,560	6,212,953
71	MHE PADALISHKA REF. NO. 14	480	729,363	4,947,630
72	MHE Gabrovska Reka - Ref. No. 103	1800	5,024,732	34,520,329
73	MHEC Ordanska reka ref. No. 105	360	752,346	5,255,385
74	MHEC Ordanska reka ref. No. 106	306	571,779	4,094,974
75	HEC Filternica	408	1,407,964	7,970,064
76	HEC Dovledzik	472	287,834	1,987,956
77	MHE TOPOLKI 317	1997.5	4,106,820	17,588,504
78	MHEC KOVACHKA ref. No. 21	504	742,200	5,135,298
79	MHEC KOVACHKA ref. No. 22	504	987,729	6,525,531
80	MHEC KOVACHKA ref. No. 23	990	1,892,834	10,541,694
81	MHE TOPOLKI 316	2880	7,921,428	29,311,555

82	MHEC KRAPSKA ref. No. 45	693	498,655	3,380,074
83	MHE TOPOLKA 315	2160	3,952,800	17,213,310
84	MHEC ZHABA ref. No. 254	230	524,137	3,638,983
85	MHEC OSTRILSKA ref. No. No. 253	432	360,257	2,530,978
86	MHEC GRADISHTE	672	2,736,457	15,106,990
87	MHEC EHLOEC	799	2,766,649	13,795,877
88	MHEC VIROVO	459	1,329,181	8,439,389
89	MHEC 123 Kriva Reka	1872	4,659,138	20,718,189
90	ХЕЦ 277	238.5	426,307	3,146,625
91	SHTALKOVSKA ref. No. 364	306	29,330	216,437
	I . Total small HPP	**86,907.40**	**180,726,696.00**	905,793,616
92	SIETO	10.20	13,767	389,642
93	GEO-LINK	49.72	54,073	1,264,148
94	MAVIS	250.00	356,786	8,999,876
95	ALFA INZENERING	49.73	57,321	1,622,296
96	INTEGRAL	49.90	38,435	709,367
97	MEGA SOLAR	996.70	1,545,496	38,984,273
98	FOTON BOSILOVO	11.50	7,395	209,295
99	TEKOMA	777.00	970,671	15,527,110
100	GEO SOLAR 1	49.92	74,757	1,379,822
101	EVR 92 KOCHANI	49.765	65,889	1,216,108
102	ENSOL	299.88	406,770	6,507,025
103	CHELSI SOLAR 1	49.92	47,935	884,817
104	CHELSI SOLAR 2	49.92	75,994	1,402,765
105	KARADZINEC 1	49.68	61,458	1,134,377
106	TORPEDO SOLAR GT	993.6	1,499,892	23,993,426
107	SOLAR INVEST 1	41.76	54,680	1,009,231
108	LAGOVO	999.12	1,702,416	27,232,945
109	ENERGO VEVCHANI	400	433,864	6,940,367
110	AB SOLAR 1	439.575	565,418	9,044,628
111	AB SOLAR 2	705	913,806	14,617,670
112	HRIST SOLAR	49.44	37,750	696,768
113	SOKOLARCI - HEI	49.92	55,787	1,029,668
114	PVPP FOTOLARIS MIT	49.68	81,384	1,502,222
115	SKOLARCI-ELPROMTREJD	49.92	60,550	1,117,626
116	GEO SOLAR 2	54.72	69,384	512,250
117	GEO SOLAR 3	54.72	71,135	525,197
118	SVEMEK	299.25	256,783	4,107,176
119	TOP SOLAR	49.98	56,314	1,039,393
120	TOTAL SOLAR	49.98	57,663	1,064,308
121	SOLARSANS KM 1	49.68	53,953	398,333
122	SOLARSANS KM 2	49.68	65,377	482,625
123	AGROSTRISOVCI	39.96	32,415	598,182
124	PHPP BEL KAMEN	9.8	9,572	176,672

