



2024

2024 ENERGY AGENCY
ANNUAL REPORT

2024 ENERGY AGENCY ANNUAL REPORT

Serbian Energy Sector Report

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Annual and Financial Report

Belgrade, May 2025

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INTRODUCTORY REMARKS

In line with the provisions of the Energy Law of the Republic of Serbia ("Official Gazette of RS", No. 145/14, 95/18 other laws, 40/21, 35/23 – other laws, 62/23 and 94/24– hereafter: Law), the Council president and members of the Energy Agency of the Republic of Serbia are accountable for their work and the work of the Agency to the National Assembly of the Republic of Serbia. They submit the report to the National Assembly once a year. Apart from the annual report and financial report, this document also includes the report on the situation in the energy sector of the Republic of Serbia in areas under the Agency's jurisdiction.

The report on the Serbian energy sector includes the review on the situation and activities in electricity and natural gas markets and partly in oil and oil derivatives market, security of electricity and natural gas supply, activities of general interest and electricity and natural gas customer protection. In terms of its structure and its content, the Report is also in line with the recommendations of the Council of European Energy Regulators – CEER.

The selection process for the President and members of the Council of the Agency began in 2017 and was completed in March 2018, when the new members of the Council of the Agency commenced their terms of office. Following the expiration of the terms of two members of the Council, in accordance with the prescribed legal procedure, two new members of the Council of the Agency were elected and began their terms at the end of 2024. During 2024, 49 sessions of the Council of the Energy Agency of the Republic of Serbia were held in total (47 ordinary ones and 2 extraordinary ones). In line with the Law, all decisions within the scope of the Agency's work are adopted by the Council of the Agency. During the sessions of the Council of the Energy Agency of the Republic of Serbia, decisions, approvals, certificates, conclusions and other acts in the field of price regulation, energy market establishment and monitoring, license issuance and withdrawal and methods of organisation of the Agency and other issues within the jurisdiction of the Council were adopted. In 2024, the Energy Agency of the Republic of Serbia was fulfilling its obligations arising from the Law which are relevant for the enforcement of the law, and Serbian energy market functioning. By expressing its views, the Agency also played an important role in the work of Energy Community (EnC) institutions and also offered expert support to other national institutions in their activities.

Security of supply of electricity, natural gas, and oil derivatives in 2024 was satisfactory. Electricity consumption by final customers in 2024 was 2.7% higher compared to 2023. In the household category, consumption increased by 1.7%, while consumption of other low-voltage categories increased by 2.4%. Medium-voltage customers increased consumption by 5%, and high-voltage customers by 1.6%. Consumption for the needs of production in thermal power plants and hydropower plants decreased by 5.4%. Total electricity generation in 2024 was 6.7% lower than in 2023 (with generation in coal-fired thermal power plants lower by 1.2%, generation in combined heat and power plants lower by 7.6%, and generation in hydropower plants connected to the transmission system lower by 16.8% due to very favorable hydrological conditions in 2023). In wind power plants connected to the transmission system, 26.3% more electricity was generated, while electricity generation in plants connected to the distribution system was 4.5% lower. In 2024, electricity imports exceeded exports by 563 GWh, or 8.5%. Natural gas consumption in 2024 decreased by 0.8% compared to 2023. Natural gas consumption increased by 11.1% in households and by 2.3% in district heating plants, while it decreased by 4.2% in industry and other customer categories.

From the total sales volume on the free market, in 2024, 53.6% of electricity (compared to 53% in 2023) and 80.9% of natural gas (compared to 81.5% in 2023) were sold. Household consumers, at approximately 2,000 metering points mainly for apartments owned by companies that procure electricity on the free market, exercised the right to choose their supplier and mostly purchased electricity at regulated prices.

Electricity guaranteed supply prices and electricity transmission and distribution use-of-system charges were not modified in 2024.

The Energy Development Strategy of the Republic of Serbia until 2040, with projections until 2050, as well as the Integrated National Energy and Climate Plan of the Republic of Serbia for the period up to 2030 with a vision to 2050, envisage a significant increase in electricity generation from renewable energy sources. A gradual phase-out of electricity generation using fossil fuels is foreseen, which is necessary due to the decarbonization process. However, the security of electricity supply to customers and the stability of operation of Serbia's power system are imperative; therefore, the operating dynamics of thermal power plants will primarily depend on energy security, i.e. the national adequacy assessment, which includes reference scenarios and results from the European adequacy assessment, as well as the application of capacity adequacy mechanisms, so that security of supply is not jeopardized at any time.

In 2024, installed capacity of wind power plants connected to the transmission network increased by 97 MW, so that by the end of the year the total installed capacity of power plants connected to the transmission network amounted to 8,086 MW. A total of 60 MW of new capacity (both renewable and conventional sources) was connected to the distribution system, so that by the end of 2024 a total of 413 small power plants with an aggregate installed capacity of 354 MW were connected to the distribution system. In 2024, electricity generation from renewable energy sources connected to both the transmission and distribution systems amounted to 12,218 GWh, representing 34.7% of gross electricity consumption.

The plans of the Republic of Serbia for Emission Reduction envisaged the operation of some of the oldest thermal units by 2026 where, due to old-fashioned technology, the implementation of measures for the reduction of emission of sulphur and nitrogen oxides was not planned. These units will gradually stop operating and their production will be replaced by the above-mentioned new capacities. Measures to reduce nitrogen oxide emissions have been implemented on the remaining units, significantly reducing sulphur gas emissions as well. These environmental measures also have economic implications, affecting the costs of electricity production in thermal power plants.

During 2024, the Energy Agency of the Republic of Serbia, in accordance with the approved Exemption Act for the new natural gas interconnector Gastrans d.o.o. Novi Sad, continuously monitored the operations of this company. The Agency monitored the implementation of the Natural Gas Transmission System Operation Rules and the implementation of the Non-Discriminatory Conduct Program adopted by Gastrans d.o.o. Novi Sad, based on the information obtained and on the review of the content of the Annual Report regularly submitted to the Agency by the Compliance Officer responsible for monitoring the Non-Discriminatory Conduct Program at Gastrans d.o.o.

The Niš–Sofia gas pipeline is a project supported by EU institutions. In 2019, an energy permit was obtained, the feasibility study and the preliminary design were prepared and subjected to professional review, a construction permit was obtained, and the detailed design for construction was completed. Construction of this gas pipeline began in 2022 and was completed in 2023, after which the pipeline was put into trial operation in December 2023, which continued throughout 2024.

Natural gas is the most common energy source in district heating systems, which are the dominant form of household heating in urban areas. The relatively low level of household gasification (13.4% of the total number of households) indicates that there is potential for further growth in this sector, which implies the development of gas infrastructure.

While approving regulated prices, the Council of the Energy Agency of the Republic of Serbia insists on rationalisation in the operations of energy companies and on the acknowledgement of justified costs only. High electricity losses in the distribution network represent one of the highest costs and these are regularly acknowledged by the Agency on the level lower than the actual one, in line with the plan for loss reduction. In 2024, distribution network losses decreased by 0.48% in comparison to 2023 and they amounted to 10.37% of electricity withdrawn into the distribution system which is high in comparison to the losses justified on the technical ground. It is also necessary to intensify investments in the electricity distribution network, transfer of metering devices and of connection lines and to have more efficient replacement of metering devices.

In 2024, EMS JSC continued their activities aiming at system development and strengthening cross-border capacities and participation in coordinated cross-border capacity auctions. In 2024, the scale of trade in the organised market SEEPEX – electricity exchange was increased by 9.5% on the day-ahead market. Activities continued to be taken so as to develop regional electricity market. The integration into the EU market also requires adequate participation of the institutions of the Republic of Serbia (regulatory ones as well) in the relevant EU institutions so as the interests of the country would be protected adequately.

In 2024, indicators for unplanned electricity supply interruptions in the transmission and distribution systems were better compared to 2023 and below the European average.

Data collection on natural gas delivery quality was also conducted in 2024, with all energy entities providing the requested data to the Agency. One unplanned interruption occurred on transport systems in 2024, while the highest number of unplanned interruptions in distribution systems was due to the actions of third parties.

In 2024, a total of 341 submissions were received by the Energy Agency of the Republic of Serbia, mostly concerning the operations and conduct of energy entities in various domains of their business. The Agency processed all complaints and provided responses to the submitters, forwarding cases to competent state authorities for further action. The Agency increased its activities in market monitoring regarding the conduct of energy entities towards customers and system users and in protecting the rights and interests of energy consumers.

Council of the Energy Agency of the Republic of Serbia

May 2025

SERBIAN ENERGY SECTOR REPORT

1. ENERGY DEMAND IN SERBIA

In this chapter, the latest available data on total primary and final energy consumption, along with other energy-related data (mostly from 2023), for Serbia are presented, compared with the European Union.

The primary energy consumption in Serbia, excluding the Autonomous Province of Kosovo and Metohija (APKM¹), was 15.96 million tonnes of oil equivalent (Mtoe) in 2023. Serbia is characterized by a high share of coal, predominantly low-calorific lignite, in total primary energy (about 43% in 2023, significantly higher compared to the EU's 10% share), which is predominantly used for electricity generation. The substantial use of domestic lignite enables Serbia to maintain relatively high energy independence in electricity production compared to other European countries, with relatively lower and stable costs. However, lignite use in electricity production increases negative environmental impact. Long-term, this fact increases the risk of cost increases due to carbon dioxide emissions and greenhouse gases globally.

In 2023, Serbia's net energy import dependency was 42%, lower than that of most European countries (which was 58.3% in the EU). Serbia's import dependency decreased slightly compared to the previous year (when it was 45%).

Table 1-1: Energy sector of Serbia (without APKM) – some indicators for 2019 - 2023

	Measurement unit	Year				
		2019	2020	2021	2022	2023
Population number, in the beginning of the year	thousands	6,964	6,927	6,871	6,797	6,641
GDP per capita, per spending power parity	Fixed \$ from 2017	13,388	13,422	14,930	16,450	18,652
Primary energy consumption	Mtoe	15.42	15,76	16,23	16,42	15,96
Final energy consumption	Mtoe	8.36	8,68	9,26	9,48	9,27
Import dependence	%	35.6	30,2	34,8	45,0	42,0

Data: RZS, EUROSTAT, Ministry of Mining and Energy

Compared to the European Union (Figure 1-1), gross domestic product of Serbia per citizen was calculated in line with the purchasing power parity (which reflects the level of development and standard in a more realistic manner) in 2023 was on the level of 49%, consumption of total primary energy per capita – 80% and final electricity consumption – 83%.

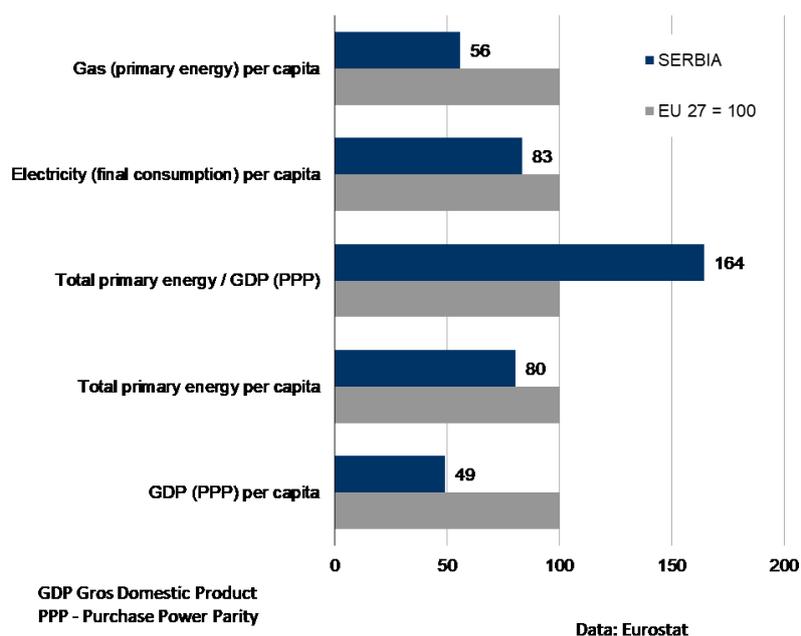


Figure 1-1: Comparative indicators of Serbia and the European Union in 2023

Energy intensity, i.e. total primary energy consumption per domestic product unit (per purchase power parity) was by 64% higher than the European average (it is considerably lower in comparison to 2022 when it was higher by 81%). Greater energy intensity is partly a consequence of inevitable technical losses in the process of transformation of lignite into electricity (two thirds of electricity is produced from lignite). However, it is primarily due to irrationality, i.e. low efficiency in consumption

¹ The treatment of energy data for the territory of the Autonomous Province of Kosovo and Metohija (APKM) in this report depends on their availability, reliability, and the need to present them if it concerns a unified function across the entire territory (a single regulatory area), taking into account United Nations Security Council Resolution 1244 of June 10, 1999.

in households, industry, due to low rate of capacity use and old technology. Primary gas consumption per capita amounts to around 56% of the European Union.

An important difference in the final energy consumption structure in Serbia in comparison to the European Union lies in the high consumption share in households (36% in Serbia in comparison to 26% in the European Union) and twice as high energy consumption share in agriculture in the European Union. Figure 1-2 indicates the structure of final energy consumption in 2023 in Serbia and in the European Union according to EUROSTAT data.

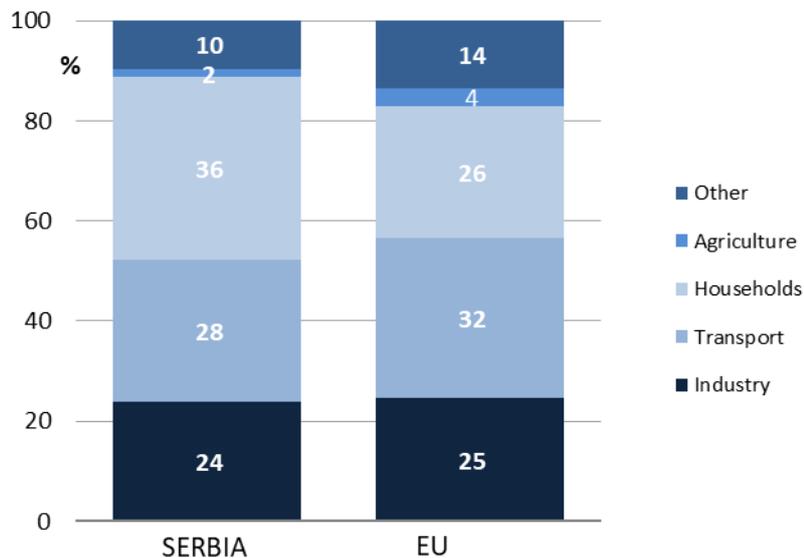


Figure 1-2: Final consumption structure (without non-energy consumption) in 2023

2. ELECTRICITY AND NATURAL GAS MARKET IN 2024

2.1 Legal and regulatory framework

The legal and regulatory framework for the development of electricity and natural gas market in the Republic of Serbia was established by the Energy Law ("Official Gazette of RS", No. 145/14, 95/18 other laws, 40/21, 35/23 – other laws, 62/23 and 94/24– hereafter: Law), The Law on Renewable Energy Source Use ("Official Gazette of RS", No. 40/21, 35/23 and 94/24 - other law) and Law on Energy Efficiency and Rational Use of Energy ("Official Gazette of RS" No. 40/21) and by-laws which are harmonised with the Third EU Energy Regulations Package.

Electricity and natural gas markets are largely regulated by separate by-laws which acknowledge the specificity of each market, such as general conditions of delivery, electricity market codes, transmission and distribution network codes, methodologies for setting use-of-system charges, price of regulated supply of households and small-scale customers and connection costs. Some regulations which relate to the protection of final customers and their rights are common for electricity and natural gas, as well as the legal acts regulating: switch of suppliers of final customers who have signed a contract on full supply; monitoring technical and commercial indicators and regulating quality of delivery and supply; exercising the right of a final customer to access the data on his/her consumption; proceedings and imposing measures and keeping records of imposed measures; prohibition of market abuse and registration of wholesale players. The regulation on the method, procedure and deadlines for keeping accounting records, implementing unbundling of accounts for each activity and submission of data and documentation for regulation purposes. Additionally, the regulatory framework regarding renewable energy sources and energy efficiency, defined in 2021, also included subordinate regulations enacted by the Agency for Determining Maximum Market Premiums or Maximum Feed-in Tariffs for electricity, as well as the method for determining feed-in tariffs for electricity. However, with amendments to the Renewable Energy Sources Act in 2023, this responsibility was transferred to the ministry responsible for energy.

In 2024, in line with the given regulations and indicated demand, the Agency adopted and amended regulations from its jurisdiction in order to have more efficient market functioning, better protection of final customers and other market participants.

In November 2024, the Law on Amendments and Supplements to the Energy Law ("Official Gazette of the Republic of Serbia", No. 94/24) was adopted, transposing into domestic legislation the adapted regulations of the Third Energy Package as well as part of the Fourth Energy Package of the European Union in the field of electricity. By this Law, which entered into force in December 2024, the competences and scope of activities of the Agency were significantly expanded, particularly in the field of electricity.

2.2 Electricity market development

Unbundling of the operator

The unbundling of the electricity transmission and distribution system operator, as natural monopolies, from energy entities performing production and supply as market activities is one of the most important tasks in the market reform of the sector. Equal right of access to network systems is thereby provided for all market participants.

The following entities are appointed to perform electricity transmission and distribution on the territory of the Republic of Serbia:

- *Elektromreža Srbije* JSC, Belgrade (*EMS JSC*), for electricity transmission and transmission system operation, 100% state-owned, corporatized since 2016 and operates as closed joint stock company and
- *Elektro distribucija Srbije* LLC Belgrade (*Elektro distribucija Srbije*), for electricity distribution and distribution system operation is 100% state-owned. Until March 31, 2021, this activity was performed by PE *EPS Distribucija* LLC, Belgrade.

EMS JSC is the Transmission System Operator (TSO) since it is licenced for transmission and transmission system operation, while *Elektro distribucija Srbije* is the Distribution System Operator (DSO) since it holds a licence for distribution and distribution system operation.

The compliance with the conditions regarding the transmission system ownership unbundling model which is prescribed by the Law is established within the certification procedure executed by the Agency. The ruling legal solution implies that only after a legal person is certified as a transmission system operator, the person may submit an application for the issuance of an energy licence for transmission and transmission system operation. In line with the Law, this legal person is appointed as the electricity transmission system operator by the issuance of the licence.

In line with the certification procedure prescribed by the Law, *EMS JSC* was awarded with the final certificate as the electricity transmission system operator issued by the adoption of a Decision of the Agency Council following the preliminary certification and the Opinion of the Energy Community Secretariat.

Elektro distribucija Srbije was awarded with the licence for distribution and distribution system operation and they perform this activity since April 1, 2021.

EMS JSC and Elektro distribucija Srbije became the owners of the system within which they perform their activities. *EMS JSC and Elektro distribucija Srbije* proved within the certification procedure and licence issuance procedure, i.e. licence issuance that there is a legal ground for them to use power facilities which serve for this energy activity.

In July 2023, the Law on Amendments and Supplements to the Energy Act ("Official Gazette of RS", No. 62/23) was adopted, which began to be applied on November 1, 2023. This law established the Republic Commission for Energy Networks as an independent body of the Republic of Serbia for the control of the electricity transmission system operator, whose founder is the Republic of Serbia. The Commission conducts activities related to the transmission and management of the electricity transmission system as activities of general interest.

The same law repealed provisions of the Law on Ministries ("Official Gazette of RS" No. 128/20 and 116/22), under which the Ministry responsible for economy affairs previously performed state administration tasks related to oversight and preparation of proposals for acts concerning the appointment and dismissal of management bodies and representatives of capital in EMS a.d.

Electricity consumption

In 2024, 35.17 TWh of electricity were produced in Serbia, while gross electricity consumption amounted to 35.19 TWh. Final customers consumption amounted to 30.83 TWh, while the remaining quantities were used for the power plants operations, pumping within the pumped-storage hydro power plant and pumping facility and for recovery of electricity losses in electricity transmission and distribution networks.

According to data from electricity suppliers, in 2024 a total of 7.2 TWh of electricity was imported, which is 1.1 TWh more than in the previous year, while exports amounted to 6.6 TWh, which is 1.4 TWh less than in 2023. Both exports and imports were recorded throughout the year. Favorable hydrological conditions and a relatively mild winter enabled electricity exports to exceed imports in the first quarter of the year. An exceptionally hot summer led to significant imports, which in July and August exceeded 0.8 TWh per month. The highest monthly electricity import, exceeding 0.9 TWh, was recorded in December 2024.

The highest daily gross electricity consumption in Serbia, excluding AP Kosovo and Metohija, amounting to 126,922 MWh, was recorded on 12 January 2024, and on the same day at 18:00 the maximum hourly load of 5,706 MW was achieved.

Wholesale

In 2024, suppliers mainly traded between themselves in the wholesale electricity market because there are no big independent producers who would offer electricity since big wind parks as privileged producers sell electricity to *EPS JSC* which is obliged to purchase this energy at feed-in tariffs as the guaranteed supplier. The suppliers' activity in the open market is the most intensive in the field of cross-border exchange, mostly with the purpose of transit via Serbia which is dominant due to central geographic position of the power system of Serbia in the region. In 2024, it amounted to around 8.9 TWh. The right to nominate working schedules based on a relevant contract signed with *EMS JSC* in 2023 was awarded to 58 electricity market players. There were 11 suppliers dealing with final customers supply in the open market.

The Republic of Serbia borders eight countries and considerable electricity quantities are transferred from north-east to south-west which is why there are combustions on cross-border overhead lines and why new overhead lines are planned to be constructed with the most important project which involves the plan to connect eastern and western Europe over the territory of Serbia by the construction of 400 kV line (TransBalkans Corridor project which was initiated by the construction of a section Pančevo 2 – Rešica which was completed up to the border with Romania).

Organised day-ahead market

Organised day-ahead market/power exchange in Serbia – *SEEPEX a.d.* (JSC) Beograd (South-eastern European power exchange) was established on the basis of partnership between *EMS JSC* and *EPEX SPOT* – France as a joint stock company with the majority ownership of the Serbian side. It is licenced for organized electricity market operation. On the organized day-ahead electricity market/exchange, 45 participants were registered in 2024, which is the same level as in 2023. Trading activity was carried out by 40 participants, which is seven more than in the previous year.

The total volume of electricity traded on the organized day-ahead *SEEPEX* market in 2024 amounted to 5,548 GWh, representing an increase of 18.5% compared to 2023, when 4,682 GWh were traded. The share of exchange-based trading relative to the total electricity delivered to final customers amounted to 15.6% in 2023 and increased to 18% in 2024. In addition, the share relative to electricity delivered to customers on the free market increased from 29.4% in 2023 to 33.5% in 2024. The highest hourly price was €280.1/MWh, while the lowest was €22.68/MWh. The average annual base price amounted to €96.35/MWh, which is 7% lower than in the previous year.

During 2024, trading in *SEEPEX* futures continued. These futures represent standardized instruments for hedging against price risks. The total volume of futures traded in 2024 amounted to 624 GWh, indicating stable interest in long-term hedging instruments on the Serbian electricity market. The trading volume and the growth in the number of registered and active *SEEPEX* members increase exchange liquidity and thereby contribute to the formation of a reference wholesale electricity price in Serbia as well as in the region.

Retail

The Law enabled all final customers in Serbia to purchase electricity in the open market. Only households and small customers are entitled to guaranteed supply, i.e. supply at regulated prices. 46.4% of final customers' consumption is supplied at regulated prices to which households and small customers' are entitled.

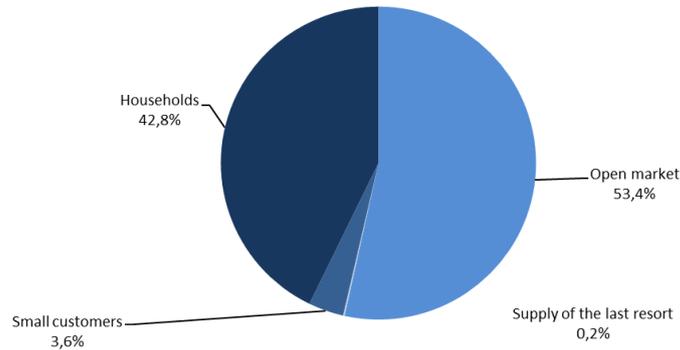


Figure 2-1: Electricity sales in the open and regulated markets in 2024

Only those customers who are not entitled to guaranteed supply purchase electricity in the open market and 53.6% of electricity consumed by final customers in total was sold during 2024. Out of the amount, 0.2% of electricity was consumed within the supply of the last resort regime by customers who failed to select a supplier and who used their legal right to the supply of the last resort.

At the end of 2024, there were 79 energy entities licenced for electricity supply in the open market. Out of the number, only 11 were active. EPS JSC is still the dominant supplier in the open market with the share of 98.2% of electricity sold to final customers in the open market and 99.06% of the total final customers' consumption (both in the open and regulated markets).

In 2024, a supplier was switched on 15,907 metering points (0.42% of the total number of metering points) with consumption of 286.6 GWh which amounts to 0.94% of the total final customers' consumption.

Security of supply

In 2024, the security of supply was on the satisfactory level. Investments within several years into revitalization and modernisation of production, transmission and partly distribution capacities increase the reliability and efficiency of the power system operations.

In 2024, indicators of the continuity of electricity supply quality in both the transmission system and the distribution system were better than in the previous year. However, despite the improvement—primarily in the distribution system—the achieved indicator values remain significantly higher than those in European Union countries. This points to the need for a more in-depth analysis of the condition of the distribution system in order to define and implement measures that will further improve supply reliability and reduce the number and duration of power outages.

The Energy Development Strategy of the Republic of Serbia until 2040, with projections until 2050, as well as the Integrated National Energy and Climate Plan of the Republic of Serbia for the period until 2030, with a vision until 2050, envisage a significant increase in electricity generation from renewable energy sources. A gradual phase-out of electricity generation using fossil fuels is planned, which is necessary due to the decarbonization process. However, security of supply is imperative, and therefore the operating dynamics of thermal power plants will primarily depend on energy security, so that it is not jeopardized at any point.

2.3 Natural gas market development

Unbundling of the operator

In 2024, natural gas transmission was performed by three energy entities on the territory of Serbia: *Transportgas d.o.o.*, Novi Sad, *Yugorosgaz-Transport*, LLC Niš and *Gastrans*, LLC, Novi Sad. *Gastrans*, LLC started operating as a new transmission system operator in Serbia on January 1, 2021.

With the consent of the Government of the Republic of Serbia, PE *Srbijagas* established companies *Transportgas Srbija* LLC and *Distribucijagas* Srbija LLC which are registered in the company register as active companies. By the Conclusion of December 23, 2016, the Government of the Republic of Serbia enabled PE *Srbijagas* to continue performing the activity of general interest – transmission and transmission system operation, either independently or through the company *Transportgas Srbija* LLC until the licence is obtained. The Government also recommended to *Transportgas Srbija* LLC to take all necessary activities meant to provide the licence as soon as possible. At the end of 2019, *Transportgas Srbija* LLC

started performing some of its activities as well as during most of 2020 which is why natural gas transmission was still performed by its founder PE *Srbijagas* in that period. Since October 2020, transmission system operator *Transportgas Srbija* LLC started fully performing natural gas transmission and transmission system operation but they did not obtain the licence for the performance of this activity in 2023 either. *Distribucijagas* Srbija LLC has not started operating in 2023.

In November 2018, *Transportgas Srbija* LLC submitted a certification application in line with an independent transmission operator model. In February 2019, the Agency denied this application since this company did not submit the prescribed documentation and did not prove the compliance with the prescribed certification conditions within the legal deadline. In May 2019, *Transportgas Srbija* LLC refiled the certification application in line with ITO model, but this application was denied by the Agency in September 2019 for the same reasons. In 2021, upon the request of *Transportgas Srbija* LLC for certification in line with independent system operator model, the Council of the Agency adopted a decision No. 311.01-1/2021-C-I of March 3, 2022, on the suspension of the procedure due to the withdrawal of the file applicant. *Transportgas Serbia* d.o.o. did not submit an application for certification in 2023, as the conditions regarding the control of the natural gas transmission system operator founded by the Republic of Serbia were changed only at the end of 2023, upon the entry into force of the Law on Amendments and Supplements to the Energy Law ("Official Gazette of the Republic of Serbia", No. 62/23), which began to apply on 1 November 2023. By this Law, the Republican Commission for Energy Networks was established as an autonomous and independent body of the Republic of Serbia, responsible for the control of the natural gas transmission system operator founded by the Republic of Serbia, which performs natural gas transmission and manages the transmission system as an activity of general interest.

After this Commission commenced its work and gave its consent to the amendments to the founding act of *Transportgas Serbia* d.o.o. Novi Sad at the beginning of 2024, the conditions for submitting an application for certification were created. Accordingly, within the statutory deadline, on 25 July 2024, the Agency adopted a preliminary Decision on the issuance of a certificate to *Transportgas Serbia* d.o.o. under the independent system operator model and forwarded it to the Energy Community Secretariat for an opinion, in accordance with the obligations of the Republic of Serbia arising from ratified international agreements. As the Secretariat delivered its opinion on 21 November 2024, the Agency is obliged to adopt a final certification decision within four months of receipt of this opinion, taking the Secretariat's opinion into account to the greatest extent possible.

Yugorosgaz-Transport, LLC Niš was certified as an independent system operator by the decision of the Agency Council from June 2017 with an obligation to harmonise its organization and operation in a manner providing for the compliance with the conditions related to the independence and an obligation to submit the compliance programme to the Agency as well as an evidence on the procurement of natural gas for loss recovery purposes. The deadline for the compliance with the obligation was one year long and, in case of failure, the certificate would have been revoked. From all the above given conditions, the first condition is beyond the jurisdiction of the Agency and the compliance with it depends exclusively from competent state bodies. By the Decision of the Energy Agency Council, in July 2018, *Yugorosgaz-Transport*, LLC Niš obtained a one-year extension of the deadline in order to comply with the certification conditions in line with independent system operator model with an obligation to inform the Agency twice a month on the activities taken to that end. Since *Yugorosgaz-Transport*, LLC Niš did not submit all the evidence on the compliance with the conditions prescribed by the Final Certification Decision until the end of the given deadline, in July 2019, the Agency Council adopted a decision on the revocation of the certificate from *Yugorosgaz-Transport*, LLC Niš. In 2024, *Yugorosgaz-Transport*, LLC did not file an application for certification either.

Acting in line with the Energy Law and with the Decision of the Energy Agency of the Republic of Serbia on the Exemption of New Natural Gas Interconnector, in June 2019, *Gastrans d.o.o.* (LLC) *Novi Sad* filed a certification application. In August 2019, by the Preliminary Decision, the Agency Council certified *Gastrans d.o.o.* (ad hoc ITO model) with conditions prescribed, with an obligation to submit all occupancy permits or to register ownership rights over transmission system facilities as well as to submit evidence proving its independent operation and independent operation over the constructed transmission system. The deadline for the compliance with the prescribed conditions was six months. Otherwise, the certificate would be revoked. On December 22, 2019, the competent body in line with obligations arising from ratified international treaties (Energy Community Secretariat) submitted its Opinion on the Preliminary Decision on Certification of *Gastrans d.o.o.* Following this, the Council of the Agency adopted the final decision thereby issuing a certificate to *Gastrans d.o.o.* as to an independent natural gas transmission operator within legal deadline on February 21, 2020. Basically, Preliminary Decision of August 2019 was confirmed by this final decision and the same obligation prescribed in the Preliminary Decision was established for *Gastrans* d.o.o in the final decision. In March 2022, *Gastrans* LLC submitted evidence to the Agency based on which the Agency adopted a decision confirming that *Gastrans* LLC complies with the certification requirements set in the act of the Agency of February 21, 2020.