125	KARADZINEC 2	49.68	63,808	1,177,747
126	FEC DUBROVO	949.9	1,259,982	20,153,789
127	MORANE	49.68	34,610	638,789
128	ESI SOLAR	999.22	1,402,374	10,353,902
129	EURO SOLAR	999.22	1,393,617	10,289,250
130	SONCHEV PARK KADINO - 2	33.5	44,868	828,145
131	DA-MA	49.75	72,423	534,698
132	DA-MA 2	49.75	73,788	544,789
133	DA-MA 3	49.75	73,898	545,604
134	KIRA	49.75	73,890	545,536
135	КИРА-2	49.75	74,526	550,238
136	APECE 1	49.75	73,531	542,892
137	DN SOLAR	49.75	71,683	529,250
138	GENCHEV	49.75	67,192	496,075
139	FILTEKO SOLAR	49.75	71,536	528,150
140	MV SOLAR DONCHEVI	49.75	66,592	491,643
141	MV	99.5	75,895	560,313
142	PVPP 45 KW	45	54,819	1,011,806
143	PHPP PREMIUM SOLAR	49.68	63,788	627,930
144	PETROV SOLAR	49.68	72,990	538,913
145	RALEV SOLAR	49.68	77,066	568,984
146	ВЕВЧАНИ-2	49.75	63,461	624,729
147	DE-KA ENERGIJA	49.75	74,096	547,059
148	KALOJANI GP 1.1	49.64	64,679	477,533
149	KALOJANI GP 1.2	49.64	65,874	486,362
150	KALOJANI GP 1.3	49.64	67,008	494,734
151	KALOJANI GP 1.4	49.64	67,322	497,052
152	KALOJANI GP 1.5	49.64	66,099	488,024
153	KALOJANI GP 1.6	49.64	66,130	488,251
154	KALOJANI GP 1.7	49.64	63,986	472,427
155	KALOJANI GP 1.8	49.64	64,404	475,508
156	LAZARO	49.75	73,199	540,438
157	JAKO SOLAR	49.75	69,614	513,960
158	ENERGO-SDL EH1	49.75	68,659	506,914
159	ENERGO-SDL EH2	49.75	71,042	524,506
160	ENERGO-SDL	49.75	67,673	499,636
161	ENERGOPOWER-H E1	49.75	68,592	506,417
162	ENERGOPOWER-H E2	49.75	68,931	508,917
163	ENERGOPOWER-H	49.75	62,151	458,856
164	MAL-INZENERING	45.25	57,367	564,646
165	DINO DINAMIKS	44	48,908	481,427
166	FOCKO	49.5	64,704	636,958
167	METALOSOLAR	49.92	67,703	666,471
168	FEC FOTOVOLT BELCHISHTA	47.25	57,936	570,367

169	NINE SOLAR	107.1	149,128	1,101,021
170	TAN SOLAR	49.92	42,501	418,366
	II. Total Photovoltaic system	**12,339.42**	**16,818,933**	241,928,630
171	WIND PARK BOGDANCI	**36,800**	106,056,370	580,895,206
172	WIND PARK BOGOSLOVEC	**36,000**	57,188,904	313,034,220
173	BINERGIJA	**600**	0	-
174	VARDAR BIO PROCES 2	**999**	8,390,420	92,935,560
175	VARDAR BIO PROCES 3	**999**	8,178,558	90,589,365
176	VARDAR BIO PROCES 1	**999**	8,375,146	92,765,702
177	BIOGAS SARAMZALINO	**1,998**	13,945,881	154,417,253
	Total preferential producers (I+II)	**177,642**	**399,680,908**	2,472,359,552

ANNEX 12.4 Amount of tariffs for calculation elements for distribution of electricity of Elektrodistribucija