Wholesale

Wholesale was dealt with only by two companies as natural gas traders which are licenced for natural gas supply - PE *Srbijagas* (which sold natural gas to public suppliers as the supplier of public suppliers) and natural gas producer *Naftna industrija Srbije a.d.* ((Petroleum Industry of Serbia) JSC, hereafter: NIS). The fact that the transmission system operator *Transportgas Srbija* still does not enforce Transmission Network Code, which regulates the access to cross-border capacities based on non-discrimination and transparency principles, represents a significant constraint for wholesale market. Therefore, capacity allocation in line with the Transmission Network Code was not realised even in 2024.

The activation of the new direction of supply from Bulgaria via the gas pipeline which is operated by the transmission system operator *Gastrans* LLC created conditions for the diversification of the source of supply. This gas pipeline became fully operable as of October 1, 2021, which is the moment when natural gas started also being transmitted from Bulgaria for the

purpose of natural gas transit with Bulgaria up to the border with Hungary. In 2024, this gas pipeline was used by system users who concluded long-term contracts as well as the users with short-term capacity allocation.

The Law prescribes that the Government of the Republic of Serbia appoints the supplier of public suppliers until a competitive market is established. The supplier of public suppliers has to offer natural gas to all public suppliers (including the one within the same legal entity as the supplier itself) under the same conditions and at the same price. In 2024, PE *Srbijagas* was the supplier of public suppliers.

Retail

Total final customers' natural gas consumption to 25,470 GWh. In addition, NIS consumed 1,758 GWh from their own production quantities and, therefore, these quantities were not subject to trade in the Serbian natural gas market in 2024. There were 23 suppliers in the open market (out of 58 licensed suppliers) who dealt with retail, i.e. with the supply of final customers in 2021 while there were 31 public suppliers who also acted as natural gas distributors. Trade in the open market was dominant in the retail sphere. The natural gas sale in the open and regulated markets (households and small-scale customers are entitled to regulated prices) is indicated in Figure 2-2 and it does not include natural gas volumes produced by NIS to cover their own demand.

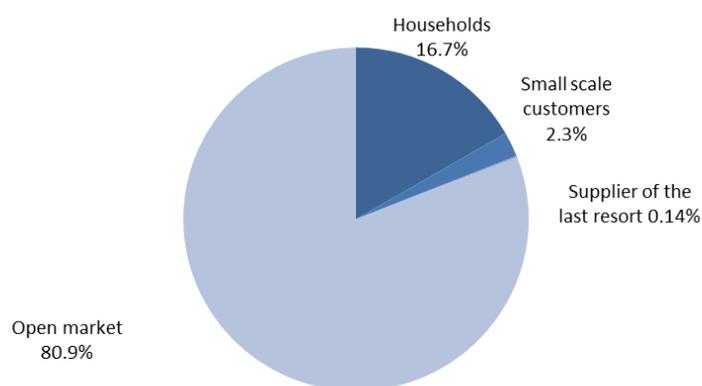


Figure 2-2: Sale of natural gas in the open and regulated markets in 2024

In 2024, around 80.9% of the total natural gas quantities which were sold to final customers were sold in the open market. The Law prescribed that the final customer who is not entitled to regulated supply can be supplied temporarily by the supplier of the last resort, if a customer loses his supplier. The Government appoints the supplier of the last resort, and, in case of 2024, the supplier of the last resort was PE *Srbijagas*. In 2024, the supply of the last resort was exercised by 4 customers with 34.9 GWh delivered to them in total, i.e. 0.14% of the total natural gas consumption in the market (without NIS consumption from its own production).

In 2024, the switching of supplier occurred only with 7 out of 31 distribution systems, on 51 metering points in total, with the consumption of 215 GWh, which amounts to 1.16% of natural gas quantities consumed in total in the market (without NIS consumption from its own production).

In 2024, a total of 27,228 GWh of natural gas was consumed, which is a 0.8% decrease compared to 2023. Consumption in households increased by 11%, in district heating plants it increased by 2% due to milder winter weather, while industrial consumption decreased by 4.2% compared to the previous year. Domestic production of 1,815 GWh in 2024 met only 6.7% of the demand, which reflects the reduction in comparison to 7.4% in the previous year.

Households and small customers (with annual natural gas consumption of up to 100,000 m³ with all their facilities connected to the natural gas distribution system) are entitled to be supplied by the public supplier at regulated prices if they do not select a supplier in the open market. Households and small customers have a small share in the final consumption of only 4,836 GWh i.e. around 19% of the total gas quantities consumed in the market (without NIS consumption from its own production).

Security of supply

In 2024, the security of natural gas supply was on a satisfactory level. There were sufficient quantities of natural gas to cover the whole demand of customers.

Efforts are made in Serbia in order to provide alternative supply directions. Since 2021, via the commissioning of the interconnector from the Bulgarian-Serbian border to the Serbian-Hungarian border (Gastrans gas pipeline), the security of supply was increased and the infrastructure supply standard N-1 in the Republic of Serbia was complied with. In December 2023, the construction of the Niš-Dimitrovgrad gas pipeline was completed, establishing a connection with the Bulgarian transmission system. The trial operation of this interconnector started in December 2023, which will further enhance supply security and the value of the infrastructure standard N-1 in the Republic of Serbia.

In addition, so as to increase the security of supply, it would be useful to connect with gas pipelines in other neighbouring countries; first of all, with Romania and Croatia since these countries have a developed gas infrastructure and additional options for natural gas procurement.

3. ELECTRICITY

3.1 Sector structure and capacities

3.1.1 Organisational and ownership structure of the sector

Since the adoption of the first Energy Law (“Official Gazette of RS”, No. 84/04) which established basic principles for the development of electricity and natural gas markets, the organisational structure of the power sector has been constantly harmonized with the needs of the electricity market development in line with the principles of non-discrimination, efficient competition and transparency. The transformation was initiated in 2005 by unbundling a joint vertically-integrated Public Enterprise *Elektroprivreda Srbije* (PE *EPS*) which included: electricity production, transmission, distribution and trade into a separate company PE *Elektromreža Srbije* (which was corporatized in 2016 and has been functioning as a closed joint stock company – *EMS AD*) which was established for electricity transmission and into a vertically-integrated PE *EPS* which was established for electricity production, wholesale supply and retail supply (since 2023, the Government of the Republic of Serbia changed the legal form of the enterprise and transformed it into joint stock company *Elektroprivreda Srbije – EPS AD* by a decision on amendments and addenda to the founding act). On July 14, 2015, *EMS JSC* established *SEEPEX JSC* Belgrade – power exchange. It was established based on partnership with EPEX SPOT. According to the Energy Law, *SEEPEX* has an obligation to organise and administer organised electricity market and to connect it with organised electricity markets of other countries.

The structure of the power sector at the end of 2024 is indicated in Figure 3-1.

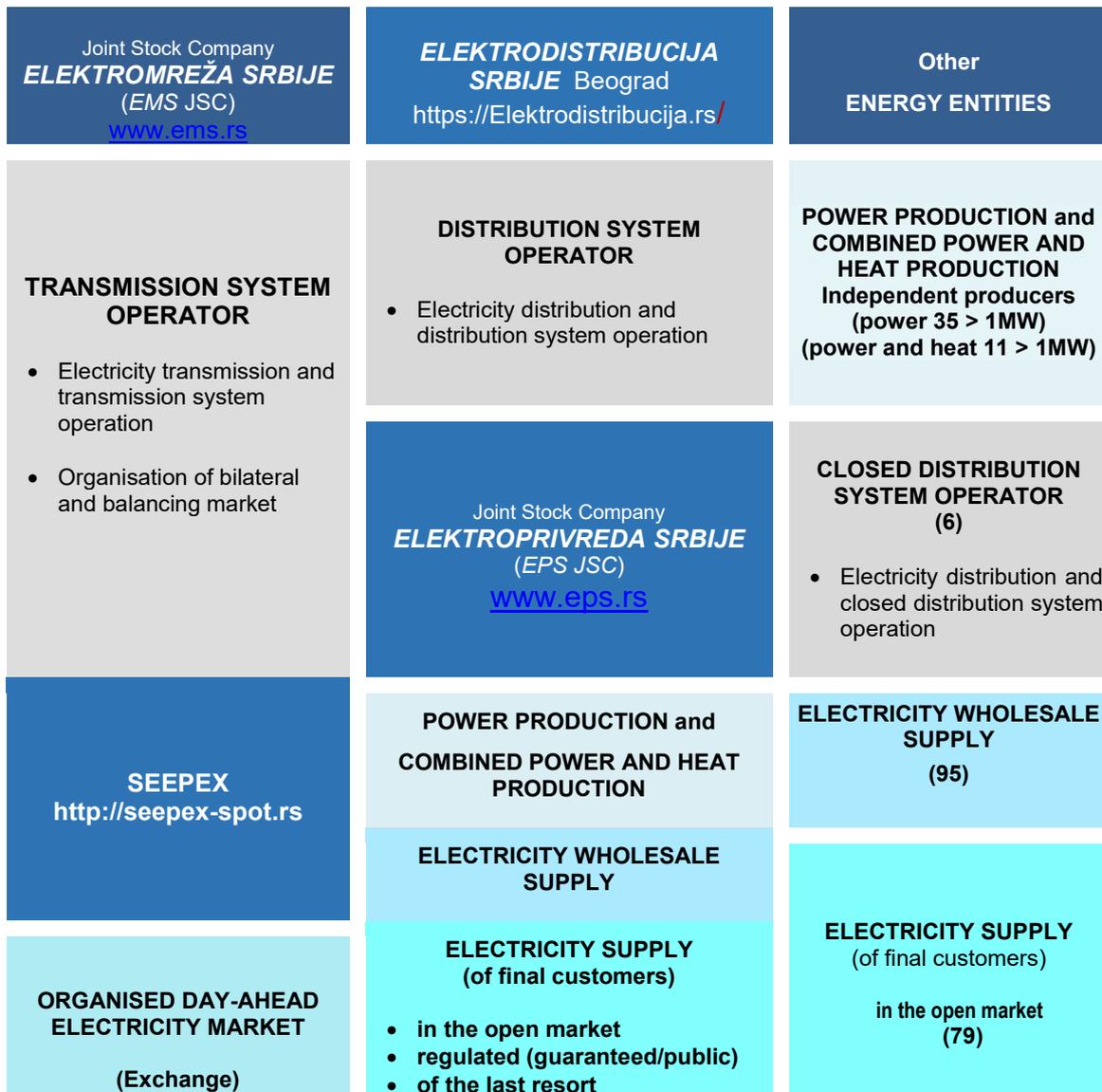


Figure 3-1: Organisational structure of the power sector at the end of 2024

Joint stock companies *EPS JSC* and *EMS JSC* are 100% owned by the Republic of Serbia.

EPS JSC performs the following activities: electricity generation and combined generation of electricity and heat, as well as electricity supply on both the wholesale and retail electricity markets. *EPS JSC* is the largest electricity producer and a dominant participant in the electricity market. In addition to selling and purchasing electricity on the free market, *EPS JSC* has been designated as the supplier of last resort and the guaranteed supplier for households and small customers, which it supplies at regulated prices.

In partnership with EPEX SPOT SE, France, *EMS JSC* established in 2017 an organised day-ahead electricity market (exchange) SEEPEX JSC, Belgrade (*EMS JSC*, Belgrade holds 75% of the shares while EPEX SPOT SE holds 25%).

In December 2022, the Alpine–Adriatic–Danube Electricity Exchange – the ADEX Group – was established as the first regional electricity exchange with the aim of expanding its operations to the Central and Southeast European region. The founders of the ADEX Group were the transmission system operator in Slovenia (ELES d.o.o., with a 33.4% stake), the transmission system operator in the Republic of Serbia (*EMS JSC*, with a 33.34% stake), and an exchange partner (EPEX SPOT, with a 33.32% stake). Until 2023, ADEX Group d.o.o. had its headquarters in Belgrade and Ljubljana.

In October 2023, the headquarters of ADEX Group d.o.o. was relocated to Budapest, following the accession of a fourth member—the Hungarian transmission system operator (MAVIR)—with the aim of increasing spot market liquidity and simplifying trading and clearing in this part of Europe.

According to an extract from the Central Securities Depository and Clearing House JSC, as of the end of 2024, the sole shareholder of SEEPEX JSC Belgrade is the ADEX Group, which is simultaneously the sole founder of the Slovenian and Hungarian power exchanges (BSP and HUPX). As a result of the corporatization of regional exchanges, more than 120 members trade on the aforementioned electricity spot markets.

In 2024, distribution and distribution system operation on the whole territory of the Republic of Serbia was performed by the distribution system operator “*Elektrodistribucija Srbije*” LLC Beograd (DSO) which used to operate as *EPS Distribucija LLC* within PE *EPS* prior to this (until 2020). At the end of 2020, the process of harmonization of the operation of the company with the Law was completed by transferring ownership shares of PE *EPS* within “*EPS Distribucija LLC Beograd*” to the Republic of Serbia. Thereby, the conditions for this company, which is the distribution system operator, to operate independently from the vertically integrated company PE *EPS* (now *EPS JSC*) under a new business title “*Elektrodistribucija Srbije*” LLC Beograd were created.

The independence of the DSO is extremely important since only in such a manner a DSO can offer the distribution service to all market participants in a transparent way under the same conditions without favouring PE *EPS* which performs production and/or supply and without favouring companies associated with it.

At the end of 2024, energy licence for electricity distribution and for closed distribution system operation were held by six energy entities. A large number of electricity suppliers are licensed in Serbia. At the end of 2024, there were 94 licensed suppliers authorized to engage in wholesale electricity supply, as well as 79 suppliers permitted to operate on both the wholesale and retail electricity markets. Of these, 62 were active, while only 11 suppliers were engaged in supplying final customers on the free market.

Since 1999, a part of the power system of Serbia which is located on the territory of the Autonomous Province of Kosovo and Metohija (APKM) is under the administration of UNMIK in line with the United Nations Security Council Regulation 1244.

3.1.2 Production, transmission and distribution capacities

3.1.2.1 Production

The total net installed capacity of power plants connected to the transmission and distribution system in Serbia amounts to 8,440, without power plants on the territory of APKM (Table 3-1). These power plants delivered into the transmission and distribution system the total quantity of 35,171 GWh of electricity.

Table 3-1: Electricity production capacities in 2024 (without APKM)

Technology	Installed capacity (MW)	Delivered into the network (GWh)
Hydro power plants	3080	10.460.323
Thermal power plants (coal)	4051	21.274.095
Combined heat and power plants (gas, fuel oil)	552	1.672.390
Wind power plants	608	1.335.469
Solar power plants	95	88.557
Biomass and biogas	51	301.534
Other power plants	3	6.895
TOTAL	8440	35.171

Out of the total installed capacity of 8440 MW in power plants connected to the transmission and distribution systems, 8086 MW, or 95.81%, is connected to the transmission system, while 354 MW, or 4.19%, is connected to the distribution system. The share of power plants generating electricity from renewable sources in the total installed capacity is 45.43%.

The structure of production capacities, excluding the power plants on the territory of APKM is given in Figure 3-2. The share of the capacities within thermal power plants (TPP) amounts to 36.49%, of combined heat and power plants (CHPs) amounts to 6.54%, hydro power plants (HPPs) – 36.49 % connected to the transmission system, which is very important for system operation, apart from covering an important energy share). The share of wind power plants (WPP) is 7.2%, the share of solar power plants (SPP) is 1.13% (all SPPs are connected to the distribution system), and biomass and biogas plants together account for 0.6% (these plants are all connected to the distribution system). The share of other power plants was 0.04% (these were gas power plants connected to the distribution system in 2024).

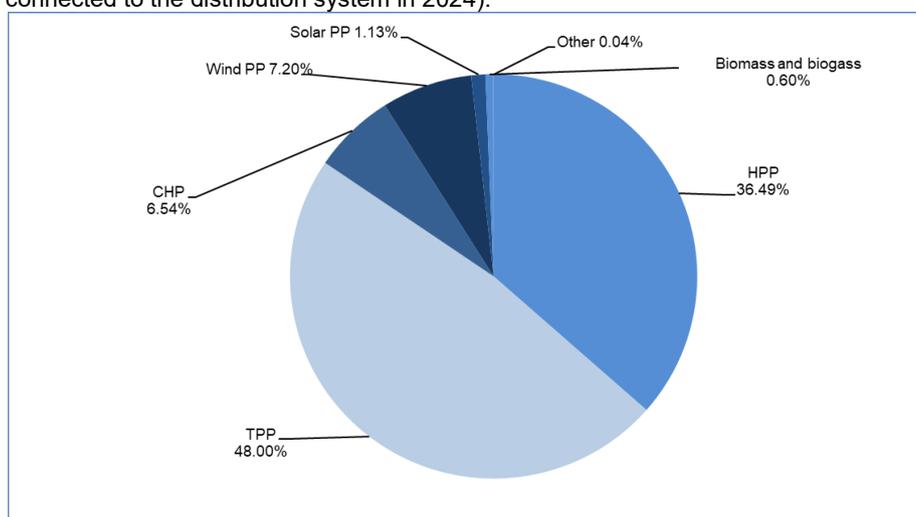


Figure 3-2: Production capacity structure in 2024 (without APKM)

Table 3-2: Power production capacities connected to the transmission system in 2024 (without APKM)

Power plant type	Number of power plants	Installed capacity MW	Delivered to network MWh
Hydro power plants	14	2948	10.173.375
Run-of-river hydro power plants	5	1990	9.158.092
Storage hydro power plants	9	958	1.015.283
Thermal power plants	6	4051	21.274.096
CHPs	4	513	1.457.445
Wind power plants	6	574	1.243.432
Solar power plants	0	0	0
Other power plants	0	0	0
TOTAL	30	8085	34.148.349

**Table 3-3: Power production capacities connected to the distribution system in 2024
(without APKM)**

Power plant type	Number of power plants	Installed capacity MW	Delivered to network MWh
Small hydro power plants	163	131.529	286.951
Biomass-fired power plants	1	2.380	20.545
Biogas-fired power plants	46	48.308	280.990
Power plants fired by landfill gas and gas from plants for treatment of public utility waste water	0	0	0
Wind-fired power plants	5	34.320	92.039
Solar power plants	181	95.167	88.557
Solar power plants on ground	47	84.659	77.225
Solar power plants on facilities	134	10.508	11.332
Geothermal energy-fired power plants	0	0	0
Combined production fossil fuels-fired power plants	15	38.962	214.945
Waste-fired power plants	0	0	0
Other power plants	2	3.409	6.895
TOTAL	413	354.075	990.921

In addition to EPS JSC, which is the largest and dominant electricity producer, there were 39 other energy entities holding a license for electricity production at the end of 2024, totalling 40. Additionally, there were 10 energy entities with a combined license for electricity and heat production, making a total of 11, which operate small production facilities connected to the distribution network.

Within EPS JSC, the dominant electricity producer, the installed capacity is as follows: 4,051 MW in lignite-fired thermal power plants, 2,948 MW in hydro power plants, 283 MW in natural gas or oil-fired thermal power plants, 39 MW in 21 small power plants (1 solar power plant and 20 hydro power plants) connected to the distribution system. Lignite for thermal power plants is produced in open pit mines within EPS JSC.

In addition to the generating capacities of EPS JSC, other producers' capacities are connected to the transmission and distribution networks. In 2024, the Pupin wind power plant, with an installed capacity of 95 MW, was connected to the transmission network. As a result, by the end of 2024 the total installed capacity of other producers connected to the transmission network amounted to 804 MW, of which 474 MW was in wind power plants and 230 MW in combined heat and power plants. By the end of 2024, 392 small power plants of other producers, with a total installed capacity of 315 MW, were connected to the distribution network.

Among all licensed other producers, the largest are: GAZPROM ENERGOHOLDING SERBIA TE-TO PANČEVO with a thermal power plant of 197 MW, ELECTRAWINDS K-WIND d.o.o. with the Kovačica wind farm of 104.5 MW, MK-FINTEL WIND AD with the Košava wind farm of 69 MW, Elicio Ali VE d.o.o. with the Alibunar wind farm of 42 MW, Naftna Industrija Srbije a.d. with an installed capacity of 11.94 MW across 9 facilities, Vetropark Kula d.o.o. with a wind farm of 9.9 MW, JKP Novosadska Toplana with a combined production facility of 9.98 MW, ELICIO MALI WF d.o.o. with the Alibunar wind farm of 8 MW and “NOVO SELO POWER” LLC with solar power plant Lebane – Novo Selo with installed capacity of 8 MW”.

3.1.2.2 Transmission

The transmission system, without a part of it on APKM, includes 36 transformer stations (TS) of voltage level of 400/x and 220/x kV/kV with total installed capacity of 16,985 MVA (28 of them with total installed capacity of 15,931 MVA owned by EMS JSC), 31 switching stations of voltage 400, 220 and 110 kV (19 of them owned by EMS JSC) and lines of voltage 400, 220 and 110 kV with total length of 10,290 km (10,115 km of lines owned by EMS JSC). Compared to 2023, there was no increase in capacity in the transmission system of EMS a.d., but the number of substations increased by two. In addition, four TSs with voltage level of 110/x kV/kV are owned by EMS AD: TS 110/35 kV/kV Beograd 4, which will become a part of TS 220/110/35 kV/kV/kV Beograd 17 within the reconstruction process, 400/220 kV/kV in Obrenovac, TS 110/35 kV/kV Sevojno and TS 110/6 kV/kV Obrenovac which serves to cover its own demand and the demand of TENT A thermal power plant.

The process of transfer of overhead lines and cables of 110 kV between EMS JSC and EPS JSC which was initiated in line with the Law in 2013 is still ongoing. The procedure of taking over remaining overhead lines and cables of 110 kV voltage level which are still owned by DSO is continued and it is expected to be completed in 2025.

The transmission system of EMS JSC is connected with neighbouring power systems via 20 interconnectors of 400, 220 and 110 kV.

Table 3-4: Data on the transmission system of EMS JSC at the end of 2024 (without APKM)

Transmission system element	Unit	
Network length, total	km	10.115
400 kV – network length	km	1.871
220 kV – network length	km	1.769
110 kV – network length (overhead lines and cables)	km	6.475
Number of transformers (including TS 110/x kV/kV)		76
Number of transformer stations and switchgear plants (including 110 kV voltage level)		51
Number of interconnections		20

3.1.2.3 Distribution

The independent distribution system operator *Elektrodistribucija Srbije* LLC performed electricity distribution and distribution system operation on the territory of the Republic of Serbia without APKM since April 1, 2021, when it was established. The distribution system, without the territory of APKM, includes 38,407 transformer stations with total installed capacity of 33,806 MVA and 173,134 km of distribution lines of voltage level of 110, 35, 20, 10 and 0.4 kV, via which electricity is distributed to final customers.

There are 36,934 transformer stations owned by DSO with total installed capacity of 31,976 MVA and 168,055 km of distribution lines of all voltage levels. Their structure is indicated in Table 3-5. In line with the legal obligation, transformer stations of 110/x kV/kV were taken over from EMS JSC. As far as the lines of 110 kV, there is only the remaining overhead lines and cables to be transferred to EMS JSC.

Table 3-5: Length of lines owned by DSO at the end of 2024 (without APKM)

Voltage level	Data for distribution areas					Total DSO
	Novi Sad	Beograd	Kraljevo	Niš	Kragujevac	
110 kV	0	6	0	0	2	8
35 kV	1.033	1.111	2.243	1.837	751	6.975
20 kV	9.210	24	1.714	0	0	10.948
10 kV	386	7.994	12.057	9.731	4.363	34.531
0.4 kV	14.427	21.472	45.699	21.294	12.701	115.593
Total	25.056	30.607	61.713	32.862	17.817	168.055

3.2 Consumption and generation

Electricity consumption by final customers (excluding the consumption of power plants in generation mode) amounted to 30.8 TWh and was higher by 0.8 TWh compared to the realized consumption of final customers in 2023.

Over the past ten years, EPS AD, as the dominant producer, reached its maximum electricity generation in 2023, equaling to 35.6 TWh. In 2024, approximately 32.9 TWh of electricity was generated in the production facilities of EPS AD, which is about 2.7 TWh less than in 2023. Electricity generation in coal-fired thermal power plants amounted to 21.27 TWh, which is about 0.26 TWh, or 1.2%, less than in the previous year. Generation in hydropower plants was lower by 2.3 TWh, or 18.8%, compared to 2023. EPS AD combined heat and power plants operated during the winter period in 2024, namely in January, February, March, October, November, and December, and produced approximately 341 GWh, which is 35% less electricity than in 2023. A total of 21 power plants owned by EPS AD were connected to the distribution network and jointly generated 72 GWh, which is 46% less than in 2023.

Electricity generation by other producers has been increasing year by year. Other producers include power plants connected to the distribution network, of which there were 413 in 2024, with total electricity generation of approximately 991 GWh. In addition to power plants connected to the distribution network, other producers also include six wind farms connected to the transmission network and two combined heat and power plants (Pančevo and Vinča), also connected to the transmission network. These six wind farms generated approximately 1,243 GWh of electricity, which is about 26% more than in 2023. The Pančevo and Vinča combined heat and power plants together generated approximately 1,116 GWh during 2024.



Figure 3-3: Production, import and gross consumption in Serbia in 2024 (without APKM)

In 2024, the total electricity generation in power plants in the Republic of Serbia amounted to 35,171 GWh. Of this, coal-fired thermal power plants produced 60.49%, hydropower plants 29.74%, combined heat and power plants 4.75%, wind farms 3.80%, solar power plants 0.25%, biomass and biogas plants 0.86%, while other power plants (small gas-fired plants connected to the distribution system) produced 0.02% of the total electricity generated. Producer-customers fed 32.1 GWh of electricity into the grid, which is 0.09% of the total electricity generated. The share of electricity produced from renewable energy sources (RES) relative to total electricity generation in 2024 was 34.74%.

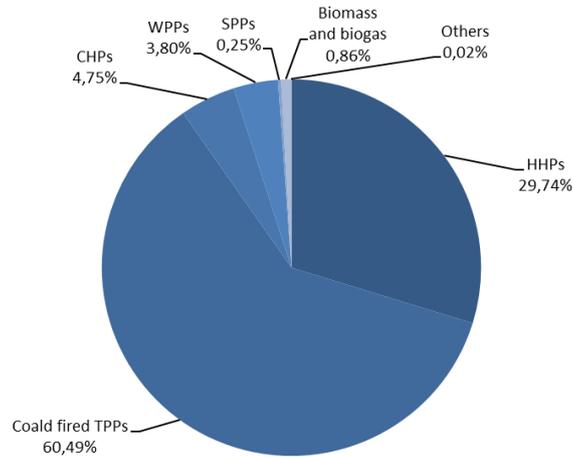


Figure 3-4: Generation structure in 2024 (without APKM)

Table 3-6: Electricity production and consumption in 2015 – 2024 (without APKM)

	2015.	2016.	2017.	2018.	2019.	2020.	2021.	2022.	2023.	2024.
GWh										
GENERATION										
Hydro power plants	10.529	11.227	9.477	11.031	9.884	9.419	11.587	8.893	12.526	10.173
Coal fired thermal power plants	25.017	25.016	24.240	22.954	23.169	24.331	21.537	21.413	21.535	21.274
Combined heat and power plants	45	90	185	238	337	192	630	1.058	1.576	1.457
Wind PPs connected to trans.sys.				85	830	905	1.004	876	985	1.244
Other power plants	321	448	538	642	612	693	898	872	1.071	1.023
Total generation	35.912	36.781	34.441	34.950	34.832	35.540	35.656	33.112	37.693	35.171

Other (UNMIK)	15	69	143	94	12	3	0	11	0	13
EPS' and of suppliers' import for the purpose of trade in Serbia	1.732	2.149	3.397	4.582	4.280	4.444	5.444	6.198	6.099	7.183
TOTAL AVAILABLE QUANTITY	37.659	39.075	37.981	39.626	39.124	39.987	41.100	39.321	43.792	42.367
EPS' and suppliers' export – of power produced and purchased in Serbia	2.142	3.696	2.186	4.246	3.940	4.708	4.792	3.385	7.992	6.620
Pumping	1.102	1.034	944	1.070	1.102	1.082	961	1.077	978	517
Other (UNMIK)	300	445	458	313	275	337	52	47	222	254
Gross consumption	34.115	33.825	34.320	33.997	33.807	33.853	35.217	34.789	34.541	35.188
Transmission network losses	932	892	852	868	806	798	845	802	926	857
Distribution network losses	4.236	3.917	3.953	3.664	3,527	3.587	3.636	3.383	3.202	3128
Total losses	5.168	4.808	4.805	4.532	4.333	4.385	4.481	4.185	4.128	3.985
Losses to gross consumption ratio	15,1%	14,1%	13,9%	13,3%	12,8%	13,0%	12,7%	12,0%	12,0%	11,3%
Final consumption *	28.947	29.016	29.515	29.465	29.474	29.468	30.862	30.604	30.413	31.203

* In comparison to final consumption given in the balance sheet of the Statistical Office of the Republic of Serbia, final consumption in this Report also includes electricity consumption in all energy sectors, including energy purchased by power plants for production purposes.

Table 3-7: Share of electricity production from RES in production and gross electricity consumption

Share of electricity production from RES in production and gross electricity consumption					
	2020.	2021.	2022.	2023.	2024.
Production of electricity from RES	10.871	13.255	10.402	14.362	12.218
Total electricity production	35.540	35.656	33.112	37.693	35.171
Gross electricity consumption	33.853	35.343	34.789	34.541	35.188
Share of electricity production from RES in total electricity production	30,59%	37,17%	31,41%	38,10%	34,74%
Share of electricity production from RES in gross electricity consumption	32,11%	37,50%	29,90%	41,58%	34,72%

3.3 Regulation of the transmission system operator

The joint stock company EMS JSC is the transmission system operator (TSO) in the Republic of Serbia. It is responsible for electricity transmission and transmission system operation as well as for organisation and administration of electricity bilateral and balancing market. The responsibilities of the transmission system operator are regulated by the Law in detail, i.e. the transmission system operator is obliged to provide: safe, reliable and secure operation of the transmission system, transmission system development, adequate transmission capacity for the purpose of security of supply, quality of electricity delivery; non-discriminatory and transparent access to the system, system balancing, accuracy and reliability of electricity metering on points of delivery into and from the transmission system, etc.

The most important activities of the transmission system operator in 2024 included the following:

- drafting ten-year transmission system development plan and three-year transmission system investment plan;
- drafting amendments to the Transmission Network Code, drafting Rules on Connection to Transmission System and Procedures for Connection to Transmission System in order to harmonise it with the Law and an obligation to implement European network codes which was assumed under the Energy Community;
- adoption of necessary amendments to the Rules on Electricity Market Operations aimed at harmonising with the Law;
- adoption of the rules for the cross-border transmission capacity allocation;
- execution of procedure for producers' facility connection;
- procurement of energy for the recovery of transmission network losses;
- system services contracting;
- monitoring security of supply and submission of the data which are to be incorporated into the report on security of energy supply to the ministry in charge of energy;
- setting electricity prices for the purpose of system balancing, in line with the Electricity Market Rules and regular publication of the data on active balancing energy and the settlement price;

- collecting and publishing the data and information related to electricity market transparency and monitoring;
- exchanging information necessary for safe and secure operations of the system with other system operators;
- activities related to the issuance of guarantees of origin;
- submission of the data and documentation necessary for monitoring transmission system operator's operations and price regulation to the Agency and
- other activities which improve the security, efficiency and transparency in the operations of the transmission system and market functioning.