	Category Connection	Capacity (mkd/ kWh)	Activated EE (mkd./ kWh)	Reactivated EE (mkd/kVAr)
2018	MV1	74.86	0.2298	0.0098
	MV2	151.8	0.2865	0.0325
	LV1.2	217.98	0.3452	0.0559
	LV1.1		1.1162	*
	LV2	*	1.8864	*
2019	MV1	82.32	0.2199	0.0177
	MV2	155.41	0.3045	0.0515
	LV1.2	246.19	0.3811	0.0821
	LV1.1	*	1.2137	*
	LV2	*	1.9808	*
2020	MV1	103.04	0.0388	0.0155
	MV2	197.24	0.11	0.044
	LV1.2	296.48	0.1789	0.0716
	LV1.1	*	1.1199	*
	LV2	*	1.7982	*
7.2021	MV1	109.79	0.3170	0.0166
	MV2	209.71	0.3933	0.0472
	LV1.2	321.32	0.4654	0.076
	LV1.1	*	1.5766	*
	LV2	*	2.0521	*
12.2021	MV1	145.03	0.3983	0.0230
	MV2	299.99	0.5108	0.0680
	LV1.2	453.63	0.6269	0.1144
	LV1.1	*	2.2607	*
	LV2	*	2.8232	*
7.2022	MV1	165.84	0.4144	0.0295
	MV2	331.43	0.5502	0.0838
	LV1.2	537.61	0.6774	0.1347
	LV1.1	*	2.4907	*
	LV2	*	3.3742	*
12.2022	MV1	154.04	0.3796	0.0273
	MV2	309.11	0.5090	0.0791
	LV1.2	502.84	0.6279	0.1267
	LV1.1	*	2.3144	*
	LV2	*	2.6795	*
	MV1	165.17	0.0751	0.0300

6.2023	MV2	332.92	0.2125	0.0850
	LV1.2	541.20	0.3391	0.1356
	LV1.1	*	2.2065	*
	LV2	*	2.3648	*
12.2023	MV1	185.78	0.0858	0.0343
	MV2	375.85	0.2415	0.0966
	LV1.2	619.28	0.3837	0.1535
	LV1.1	*	3.0451	*
	LV2	*	2.0096	*
12.2024	MV1	198.01	0.3976	0.0350
	MV2	398.20	0.5633	0.1013
	LV1.2	657.24	0.7110	0.1603
	LV1.1	*	3.4737	*
	LV2	*	2.1418	*

ANNEX 12.5 Amount of tariffs for calculation elements for distribution of electricity of JSC ESM Skopje

Year	Category Connection	Capacity (mkd/ kWh)	Activated EE (mkd./ kWh)	Reactivated EE (mkd/ kWh)
2018	High voltage	19.0951	0.2115	0.0846
	Medium voltage	88.746	0.2468	0.0987
	Low voltage	*	1.2918	0.5167
2019	High voltage	16.0202	0.1798	0.0719
	Medium voltage	79.5747	0.2029	0.0812
	Low voltage	*	1.1385	0.4554
2020	High voltage	13.619	0.0096	0.0038
	Medium voltage	72.3781	0.0344	0.0138
	Low voltage	*	0.9267	0.3707
6.2021	High voltage	17.4753	0.223	0.0892
	Medium voltage	69.4945	0.2938	0.1175
	Low voltage	*	0.1489	0.4596
12.2021	High voltage	34.1304	0.3251	0.1300
	Medium voltage	86.1496	0.3958	0.1583
	Low voltage	*	1.2510	0.5004
6.2022	High voltage	31.6108	0.3303	0.1321
	Medium voltage	83.6300	0.4010	0.1604
	Low voltage	*	1.2562	0.5025
12.2022	High voltage	27.8692	0.3043	0.1218
	Medium voltage	74.31	0.3788	0.1516
	Low voltage	*	1.2292	0.4918
6.2023	High voltage	13.7936	0.0264	0.0106
	Medium voltage	64.3155	0.1054	0.0422
	Low voltage	*	1.0167	0.4067
01.2024	High voltage	17.0683	0.0327	0.0131
	Medium voltage	79.8879	0.1324	0.0530
	Low voltage	*	1.2617	0.5047
12.2024	High voltage	19.2308	0.0398	0.0159
	Medium voltage	89.1456	0.1486	0.0594
	Low voltage	*	1.4436	0.5775