Transmission Network Code

Transmission Network Code regulates technical aspects of transmission network operations and relations between *EMS JSC* as the transmission system operator and system users. The Code is available on websites of both *EMS JSC* and the Agency. The enforcement of the Network Code began in May 2008, upon the approval of the Council of the Agency of the first draft of the Code. Upon an amendment in December 2011, Code was adopted in July 2014. Following the adoption of the new Energy Law that year, on the session held on November 3, 2015, the Agency Council adopted a decision on the approval of the Transmission Network Code harmonised with this Law. During 2017, basic amendments were made to the Code due to corporatisation of the public enterprise and its transfer into closed joint stock company. In mid December 2017, the Agency Council approved the new Code. Simultaneously, amendments to the Code were in preparation in order to harmonise it with European network codes, guidelines and instructions. In the first half of 2018, *EMS JSC* prepared a Code draft which was under public consultation from June 4 till June 29, 2018. Taking into account comments from the public consultation, *EMS JSC* prepared a new Code draft which was adopted by the *EMS JSC* Assembly on the session held on December 27, 2018. The draft was submitted to the Agency for approval purposes. Upon the analysis of the submitted Code draft, the Agency Council adopted a decision to require certain Code amendments. Only after amendments were made, the proposed Code was approved. In April 2020, the Council of the Agency approved a new draft of the Code which was prepared by *EMS AD* in order to harmonise it with technical requirements arising from European network connection codes, with requirements for system operation under regular and emergency circumstances with mandatory technical acts of ENTSO-E Association (European Network of Transmission System Operators for Electricity) and with a new concept of technical operation system of *EMS JSC*. In November 2023, the Agency approved the new Transmission System Operating Rules. The main reason for changing the existing Rules was the amendment to the Energy Law, which introduced significant changes to the connection process and created the legal basis for the issuance of three acts related to connections: the Transmission System Operating Rules, the Rules for Connecting Facilities to the Transmission System, and the Procedure for Connecting to the Transmission System of Electric Energy. In addition to aligning with the Energy Law, the Rules also needed to comply with the Renewable Energy Sources Usage Law and be more closely aligned with European grid rules (adapted EU regulations) for system operation and emergency conditions, the operational agreement for the synchronous area of Continental Europe, specifically with the Regulation on Network Rules related to the connection of customer facilities and the Regulation on Network Rules related to the connection of generating units. During the preparation of these acts, the Regulation on the Conditions for Delivery and Supply of Electric Energy was also adopted and came into effect in October 2023. This Regulation, among other things, regulates the conditions for issuing connection approvals to the transmission system, the conditions for changing technical conditions at the connection point, and the approved capacity. In the end of 2024, amendments to the Energy Law were adopted and they will lead to further amendments to these rules.

3.3.1 Unbundling of the Transmission System Operator

A very important element of market reforms was achieved by unbundling network activity – electricity transmission as natural monopoly from production and supply which are market activities.

Since 2005, the transmission system operator - PE *Elektromreža Srbije* has been an independent legal entity, legally and functionally unbundled from energy entities operating in the field of power production and supply. In 2016, this public enterprise was corporativised and since that moment, it has been functioning as a closed joint stock company.

In line with the EU regulations, the 2014 Law established the model of the so-called ownership unbundling of the transmission system operator and the deadlines for its implementation. In line with the prescribed model, the independence of the transmission system operator is realised by not having the same person or persons authorised to exercise direct or indirect control over energy entities performing production or supply and over the transmission system operator at the same time. In addition, this (ese) person(s) is (are) not simultaneously authorised to be a member(s) or to appoint the members of the management body within the transmission system operator and energy entities dealing in electricity production or supply. In case when this person is actually the Republic of Serbia or a state body, the control over the transmission system operator and over energy entities in charge of production and supply, the control over the transmission system operator and over entities in charge of production and supply cannot be exercised by the same state body. When separate state bodies exercise the control, these bodies cannot be controlled by the same third party.

The compliance with the conditions for the implementation of the ownership model of unbundling of the transmission system operator which is prescribed by the law is examined within the certification procedure which is implemented by the Agency.

The ruling legal ground imposes that only after a legal person is certified as a transmission system operator, the person may submit an application for the issuance of an energy licence for transmission and transmission system operation to the Agency. In line with the Law, this legal person is appointed as an electricity transmission system operator by the issuance of the licence.

Acting within a deadline prescribed by the law, in October 2016, *EMS JSC* submitted a certification application to the Agency. Following the certification procedure which implies the adoption of a preliminary decision on certification in the first place (by the Decision of the Agency Council of January 26, 2017, when *EMS JSC* was preliminarily certified as an electricity transmission system operator), obtaining the opinion of the Energy Community Secretariat (the Energy Community Secretariat submitted its opinion to the Agency on June 16, 2017), by the Decision of the Agency Council of August 4, 2017, in line with the Energy Law and the Rulebook for Energy Licence and Certification, a final certificate was issued to the Joint Stock Company "Elektromreža Srbije" Beograd as to an electricity transmission system operator.

Following the adoption of the certification decision, on December 8, 2017, the Agency Council issued a licence to the Joint Stock Company "Elektromreža Srbije" Beograd for the performance of electricity transmission and transmission system operation. Acting in line with the jurisdiction arising from the Energy Law, on September 20, 2017, the Energy Community Secretariat submitted a request for the initiation of a certification procedure to assess the compliance of *EMS JSC* with the unbundling criteria again.

Considering the given request, following the issuance of an opinion of the Ministry of Mining and Energy, Ministry of Economy, Ministry of State Administration and Local Self-Government and the Republic Legislation Secretariat stating that the ministries are independent in their activities and working within the Constitution of the Republic of Serbia and based on it, based on the law and other regulations and general acts and stating that one ministry cannot supervise the work of another ministry, on April 26, 2018, the Agency informed the Energy Community Secretariat that the Agency considered the final decision valid and that the request for the initiation of a new certification procedure for *EMS JSC* was not justified. It was not justified since there is neither mutual influence in the work of the ministry in charge of economic affairs and the ministry in charge of energy issues, nor the Government over the work of ministries, and therefore, there is no unique control over the transmission system operator on one hand and over energy entities operating in the field of electricity production and supply on the other hand.

To ensure full separation of the system operator, the Law on Amendments and Supplements to the Energy Law ("Official Gazette of RS", No. 62/23) was adopted in July 2023 and began to be applied on November 1, 2023. This law established the Republic Commission for Energy Networks as an independent and autonomous body of the Republic of Serbia responsible for overseeing the electricity transmission system operator, which is owned by the Republic of Serbia and performs the energy activity of transmission and transmission system operation as a matter of public interest. The same law repealed the provisions of the Law on Ministries ("Official Gazette of RS" No. 128/20 and 116/22) that had previously assigned the Ministry of Economy with the administrative responsibilities related to oversight and preparation of proposals for the appointment and dismissal of management bodies and capital representatives in *EMS JSC*.

3.3.2 Price regulation

3.3.2.1 Costs of connection to the system

The costs of connection to the system are set by the TSO on the basis of elements given in the connection application and the Methodology for Setting Costs of Connection to the Electricity Transmission and Distribution Systems ("Official Gazette of RS", No. 109/15; valid as of 01/03/2016) which is adopted by the Agency. The Methodology defines types of costs: collection of documentation, procurement and instalment of equipment and material, works, the manner of calculation of all costs. In addition, the TSO is obliged to adopt certain standards and to use market prices, i.e. prices of work and services when setting costs of connection in their decision on connection.

Since connections to the transmission system cannot be standardized and since each of them is a project of its own, TSO is obliged to comply with principles of transparency and non-discrimination and to inform the applicant, upon his/her request, on the documents which serve as the basis for setting the level of connection costs and the method for setting these costs.

Except for paying for the construction of the connection, the applicant is obliged to pay defined set of costs arising from the connection of the applicant's facility to the system.

TSO is the investor, i.e. the owner of the constructed facility (of the connection line, metering equipment and other equipment, up to the metering point within the customer's facility).

In line with the Law, *EMS JSC* also adopted the Procedure for Connection of Facilities to Transmission System which was approved by the Agency. This procedure regulates the schedule of TSO's activities and the connection applicant in more detail and the deadlines in the procedure of facility connection to the transmission system.

3.3.2.2 Use-of-system charge

Upon the positive assessment of the Council of the Agency and the approval of the Government of the Republic of Serbia, regulated electricity transmission use-of-system charges were applied on January 1, 2008 for the first time. Since then, they have been modified eight times. The last time they were modified was on October 1, 2021. In 2024, charges were not modified. The trend of the annual level of approved electricity transmission use-of-system charges (VAT and duties free) are given in the table below:

Table 3-8: Trend of annual level of average approved transmission use-of-system charges²

	Annual level of approved charge				
	as of	as of	as of	as of	as of
	01/03/2013	01/03/2017	01/11/2019	01/02/2021	01/10/2021
Total electricity transmission use-of-system charge	0.44	0.49	0.50	0.56	0.62
Net electricity transmission use-of-system charge *	0.18	0.28	0.29	0.34	0.35

* Net electricity transmission use-of-system charge is calculated by reducing the total maximum allowed revenue by system services costs and loss recoveries in the transmission grid and dividing it with the total annual delivered electricity quantities.

The charges which were valid in 2024 are listed in Table 3-9.

Table 3-9: Transmission use-of-system charges which were valid in 2024

Tariff element	Calculation element	Unit	RSD Charge as of 01/10/2021
Power	Accounting power	kW	59.3603
	Extra power	kW	237.4412
Active energy	Higher day-time	kWh	0.4742
	Lower day-time	kWh	0.2371
Reactive energy	Reactive energy	kvarh	0.2863
	Extra reactive energy	kvarh	0.5727

In 2024, the Agency Council adopted one decision on amendments and addenda to the Methodology for Determining the Access Price to the Electricity Transmission System. The current transmission use-of-system charge is available on the Agency website (www.aers.rs).

In 2024, by the application of ruling charges to actual tariff elements, average transmission use-of-system charge (VAT and duties free) was realised. It amounted to 0.61 RSD/kWh.

Table 3-10: Average transmission use-of-system charges

	RSD /kWh										
	2015.	2016.	2017.	2018.	2019.	2020.	2021.	2022.	2023.	2024.	2015.
Realised transmission use-of-system charges	0,43	0,43	0,48	0,49	0,49	0,50	0,56	0,62	0,62	0,61	0,43

Transmission use-of-system charges (VAT and duties free) in European countries are given in line with 2024 EUROSTAT data in the Figure 3-5.

² Terms related to prices used in the Report include the annual price level and average price. The annual price level represents the quotient of the revenue arising by the application of ruling tariffs on a certain date to annual quantities and other tariff elements used in the process of tariff approval. The average price represents the quotient of the realized revenue and realized quantities over a period of one year. If there were no changes in prices over a one-year period, these two prices should be similar, i.e. there should be only small difference between realized quantities and tariff elements compared to the planned ones which are used in the process of price approval.

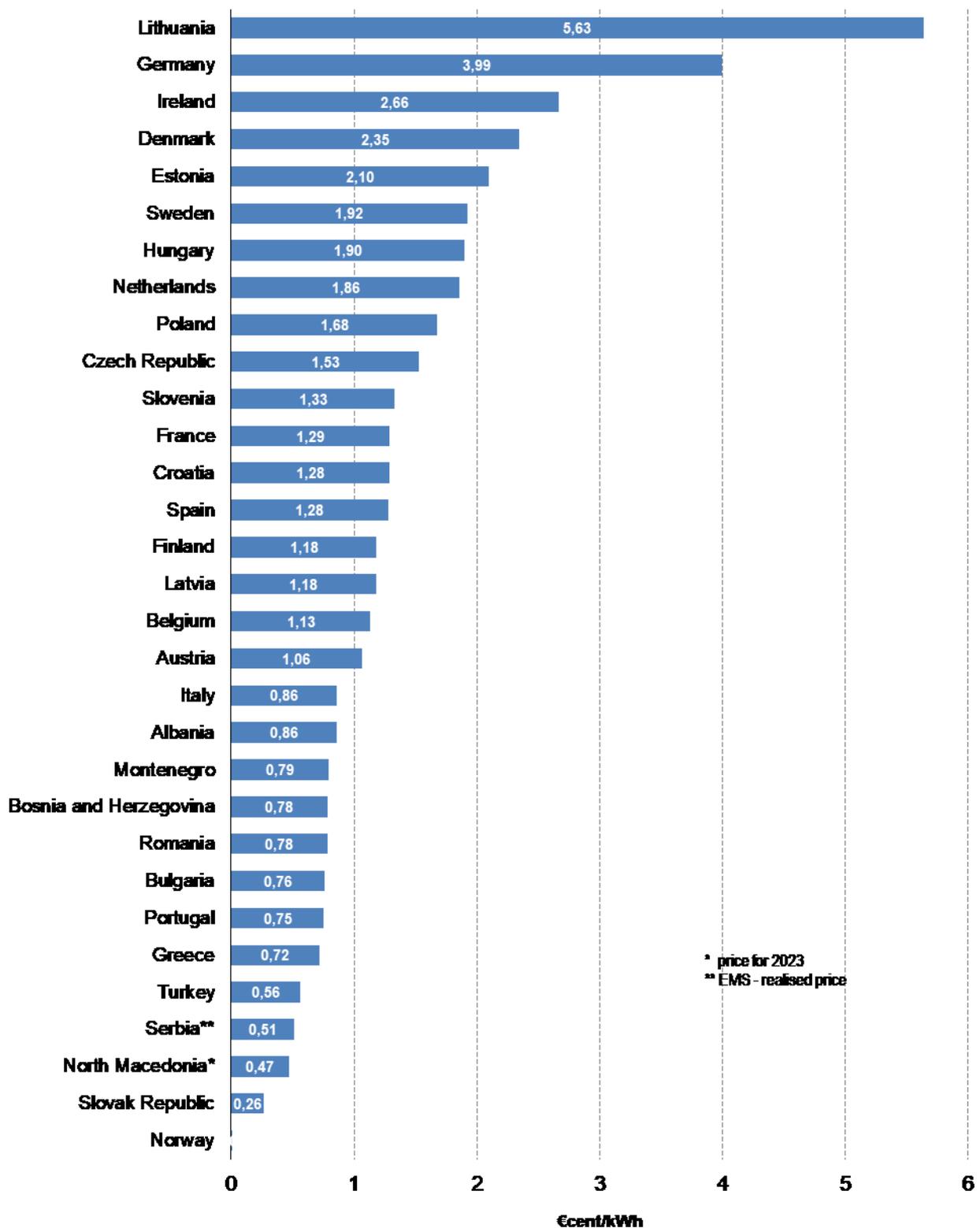


Figure 3-5: Transmission use-of-system charge (€/MWh) in 2024

3.3.2.3 Prices of secondary and tertiary control reserve

The Electricity Transmission Network Code defines that the level of capacity which has to be reserved for the purpose of system service - primary control is set in line with Rules on interconnection operations, that the range of secondary control capacity amounts to 160 MW and that tertiary control capacity amounts to 300 MW for positive and 150 MW for negative reserve. It also defines that the whole reserved capacity has to be provided from production units connected to the local transmission system.

The Electricity Transmission Network Code defines the manner how production units connected to the local transmission system provide these services as well as the ability of the system operator to engage the missing capacity or procure energy for system services purposes from other electricity market participants (suppliers and wholesale suppliers) or from the operator of another transmission system.