ANNEX 12.6 Amount of tariffs for calculation elements for electricity transmission

Tariffs for calculation elements	2018	2019	2020	6.2021	12.2021	6.2022	12.2022	6.2023	12.2023	12.2024
Peak active capacity (mkd/kW)	3.1964	2.794	9.5589	14.7051	19.8515	17.3319	15.1430	12.4553	13.6690	14.6198
Activated EE (mkd/kWh)	0.1994	0.1704	0.1757	0.2458	0.3015	0.3067	0.2801	0.2324	0.2656	0.2807
Reactivated EE (mkd/kvarh)	0.0798	0.0682	0.0703	0.0983	0.1206	0.1227	0.1121	0.0930	0.1063	0.1123

ANNEX 12.7 BALANCE OF ERC'S INCOMES AND EXPENDITURES IN 2024

Ознака за АОП	Опис	Претходна година	Бруто за тековна година	Исправка на вредноста за тековна година	Нето за тековна година
201	- - Расходи I. МАТЕРИЈАЛНИ РАСХОДИ, УСЛУГИ И АМОРТИЗАЦИЈА (202 до 210)	16.261.145,00			19.454.626,00
202	- - Потрошени материјали	628.677,00			404.309,00
203	- - Потрошена енергија	1.667.202,00			1.764.972,00
204	- - Други услуги	5.847.998,00			4.808.088,00
205	- - Превозни и транспортни услуги	4.820.481,00			6.013.380,00
206	- - Издатоци за реклама, пропаганда и репрезентација	2.259.801,00			2.000.658,00
209	- - Наемнини	408.865,00			2.734.865,00
210	- - Други материјални расходи	628.121,00			1.728.354,00
211	- - ДРУГИ РАСХОДИ (212 до 221)	10.761.620,00			15.113.269,00
212	- - Провизија за платен промет	127.959,00			141.472,00
214	- - Премии за осигурување	262.484,00			456.805,00
215	- - Дневници за службено патување	4.503.789,00			5.530.310,00
216	- - Надоместоци на трошоците на работниците и граѓаните	2.362.272,00			2.554.393,00
217	- - Негативни курсни разлики	22.211,00			37.100,00
218	- - Членарини	732.501,00			1.043.325,00
219	- - Други расходи	2.750.404,00			5.349.864,00
222	- - КАПИТАЛНИ И ДРУГИ СРЕДСТВА (223+224+225)	2.178.435,00			4.788.968,00
224	- - Средства за опрема	930.300,00			3.470.636,00
225	- - Други капитални средства	1.248.135,00			1.318.332,00
230	- - ПЛАТИ И НАДОМЕСТИ НА ПЛАТИ(231+232)	59.128.951,00			68.886.002,00
231	- - а) Вкалкулирани плати	38.740.464,00			45.090.250,00
232	- - б) Вкалкулирани надомести	20.388.487,00			23.795.752,00
235	- - ВКУПНО РАСХОДИ (201+211+222+228+230+233+234)	88.330.151,00			108.242.865,00
236	- - Остварен вишок на приходи-добивка пред оданочување(250 минус 235) ако 250>235	246.090.327,00			261.597.212,00
238	- - Остварен нето вишок-добивка (236-237)	246.090.327,00			261.597.212,00
239	- - Вкупно (235+236) или (235+237) ако 237 е поголемо од 236=252	334.420.478,00			369.840.077,00
243	- - Приходи од камати и позитивни курсни разлики	111.221,00			238.053,00
246	- - Сопствени приходи	197.940.581,00			121.202.739,00
247	- - Други приходи				2.308.958,00
248	- - Пренесен дел од вишокот на приходите од претходната година	136.368.676,00			246.090.327,00
250	- - ВКУПНО ПРИХОДИ 240+243+244+245+246+247+ 248+249	334.420.478,00			369.840.077,00
252	- - ВКУПНО (250+251)=239	334.420.478,00			369.840.077,00
438	- - Број на работници	40,00			43,00

12.8 BALANCE SHEET OF THE ERC FOR 2024

Ознака за АОП	Опис	Претходна година	Бруто за тековна година	Исправка на вредноста за тековна година	Нето за тековна година
1	- - АКТИВА ПОСТОЈАНИ СРЕДСТВА (002+003+008+009)	170.354.865,00	228.178.802,00	47.181.735,00	180.997.067,00
2	- - НЕМАТЕРИЈАЛНИ СРЕДСТВА	1.271.620,00	18.722.436,00	17.634.124,00	1.088.312,00
3	- - МАТЕРИЈАЛНИ СРЕДСТВА (004 до 007)	169.083.245,00	209.456.366,00	29.547.611,00	179.908.755,00
4	- - Земјишта и шуми		2.035.833,00		2.035.833,00
5	- - Градежни објекти	163.753.956,00	172.720.784,00	2.015.076,00	170.705.708,00
6	- - Опрема	3.020.728,00	19.539.177,00	13.999.774,00	5.539.403,00
7	- - Други материјални средства	2.308.561,00	15.160.572,00	13.532.761,00	1.627.811,00
10	- - ПАРИЧНИ СРЕДСТВА,КРАТКОРОЧНИ ПОБАРУВАЊАИ АКТИВНИ ПРЕСМЕТКОВНИ СМЕТКИ (011+018+019+020+021+022+023+024)	265.228.070,00	281.422.573,00		281.422.573,00
11	- - ПАРИЧНИ СРЕДСТВА (012 до 017)	246.995.478,00	260.385.672,00		260.385.672,00
12	- - Жиро сметка	245.625.451,00	259.145.839,00		259.145.839,00
13	- - Благајна	88.591,00	140.247,00		140.247,00
14	- - Девизна сметка	1.281.436,00	1.099.586,00		1.099.586,00
19	- - КУПУВАЧИ	17.988.129,00	17.034.802,00		17.034.802,00
22	- - ДРУГИ КРАТКОРОЧНИ ПОБАРУВАЊА	244.463,00	4.002.099,00		4.002.099,00
28	- - МАТЕРИЈАЛИ, РЕЗЕРВНИ ДЕЛОВИ, СИТЕН ИНВЕНТАР, ПРОИЗВОДСТВО, ПРОИЗВОДИ И СТОКИ (029 до 034)		1.327.939,00	1.327.939,00	
31	- - Ситен инвентар		1.327.939,00	1.327.939,00	
42	- - ВКУПНА АКТИВА (001+010+028+035+038+041)	435.582.935,00	510.929.314,00	48.509.674,00	462.419.640,00

44	- - ПАСИВА - ИЗВОРИ НА ДЕЛОВНИ СРЕДСТВА	167.460.401,00			169.269.735,00
45	- - Деловен фонд	167.460.401,00			169.269.735,00
46	- - РЕВАЛОРИЗАЦИОНА РЕЗЕРВА	2.894.464,00			11.727.332,00
51	- - IV. КРАТКОРОЧНИ ОБВРСКИ И ПАСИВНИ ПРЕСМЕТКОВНИ СМЕТКI (052 ДО 061)	1.132.385,00			1.127.948,00
53	- - б) Добавувачи	1.123.975,00			1.121.115,00
56	- - Други краткорочни обврски	8.410,00			6.833,00
62	- - V. ПАСИВНИ ВРЕМЕНСКИ РАЗГРАНИЧУВАЊА (063 до 065)	264.095.685,00			280.294.625,00
64	- - Дел од вишокот на приходите пренесен во наредната година	246.090.327,00			261.597.212,00
65	- - Други пасивни временски разграничувања	18.005.358,00			18.697.413,00
69	- - ВКУПНА ПАСИВА (044+046+047+051+062+066+067+068)	435.582.935,00			462.419.640,00

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