Usually, the Agency adopts Decision on Prices of Capacity Reserve for System Services of Secondary and Tertiary Control at the end of each calendar year. The price of these system services for 2024 were set in line with the mechanism for setting total annual cost of provision of secondary and tertiary control service which is based on setting total annual costs of construction and maintenance of replacement capacity which would be used only for the provision of these services.

The prices of 2024 capacity reserve for the purpose of secondary control were set on the level of 1,260 RSD/MW and of tertiary control of 443 RSD/MW in case capacity was supposed to be increased. The service of tertiary control in case capacity is supposed to be reduced and primary control are free of charge.

3.3.2.4 Prices of ancillary services

Beside setting prices of system services, the Agency also sets the prices of ancillary services (voltage regulation and reactive power control and black start) which are provided to the transmission system operator by producers whose facilities are connected to the power system. For 2024, prices of ancillary services for the voltage regulation and reactive power were set in thermal power plants and combined heat and power plants amounting to 17,161 RSD/Mvar inductively and 18,690 RSD/Mvar capacitively and in hydro power plants amounting to 36,994 RSD/Mvar inductively and 34,895 RSD/Mvar capacitively. Prices for black start operation are set on the annual level as the lump sum based on total annual cost of equipment for black start in power plants used for these purposes. For 2024, they were set to the amount of RSD 10,896,048. They are billed in equal monthly instalments of RSD 908,004.

Total allowed annual levels for the provision of system and ancillary services in the last 6 years are indicated in Table 3-11.

Table 3-11: Total annual level for the provision of system and ancillary services

Year	000 RSD					
	2019	2020	2021	2022	2023	2024.
Total annual value	3,583,388	3,707,962	3,782,748	3,886,051	4,039,793	4.395.372

3.3.2.5 Prices of Non-Standard Services

The Law prescribes that in addition to providing services to customers and system users which are charged via use-of-system charge or via connection costs, upon a system user's request, i.e. other persons', the transmission system operator also provides services which are not included in the above stated prices. In addition, the operator provides services when necessary in order to remove the consequences arising from a customer's or system user's acts which are contrary to regulations. Since these services are individual and occurring from occasionally upon a system user's request, i.e. other persons' they are called non-standard services. In order to compensate the costs arising from the provision of these services, EMS JSC established a price list for non-standard services which was approved by the Agency Council in August 2017. The list classifies non-standard services and establishes unit prices. These prices have not been modified and, for this reason, they were applied in 2024 as well.

3.3.3 Access to cross-border capacities

3.3.3.1 Cross-border capacity allocation and combustion management

The Republic of Serbia borders with eight countries and there are twelve interconnection overhead lines (400kV and 220kV) where EMS JSC allocates the rights to use transmission capacities. On the Serbian-Hungarian border since 2011, Serbian-Romanian border since 2013, Serbian-Bulgarian and Serbian-Croatian since 2014, on Serbian-Bosnian and Herzegovinian border since 2014, on Serbian – North Macedonian border since 2017 and on Serbian-Montenegrin border since 2020, joint explicit auctions have been organised for the allocation of 100% of available capacity. There was no transmission capacity allocation on the border with Albania in 2024. Since 2018, Joint Auction Office S.A. from Luxembourg has been organizing coordinated cross-border capacity allocation on the Serbian – Croatian border. Since 2019, this has been the case with the Serbian – Bulgarian border as well. As of 2024, this was also the case on the Serbian – Hungarian border.

Rules for the cross-border transmission capacity allocation

Being the TSO, EMS JSC is responsible for the allocation of rights to use available cross-border transmission capacities on interconnection lines of the Serbian power system. The mechanism for the allocation of rights to use available cross-border

transmission capacities is defined by the Transmission Network Code, the agreements between the transmission system operator of the Republic of Serbia and the transmission system operators of Hungary, Romania, Bulgaria, Bosnia and Herzegovina, Croatia, North Macedonia and Montenegro on the procedure and method of allocation of cross-border capacities and access to cross-border transmission capacities and general Rules for Available Cross-Border Transfer Capacities Allocation on Borders of Control Area of Republic of Serbia. The Agency Council approved the rules and agreements which were applicable in 2024 at the end of 2023.

Cross-border capacity allocation

Being the TSO, EMS JSC is responsible for the calculation, allocation and use of cross-border transmission capacities on all borders of the control area of the Republic of Serbia. More details on the cross-border capacity allocation are available on the website of the Transmission System Operator (www.ems.rs). The right to participate on cross-border capacity allocation auctions is held by market players holding licence for electricity wholesale supply or electricity supply and having a contract signed with EMS JSC on balancing responsibility.

Tables 3-12 and 3-13 indicate average monthly amounts of net cross-border transmission capacities (NTC) on all borders in both directions.

Table 3-12: Average monthly level of NTS for entry into Serbia in 2024

Border/months	MW											
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Hun---> Ser	587	603	684	630	345	483	200	200	537	2295	2003	458
Rom---> Ser	455	517	565	453	437	400	400	352	428	548	500	800
Bul ---> Ser	350	350	350	350	400	400	271	374	400	439	400	400
N.Mac---> Ser	600	450	500	500	500	500	419	500	400	461	490	400
Mon---> Ser	200	200	200	180	200	200	200	200	200	200	200	200
BosHer--- Ser	600	500	600	567	455	457	373	500	500	576	600	500
Cro---> Ser	150	300	300	245	300	293	300	300	275	300	300	300

Table 3-13: Average monthly level of NTS for exit from Serbia in 2024

Border/months	MW											
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Ser --->Hun	671	676	781	657	374	540	200	200	53	252	200	510
Ser --->Rom	700	696	598	600	600	400	429	445	600	600	527	800
Ser --->Bul	350	350	350	350	400	400	271	374	400	439	400	400
Ser --->N.Mac	600	600	600	600	600	600	503	600	500	600	600	500
Ser --->Mon	300	300	300	280	300	300	300	300	300	300	300	300
Ser --->BosHer	600	500	600	585	600	380	397	500	462	600	600	600
Ser --->Cro	150	300	300	245	300	300	300	300	275	300	300	300

In 2024, EMS JSC organised explicit auctions on cross-border transmission capacities on all borders and in all directions of the control area of the Republic of Serbia.

For the allocation of 100% of available capacity on Serbian-Romanian border, EMS JSC organised explicit auctions charging in line with the last successful price ("marginal price"), while the Romanian transmission system operator CNTEE Transelectrica S.A. realised the allocation of the available annual and monthly capacity on daily level charging in line with the last successful price ("marginal price"), as well as on the intraday level, by organizing explicit auctions (6 4-hour sessions). There were 38 participants registered in total on all auctions organised by EMS JSC.

In 2024, Joint Auction Office JAO S.A. was responsible for the organisation of annual, monthly and daily explicit auctions on Serbian – Croatian, Serbian – Bulgarian and Serbian – Hungarian border applying the "marginal price" charging method. EMS JSC organised available capacity allocation on intraday level on Serbian – Croatian border and Serbian – Bulgarian border by using the method „first come-first served“.

In 2024, EMS JSC organised annual and monthly explicit auctions for the allocation of 100% of available. by method "first come-first served" capacity on Serbian-Bosnian and Herzegovinian border charging in line with the last successful price ("marginal price"), and the same method was used by the Bosnia and Herzegovina transmission system operator (NOSBIH) which organised daily explicit auctions. NOSBIH also organised intraday auctions by using the method „first come-first served“. There were 43 registered participants in the auctions organised by EMS JSC.

The North Macedonian Transmission System Operator MEPSO organised annual and monthly explicit auctions for the allocation of 100% of available capacity on the North Macedonian border in line with the "marginal price" charging method. EMS JSC organised the allocation of available capacity on daily level in line with the "marginal price" charging method and

on intraday level in line with “first come-first served” charging method. There were 43 participants registered in the capacity allocation organised by EMS JSC.

In 2024, EMS JSC organised annual and monthly explicit auctions for the 100% available capacity allocation on Serbian-Montenegrin border by using the method of “marginal price”, while, using the same method the transmission system operator of Montenegro (CGES) organised daily explicit auctions and organised intraday capacity allocation by using the method “first come-first served”. There were 47 participants registered in the auctions organised by EMS JSC.

The data on the joint annual auctions for 2024 are given in Table 3-14.

Table 3-14: Data on joint annual auctions for the allocation of cross-border transmission capacities in 2024

Border – direction	Available Cross-Border Capacity - ATC (MW)	Number of auction participants entitled to capacity	Marginal price (EUR/MWh)
Hungary – Serbia*	200	12	1,64
Serbia – Hungary*	200	17	2,39
Romania – Serbia*	250	5	1
Serbia – Romania	250	11	0,1
Bulgaria – Serbia**	150	13	3,89
Serbia – Bulgaria**	150	12	1,43
Croatia – Serbia**	150	19	0,99
Serbia – Croatia**	150	12	1,59
BiH - Serbia	150	18	1,67
Serbia - BiH	150	15	0,12
North Macedonia – Serbia*	150	10	1,1
Serbia – North Macedonia*	150	10	2,1
Montenegro - Serbia	100	19	1,34
Serbia – Montenegro	100	19	3,69

* Data gathered from the neighbouring transmission system operator

** Data gathered from the JAO S.A.

The data on joint monthly auctions in 2024 are given in Table 3-15.

Table 3-15: Data on joint monthly auctions for the allocation of cross-border transmission capacities in 2024

Border – direction	No. of days with “0” capacity	Number of congestions/total number of auctions	Number of participants in auctions entitled to capacity (min.-max.)	Range of marginal prices in case of congestion EUR/MWh
Hungary – Serbia*	104	22 / 30	0 – 25	0,61 – 12
Serbia – Hungary*	127	21 / 31	0 – 28	1,41 – 15
Romania – Serbia*	45	29 / 39	4 – 11	0,01 – 1,95
Serbia – Romania*	45	16 / 24	5 – 10	0,05 – 1,2
Bulgaria – Serbia**	12	14 / 16	7 – 21	0,7 – 4,5
Serbia – Bulgaria**	12	14 / 16	10 – 22	1,06 – 2,97
Croatia – Serbia**	47	15 / 18	0 – 14	0,88 – 13,44
Serbia – Croatia**	47	13 / 16	0 – 13	0,6 – 1,77
BiH - Serbia	0	25 / 25	14 – 14	0,11 – 4,67
Serbia - BiH	0	21 / 21	4 – 14	0,01 – 1,11
North Macedonia – Serbia*	5	17 / 18	12 – 17	0,40 – 3
Serbia – North Macedonia*	5	13 / 14	14 – 20	0,2 – 1,3
Montenegro - Serbia	0	13 / 13	6 – 11	0,31 – 5,01
Serbia – Montenegro	0	15 / 15	7 – 17	2,2 – 6,58

* Data gathered from the neighbouring transmission system operator

** Data gathered from the JAO S.A.

At the end of 2024, EMS JSC concluded agreements on the organization of common allocation/auctions for 2025 with those neighbouring transmission system operators that had them organized in 2024 as well. The Council of the Agency approved all these agreements by the end of 2024.

3.3.3.2 Annual exchange within and across the borders of control areas

The total scale of cross-border transactions in 2024 amounted to 16,219GWh – entrance, i.e. 15,662 GWh – exit from the market area of Serbia. The scale of internal transactions³ amounted to 28,043 GWh. Table 3-16 indicates the scale of nominated and confirmed internal and cross-border transactions in the period 2013-2024.

Table 3-16: Cross-border and internal transactions in the market area of Serbia 2013 - 2024

Year	GWh		
	Cross-border transactions – entry	Cross-border transactions – exit	Internal transactions
2013	10,094	13,939	11,711
2014	16,637	14,416	11,574
2015	16,165	16,910	9,835
2016	15,526	17,844	15,633
2017	19,133	17,822	15,865
2018	17,350	16,837	20,536
2019	17,331	16,868	20,788
2020	17,971	18,815	26,272
2021	17,043	16,382	22,493
2022	16,361	13,548	18,517
2023	17,621	19,754	24,026
2024.	16.219	15.662	28.043

In 2024, compared to the previous year, the volume of cross-border transactions decreased by about 8% in the import direction and by about 21% in the export direction. Compared to the previous year, the largest decline in exports at the borders was recorded toward Hungary (48%), Bosnia and Herzegovina (22%), Montenegro (15%), and North Macedonia (2%), while a significant drop in imports was observed from Romania (45%), Hungary (33%), Montenegro (16%), and Bulgaria (2%), whereas imports from Bosnia and Herzegovina (24%) and North Macedonia (9%) increased. During 2024, the overall trading volume decreased, while internal exchanges increased by approximately 17% compared to the previous year. In addition to the transactions shown in Table 3-16, part of the cross-border exchange was realized through islanded operation of the distribution systems of Serbia and Bosnia and Herzegovina, amounting to 4.58 GWh from Serbia to Bosnia and Herzegovina and 0.94 GWh in the opposite direction, as well as through islanded operation of the distribution systems of Serbia and North Macedonia, amounting to 0.32 GWh from Serbia to North Macedonia.

Table 3-17 indicates the scale of cross-border transactions for each border for 2024.

Table 3-17: Entry and exit nominated cross-border transactions for each border for 2024

Border with	GWh	
	Entry into Serbia	Exit from Serbia
Romania	1.791	2.732
Bulgaria	1.826	2.010
North Macedonia	2.013	3.344
Montenegro	921	1.933
BiH	3.490	1.202
Croatia	3.331	1.257
Hungary	2.847	3.184
On all borders	16.219	15.662

³ Bilateral trade between two balancing responsible parties in Serbia

3.3.3.3 Use of revenue arising from the cross-border capacity allocation

In 2024, EMS JSC generated revenue from capacity allocation amounting to around €47.6 million in line with the following structure:

Table 3-18: Revenue from cross-border capacity allocation in 2024

Allocation	Revenue (€)
Annual	15.364.548
Monthly	23.664.867
Daily	8.526.774
Total	47.556.189

3.3.4 Transmitted electricity quantities

Table 3-19 indicates the transmitted electricity quantities and transmission system losses in 2024 in comparison to the quantities planned for 2024 in the balance sheet. In comparison the balance sheet planned data, transmitted energy quantities were by around 4.5% lower while the losses were around 3.6% lower than the planned ones.

Table 3-19: Basic indicators of transmission plan realisation (without APKM)

	2024		
	Balance	Realised	Real./Bal.
Entry (GWh)	43.067	41.126	95,49
Losses (GWh)	889	857	96,4
Losses (%)	2,06%	2,08%	100,97
Exit (GWh)	42.178	40.269	95,47

The physical transit per month is indicated in table 3-20.

Table 3-20: Electricity transit by months of 2024 (physical flows)

Month	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Transit (GWh)	355	328	381	546	495	493	370	377	383	503	504	443

On a part of the system without APKM, 41,126 GWh of electricity were withdrawn in total. Out of the number, 32,905 GWh were withdrawn from hydro power plants, thermal power plants and combined heat and power production plants connected to the transmission system, 1243.4 GWh were withdrawn from wind power plants connected to the transmission system 6, 934 GWh were withdrawn from neighbouring systems. Because of the production of power plants connected to the distribution system which exceeded the demand in these parts of the distribution system, around 43.3 GWh of electricity was withdrawn from the distribution system. The greatest share of energy which was withdrawn was delivered to electricity distribution systems, final customers, neighbouring system and pumped-storage plants for pumping purposes respectively.

Table 3-21: Transmitted energy, maximum load and losses (without APKM)

	Unit	2023.	2024.	2024./2023.
Transmitted electricity	GWh	41.839	41.126	98,3
Maximum daily gross consumption	GWh	119,721	126,922	106,0
Maximum hourly load	MW	5.396	5.706	105,7
Transmission system losses	GWh	927	857	92,4
Transmission system losses (as % of transmitted electricity)	%	2,21	2,08	94,1

In 2024, without APKM, electricity losses in the transmission system of Serbia amounted to 857 GWh, which represents 2.08% of electricity withdrawn into the transmission system. In 2024, the Transmission System Operator (EMS JSC) purchased electricity to cover losses on the bilateral market in line with the contract on full supply.

Electricity consumption in Serbia, but in the region as well, depends on the season. Therefore, maximum consumption is seen in wintertime at lowest temperatures or on days prior to holidays. During the first and last quarter of 2024, in Serbia, without APKM, average daily consumption which greatly depends on the average daily temperature amounted to 103,163 MWh. The highest daily gross consumption amounted to 126,922 MWh on January 12, 2024. On the same day, at 6 o'clock p.m., maximum 2024 hourly load was reached – 5,706 MW.

3.4 Regulation of the distribution system operator

On July 1, 2015, by the reorganization of PE EPS, a specific daughter company Distribution System Operator “EPS Distribucija” was established and it performed the activity of electricity distribution and distribution system operation on the

territory of Serbia without APKM. As of April 1, 2021, this activity is performed by the company “*Elektrodistribucija Srbije*” LLC, (DSO). The Law regulated in detail the DSO responsibility to provide: safe and reliable distribution system operations and the quality of electricity delivery, distribution system development, non-discriminatory and transparent access to the distribution system, support to efficient market functioning, accuracy and reliability of electricity measurements on delivery points from and into the distribution system and quality of electricity delivery.

The most important activities of the distribution system operator in 2024 were as follows:

- organisational changes in order to provide for efficient operation of a single distribution system operator;
- drafting distribution system development plan and the distribution system investment plan;
- taking over metering points and associated equipment (connections) in accordance with the takeover plan.
- collecting and delivering documentation for the licensing of distribution system facilities.
- activities on metering points and accompanying equipment (connections) transfer;
- cooperation with *EMS JSC* and suppliers on the provision of data related to market functioning and balancing responsibility;
- submission of the data and documents necessary for monitoring operator’s work and for the analysis of the data necessary for price regulation to the Agency;
- submission of the data which are to be incorporated into the report on security of energy supply to the ministry in charge of energy;
- procurement of energy meant for distribution grid loss recovery and
- other activities which improve the security, efficiency and transparency of the distribution system operations as well as market functioning.

The DSO had an obligation prescribed by the Law to take over metering devices, switchboards, connection lines, installations and equipment in the switchboard and other devices within the connection in the facilities of existing customers or producers since these devices and equipment are part of the distribution system by the end of 2020 but they did not comply with it. Since these devices and equipment are a part of the distribution system, amendments to the Energy Law of May 2021 prescribed that this transfer should be realised by the end of 2024. Even after the expiration of this period, the DSO did not fulfill this obligation, and will have to continue in accordance with the Law during the next period.

Distribution Network Code

The Distribution Network Code regulates technical conditions for connection of customers to the system, technical and other conditions for safe operation of the distribution system and for the provision of reliable and continuous delivery of electricity to customers, procedures in case of crisis, rules on third party access to the distribution system, functional requirements and the category of measuring devices, electricity measuring method and other issues important for the operation of the distribution system. After its establishment, the DSO submitted these rules, to which the Agency Council gave its consent at the session held on July 19, 2017. In 2018, amendments to the Code which served to remove noticed technical errors were prepared. In the beginning of 2019, the amendments were submitted to the Agency for approval. On the session held on March 1, 2019, the Agency Council approved the proposed amendments. Since then, there were no activities on the amendments to this Code but following the adoption of amendments to the energy law in May 2021 and following the adoption of decrees which regulate the connection to the distribution system which were adopted in 2022 and the decree regulating electricity delivery and supply that was adopted in October 2023 created conditions for the DSO to prepare new Network Code which will be harmonised with these acts. The amendments to the Energy Law adopted at the end of 2024 defined additional requirements for the revision of the Rules of Operation, making it necessary for the new rules to be adopted as soon as possible in the next period.

3.4.1 Unbundling of DSO

By unbundling of network activity – electricity distribution as a natural monopoly from production and supply which are market activities, a very important element of market reforms is reached.

In 2020, electricity distribution on the territory of the Republic of Serbia was performed by one subsidiary company Distribution System Operator *EPS Distribucija d.o.o.* Beograd as a part of a vertically-integrated company *PE EPS*. Since the Distribution System Operator which is a part of a vertically integrated company has to be independent in terms of the legal form, organization and decision-making process from other activities which are not connected to the electricity distribution activity, via the transfer of shares of *PE EPS* to the Republic of Serbia at the end of 2020 and via the registration of a new company in early 2021, DSO started performing the activity independently without the control of *PE EPS* and this is the moment when it also starts operating under a new business title “*Elektrodistribucija Srbije*” LLC.

In line with the Law (Article 131), the independence of the distribution system operator is provided by having persons responsible for the management of the distribution system operator restricted from participation in management bodies of the vertically-integrated company which are directly or indirectly responsible for electricity production, transmission or supply, as well as by taking measures which ensure that the persons responsible for the management of the distribution system

operator act in a professional manner in order to provide for their independence during work. In addition, the distribution system operator is supposed to adopt decisions independently from the vertically-integrated company if these relate to funds necessary for the network operation, maintenance and development, as well as to current operation, i.e. decisions on the construction or upgrade within the distribution network if they comply with the approved financial plan.

Pursuant to the Law (Article 132), a Distribution System Operator which is a part of a vertically-integrated company is obliged to adopt the Compliance Programme for Non-Discriminatory Treatment which includes measures for the prevention of discriminatory behaviour, the method of monitoring the implementation of these measures and obligations of employees to achieve set goals. The Agency Council approved the DSO Compliance Programme by its decision from June 2016, the Council of the Agency approved the Compliance Programme of the Distribution System Operator by their decision of June 2016. Following the transfer of shares to the Republic of Serbia and the establishment of "Elektrodistribucija Srbije" LLC, this company submitted a new Compliance Programme to the Agency at the end of 2021 which was approved by the Agency in February 2022 in line with the Law.

Having in mind that the Distribution System Operator is obliged to appoint a Compliance Programme Officer, The Agency Council approved conditions for the appointment and duration of term of a compliance monitoring officer, as well as the approval of the appointment decision which was adopted previously in June 2016. At the end of 2021, "Elektrodistribucija Srbije" LLC submitted a request for approval of decision on appointment of compliance officer in "Elektrodistribucija Srbije" LLC to the Agency which was approved by the Agency in June 2022 in line with the Law.

At the beginning of 2023, "Elektrodistribucija Srbije" LLC submitted a new request to the Agency for approval of the conditions for appointing and the duration of the mandate of the Compliance Officer, as well as for prior approval of the appointment decision, since the person appointed in 2022 had ceased their employment with the distribution system operator. The Agency Council granted the requested approvals in February 2023, in accordance with the law.

According to the Energy Law, the Compliance Officer is responsible for monitoring the implementation of the Compliance Program and ensuring that the distribution system operator's operations comply with the regulations governing transparency and confidentiality. The officer must notify the Agency if the vertically integrated company's decision-making processes obstruct or delay projects from the Investment Plan, as well as report any other significant violations related to the implementation of the Compliance Program. The officer is also responsible for preparing an annual report on the implementation of the Compliance Program and submitting it to the Agency for review and opinion. In September 2023, the Agency Council issued a Reasoned Opinion on the Annual Report on the Implementation of the Compliance Program for 2021, which the Compliance Officer had submitted to the Agency in June 2023. The Compliance Program for 2022, which the Compliance Monitoring Officer submitted to the Agency in May 2024, and, in December 2024, also the Reasoned Opinion on the Annual Report on the Implementation of the Compliance Program for 2023, submitted in October 2024.

3.4.2 Price regulation

3.4.2.1 System connection costs

The DSO establishes distribution system connection costs on the basis of connection application and the Methodology for setting costs of connection to electricity transmission and distribution system which is adopted by the Agency ("Official Gazette of RS", No. 109/15; valid as of 01/03/2016). The Methodology sets the types of costs: provision of documentation, procurement and instalment of equipment and material, works as well as the method of calculation of all costs. In addition, the operator is obliged to adopt adequate standards and to use market prices, i.e. prices of work and services when setting connection costs in the connection decision. The DSO is obliged to comply with the principles of transparency and non-discrimination and, upon an applicant's request, to give the applicant an insight into acts which serve as the basis for the establishment of connection costs and the manner of setting these costs. In the Methodology, connections are grouped into kinds and types and therefore, depending on the distance between a facility and the system, on technical conditions and methods of connection, we recognize standard and individual connections.

With standard connections, depending on the number of metering devices, we recognize individual and group standard connections. A DSO's legal act on the level of connection costs for standard connections also includes the level of:

- cost of construction of standard connection for each subkind and subtype of standard connections depending on the location where metering switchboards are installed;
- unit variable cost and
- cost of a part of the system which is set by the operator in line with the Methodology.

If, based on submitted data as well as on the data which may be demanded in line with the Law, the Agency concludes that the DSO has not adopted legal acts on the level of connection costs in line with the Methodology, the Agency will ask the DSO to submit a new legal act, fully harmonised with the Methodology within 30 days since the day the Agency's written request is submitted.

In 2024, the DSO applied the Act on the Level of Connection Costs to the Electricity Distribution System, which was adopted on August 31, 2023, and has been in effect since September 1, 2023.

The DSO is obliged to provide the data on the number of new metering points connected to the distribution system, collected revenue and money flow based on issued decisions on connection to the distribution system for each connection type as

well as on the connection costs which arose. The DSO provides these data regularly to the Agency in line with the info-tables established by the Agency.

In 2024, the DSO submitted data on the number of newly connected metering points within the distribution system, collected revenues and money flow arising from the issued decisions on the approval of connection to the distribution system for each connection type as well as on arising connection costs.

3.4.2.2 Use-of-system charges

Distribution companies started applying regulated distribution use-of-system charges on March 1, 2010 for the first time following a favourable opinion of the Agency on price proposals given by 5 distribution companies and following the approval of the Government of the Republic of Serbia. Afterwards, distribution use-of-system charges were changed on April 1, 2011, August 1, 2013 and these were valid for customers entitled to guaranteed supply until February 2016. In the meantime, the Government of the Republic of Serbia adopted a Decree on Method and Conditions of Setting Balanced Distribution Use-of-System Charges. This Decree entered into force on January 1, 2014 and it was applicable for customers who were not entitled to regulated supply. Balancing the distribution use-of-system charges, customers belonging to the same customer category and group were allowed to purchase electricity from suppliers in the open market under the same conditions on the whole territory of the Republic of Serbia.

There was a change of status of July 1, 2015 and one DSO was established for the whole territory of the Republic of Serbia. Therefore, on March 1, 2016, with the Agency's approval, the DSO adopted a uniform distribution use-of-system charge for all customers with facilities connected to the distribution system. The charge was applied until November 8, 2016 when a new distribution use-of-system charge entered into force. During the whole 2020, the price established on November 8, 2019 was applicable. During 2022, distribution use-of-system charges of November 8, 2019, February 1, 2021 and October 1, 2021 were valid. During 2024, the access price to the distribution system that has been in effect since October 1, 2021, continued to apply, as it did in 2022 and 2023. The annual movement of the average approved access prices to the distribution system (excluding VAT and fees) is shown in the following table:

Table 3-22: Trend of annual level of average approved distribution use-of-system charges – total Serbia (without APKM)

Consumption category	Annual level of approved charge				
	As of 01/08/2013	As of 01/03/2016	As of 08/11/2019	As of 01/02/2021	As of 01/10/2021
Medium voltage - total	1.56	1.32	1.26	1.33	1.47
Low voltage (0.4 kV I grade)	3.53	3.58	3.40	3.64	4.05
Mass consumption - total	3.27	3.46	3.61	3.86	4.28
- 0.4 kV II grade	3.75	3.87	3.93	4.20	4.68
- households	3.20	3.40	3.56	3.80	4.22
Public lighting	3.06	2.82	2.81	3.22	3.61
AVERAGE	2.93	2.93	2.92	3.11	3.43

Tariffs which were valid in 2024 are indicated in Table 3-23:

Table 3-23: Distribution tariffs valid in 2024

System users	Calculation element	Measurement unit	Tariff as of 1/10/2021
Consumption on medium voltage	Approved capacity	kW	108,516
	Excessive capacity	kW	434,065
	Higher daily tariff of active energy	kWh	1,075
	Low daily tariff of active energy	kWh	0,358
	Reactive energy ($\cos\phi \geq 0,95$)	kvarh	0,404
	Excessive reactive energy ($\cos\phi < 0,95$)	kvarh	0,807
Consumption on low voltage	Approved capacity	kW	173,626
	Excessive capacity	kW	694,504
	Higher daily tariff of active energy	kWh	0,824
	Low daily tariff of active energy	kWh	0,824
	Reactive energy ($\cos\phi \geq 0,95$)	kvarh	1,130
	Excessive reactive energy ($\cos\phi < 0,95$)	kvarh	2,261
Mass consumption	Approved capacity	kW	54,258
	Active energy:		

	Single-rate metering	Single-rate metering	kWh	3,394
	Double-rate metering	Higher daily tariff of active energy	kWh	3,879
		Lower daily tariff for active energy	kWh	0,97
	Managed consumption	Higher daily tariff of active energy	kWh	3,297
		Lower daily tariff for active energy	kWh	0,824
Public lighting	Active energy – public lighting		kWh	3,607

In 2024, the Agency Council adopted a decision amending the Methodology for Determining the Price of Access to the Electricity Transmission System, whereby an amendment was made to Chapter XIII, Application of the Methodology, paragraph 6, extending the validity of the provisions of this paragraph until December 31, 2025.

The average distribution use-of-system charge (VAT and duties free) in 2024 for all customers amounted to 3.48 RSD/kWh (Table 3-24).

Table 3-24: Applied average distribution use-of-system charges

Consumption category	RSD/kWh									
	2015.	2016.	2017.	2018.	2019.	2020.	2021.	2022.	2023.	2024.
35 kV	1,28	1,25	1,24	1,25	1,24	1,20	1,27	1,39	1,38	1,29
10 kV	1,50	1,46	1,38	1,39	1,40	1,41	1,45	1,57	1,59	1,59
Low voltage (0.4 kV I grade)	4,12	3,95	3,86	3,81	3,79	3,84	3,90	4,20	4,27	4,26
- 0.4 kV II grade	3,71	3,81	3,82	3,82	3,84	4,02	4,28	4,66	4,69	4,68
- households	3,27	3,38	3,42	3,45	3,48	3,55	3,86	4,23	4,28	4,29
Public lighting	3,08	2,86	2,82	2,82	2,81	2,81	3,29	3,61	3,61	3,61
AVERAGE	2,96	2,98	2,96	2,95	2,95	3,00	3,20	3,48	3,50	3,48

Figure 3-6 indicates realized average electricity distribution use-of-system charges (VAT and duties free) for Serbia (without APKM) per customer category in 2024.

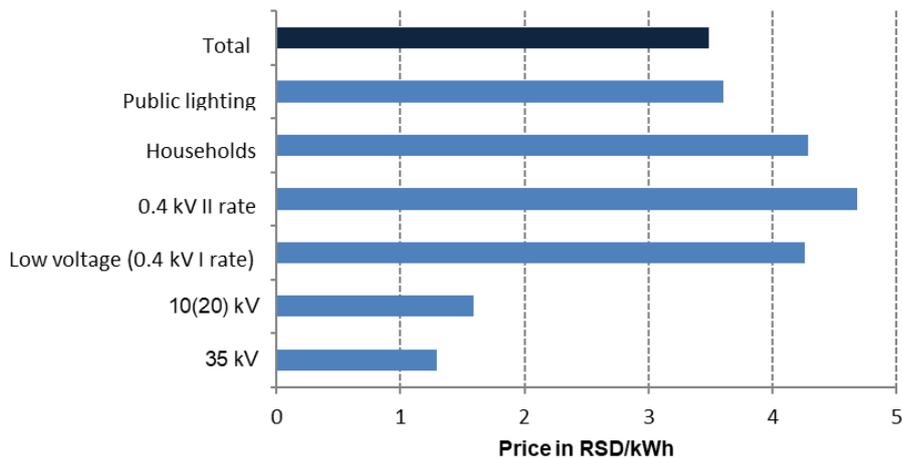


Figure 3-6: Average applied annual distribution use-of-system charge in 2024

The distribution system use-of-system charge (excluding VAT and taxes), according to EUROSTAT data for European countries in 2024, are presented in Figure 3-7.

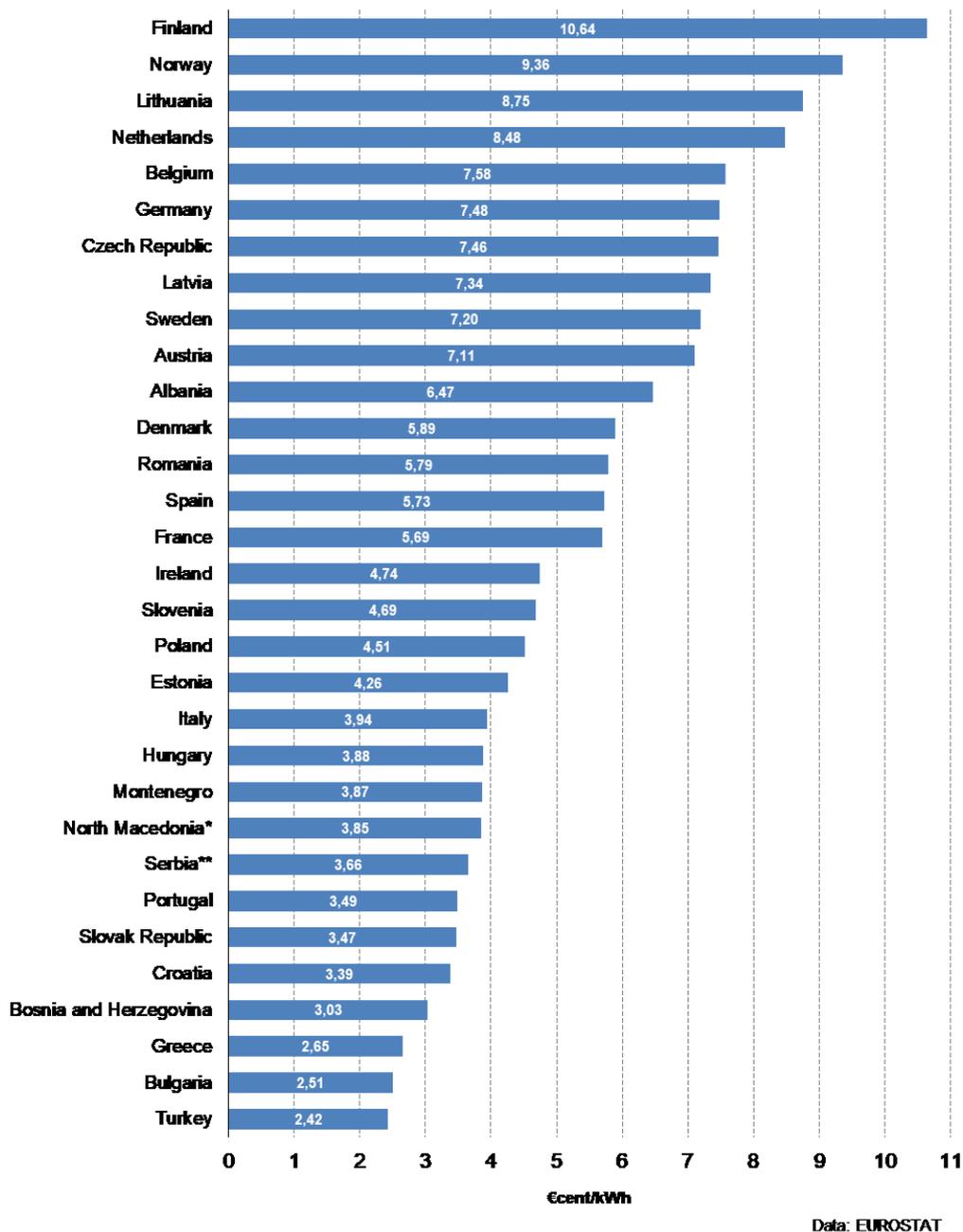


Figure 3-7: Electricity distribution use-of-system charge in European countries for households in 2024

Legend:

*price for 2023

**EDS – realised price

Valid distribution use-of-system charge is available on the Agency website (www.aers.rs).

3.4.2.3 Price of Non-Standard Services

The Law prescribes that in addition to providing services to customers and system users which are charged via use-of-system charge or via connection costs, upon a system user's request, i.e. other person's request, the distribution system operator also provides services which are not included in the above stated prices. In addition, the operator provides services when necessary in order to remove the consequences arising from system user's actions i.e. other person's actions which are contrary to regulations. Since these services are individual and occurring from occasionally upon a system user's request, i.e. other person's request, they are called non-standard services. In order to compensate the costs arising from the provision

of these services, DSO established a price list for non-standard services which was approved by the Agency Council in October 2023 and they were valid for the whole 2024. The list includes three segments: 1) technical services to DSO system users, 2) services related to setting design and connection conditions and 3) services related to issuance of an opinion on conditions for power plants connection.

3.4.3 Distributed electricity quantities

The electricity delivered to customers through the distribution system was mainly withdrawn from the electricity transmission system. A smaller portion of energy is provided from the power plants connected to the distribution system. The energy withdrawn from the power plants connected to the distribution system in 2024 amounted to by 7.6% less than in 2023. Because of production in power plants connected to the distribution system in areas with low electricity consumption, around 43 GWh of electricity were delivered from the distribution system into the transmission system which is by even 1 GWh less than in 2023. In 2024, the connection of prosumers to the distribution system continued, a process that began in 2021. Consequently, a segment of electricity was also taken from these connections, equaling approximately 32 GWh in 2024.

Table 3-25: Electricity quantities distributed in 2015 – 2024

	2015.	2016.	2017.	2018.	2019.	2020.	2021.	2022.	2023.	2024.	GWh, %
Distributed - Total electricity withdrawn by the distribution system	30.131	30.162	30.503	30.040	30.002	30.027	31.004	30.133	29.507	30.160	
29.778	29.712	29.964	29.397	29.389	29.333	30.105	29.259	28.422	29.136	29,259	
32	2	1	1	1	1	1	1	1	2	1.0	
321	448	538	642	612	693	898	872	1.071	990	872	
							1	13	32	1.0	
Total delivered electricity quantities from the distribution system	25.894	26.246	26.549	26.376	26.476	26.440	27.368	26.750	26.305	27.033	
25.863	26.147	26.425	26.240	26.358	26.374	27.298	26.670	26.206	26.926	26,670	
32,3	98,6	121	128	113	54	60	53	50	43	53	
		3	8	5	12	10	21	44	43	21	
							6	5	21	6	
Losses in the distribution system	4.236	3.917	3.953	3.664	3.527	3.587	3.636	3.383	3.202	3.127	
Losses in the distribution system (as % of total withdrawn energy)	14,06	12,98	12,96	12,20	11,75	11,95	11,73	11,23	10,85	10,37	

Electricity losses within the distribution system were lower in 2024 in percentages in comparison to 2023 but they still exceed technically justified ones. A higher level of losses in comparison to the EU countries can only partially be justified by inevitable technical losses due to a high share of low voltage consumption in comparison to most EU countries. However, high losses were also due to a great number of unauthorised connections to the distribution network and unauthorised withdrawal (theft) of electricity. In addition, losses are increased due to long-term low investments into the distribution network. Another problem includes a big delay in terms of replacement of meters and transfer of metering points and connection lines. This is proved by the data on minimum activities on control and transfer of the metering devices, connection lines and equipment which is a prerequisite of bringing these into technically valid state and of elimination of electricity theft. These activities are expected to be more intensive in the future. When giving approval of distribution use-of-system charges and when assessing justified level of losses within the network, all relevant data from previous years will be taken into account as well as the level of losses and planned activities for loss reduction.

3.5 Closed distribution systems

At the end of 2024, there were six energy entities holding a licence for electricity distribution and closed distribution system operation – the closed distribution system operator:

1. closed distribution system operator "BELGRADE AIRPORT" d.o.o. Beograd (BELGRADE AIRPORT),
2. closed distribution system operator – Company for Exploration, Production, Processing and Trade in Oil and Oil Derivatives and Exploration and Production of Natural Gas *Naftna Industrija Srbije* (Petroleum Industry of Serbia), JSC, Novi Sad (NIS),
3. closed distribution system operator "Limited Liability Company for Energy and Fluids Production and Distribution and Service Provision "ENERGETIKA", Kragujevac, (ENERGETIKA),
4. closed distribution system operator "ELIXIR PRAHOVO" INDUSTRIJA HEMIJSKIH PROIZVODA LLC PRAHOVO (ELIXIR PRAHOVO),

5. closed distribution system operator Društvo sa ograničenom odgovornošću za građevinarstvo, održavanje i usluge "MIND REAL ESTATE" Lužnice - Kragujevac (MIND REAL ESTATE) and
6. closed distribution system operator "EI – Enterprise for the Production and Distribution of Energy and Provision of Services ELMAG d.o.o., Niš (ELMAG)."

In 2024, out of six licensed entities, five operators were responsible for the distribution of electricity and the management of closed distribution systems.

1. Closed distribution system which is operated by the closed distribution system operator "BELGRADE AIRPORT" Beograd is connected to the distribution system of ODS Elektrodistribucija Srbije to 35kV voltage level. It includes:
 - 1 transformer station of 35/10 kV/kV with two transformers with total installed capacity of 16 MVA,
 - 6 transformer stations of 10/0.4 kV/kV with 10 transformers with total installed capacity of 852 MVA and
 - 11 km of cables of 10 kV voltage level.

The closed distribution system BELGRADE AIRPORT commenced operation on July 1, 2024. In 2024, a total of 15.5 GWh of electricity was taken over from the distribution system into the closed distribution system BELGRADE AIRPORT, of which 7.8 GWh was delivered to customers connected to the closed distribution system, while 10.8 GWh was consumed for own needs. Electricity generation within the closed distribution system amounted to 3.5 GWh, while losses in the closed distribution system amounted to 0.4 GWh of electricity.

2. Closed distribution system which is operated by the closed distribution system operator NIS is connected to the transmission system to 220 kV voltage level. This closed distribution system includes:
 - 1 transformer station of 220/6 kV/kV with two transformers with total installed capacity of 63 MVA,
 - 1 transformer station 35/6 kV/kV without a transformer since it keeps only 6 kV voltage level,
 - 0.15 km of overhead lines of 220 kV voltage level and
 - 8.4 km of cables of 6 kV voltage level.

Closed distribution system NIS started operating on August 1, 2021.

In 2024, 254.6 GWh of electricity were withdrawn from the transmission system into the closed distribution system NIS out of which 0.1 GWh were delivered to customers connected to closed distribution system while 254.4 GWh were consumed to cover the demand of the system. Losses within the closed distribution system amounted to 0.1 GWh of electricity.

3. Closed distribution system which is operated by the closed distribution system operator "ENERGETIKA" is connected to the transmission system to 110 kV voltage level. It includes:
 - 1 transformer station of 110/35 kV/kV with two transformers with total installed capacity of 126 MVA,
 - 1 transformer station 35/6 kV/kV with installed capacity of 36 MVA,
 - 18 transformer stations of 6/0.4 kV/kV with total installed capacity of 55.7 MVA,
 - 2.4 km of overhead lines of 35 kV voltage level,
 - 19 km of cables of 35 kV of voltage level,
 - 42 km of overhead lines of 6 kV voltage level and
 - 30 km of power cables of 6 kV voltage level.

"ENERGETIKA" closed distribution system started operating on March 1, 2021.

In 2024, a total of 34.7 GWh of electricity was taken over from the transmission system into the closed distribution system ENERGETIKA, of which 32.0 GWh was delivered to customers connected to the closed distribution system, and 0.4 GWh was delivered to the distribution system. Electricity generation within the closed distribution system amounted to 0.03 GWh, while losses in the closed distribution system amounted to 2.4 GWh of electricity.

4. Closed distribution system operated by the closed distribution system operator ELIXIR PRAHOVO is connected to the transmission system of Serbia on the 110 kV voltage level and it includes:
 - 1 transformer station 110/10 kV/kV with two transformers with total installed capacity of 63 MVA,
 - 1 transformer station 35/10 kV/kV without a transformer since only 10 kV voltage level remained there,
 - 2 transformer stations 10/0.4 kV/kV with 5 transformers in total with total installed capacity of 8.3 MVA and
 - 2,995 km of cables with voltage level of 10 kV.

The closed distribution system ELIXIR PRAHOVO started operating on January 1, 2023.

In 2024, a total of 70 GWh of electricity was received from the transmission system into the closed distribution system ELIXIR PRAHOVO. Of this, 5.9 GWh was delivered to customers connected to the closed distribution system, while 62.5 GWh was used for internal needs. Losses in the closed distribution system amounted to 1.6 GWh of electricity.

5. Closed distribution system operated by the closed distribution system operator MIND REAL ESTATE is connected to the distribution system of DSO *Elektrodistribucija Srbije* to the voltage level of 10 kV. This closed distribution system includes:
 - 5 transformer stations 10/0.4 kV/kV with 10 transformers in total with total installed capacity of 10.07 MVA,
 - 7.8 km of cables of 10 kV voltage level and
 - 10 km of cables of 0.4 kV voltage level.

The closed distribution system MIND REAL ESTATE started operating on April 1, 2022.

In 2024, 5.8 GWh of electricity was withdrawn from the distribution system into the closed distribution system MIND REAL ESTATE out of which 4.8 GWh were delivered to customers connected to the closed distribution system while 0.9 GWh were consumed for self-consumption. Losses within the closed distribution system amounted to 0.1 GWh of electricity.

6. The closed distribution system operated by the distribution system operator ELMAG is connected to the distribution system DSO *Elektrodistribucija Srbije* to the 10 kV voltage level. This closed distribution system includes:
 - 6 transformer stations of 10/0.4 kV/kV with total installed capacity of 8.29 MVA,
 - 1 switchgear of 10 kV voltage level,
 - switchgears of 0.4 kV voltage level,
 - 9 km of cables of 10 kV voltage level and
 - 15 km of cables of 0.4 kV voltage level.

The closed distribution system ELMAG started operating on September 1, 2022.

In 2022, 2.2 GWh of electricity was withdrawn from the distribution system into the closed distribution system ELMAG.

In 2024, the closed distribution system ELMAG did not perform the distribution of electricity or manage the closed distribution system.

In line with Chapter XII of the Methodology for Setting Electricity Distribution Use-of-System Charge, closed distribution use-of-system charge is set as medium value between established and applied tariffs for tariff elements “active power”, “active energy” and tariff element “reactive energy” of all energy entities performing electricity distribution and distribution system operation for the relevant category, i.e. system user group.

The closed electricity distribution use-of-system charge is set in a manner referred to in paragraph 1 of the chapter XII of the Methodology regardless of the fact whether that system is connected to the electricity transmission system or to the electricity distribution system.

The average achieved closed distribution use-of-system charge in 2024 for all customers (excluding VAT and fees) was 1.42 RSD/kWh. This is 60% lower than the average achieved distribution use-of-system charge, as over 90% of the electricity was delivered at medium voltage.

Closed distribution system operator indicates closed distribution use-of-system charges per each tariff for tariff elements and according to categories and system users groups and charges the closed distribution use-of-system charges by applying provisions of the chapters V, VI, IX and X of the given methodology.

3.6 Electricity market

Electricity market in Serbia includes:

- bilateral electricity market;
- balanced electricity market and
- organised electricity market.

The scheme of electricity market at the end of 2024 is given in figure 3-8.

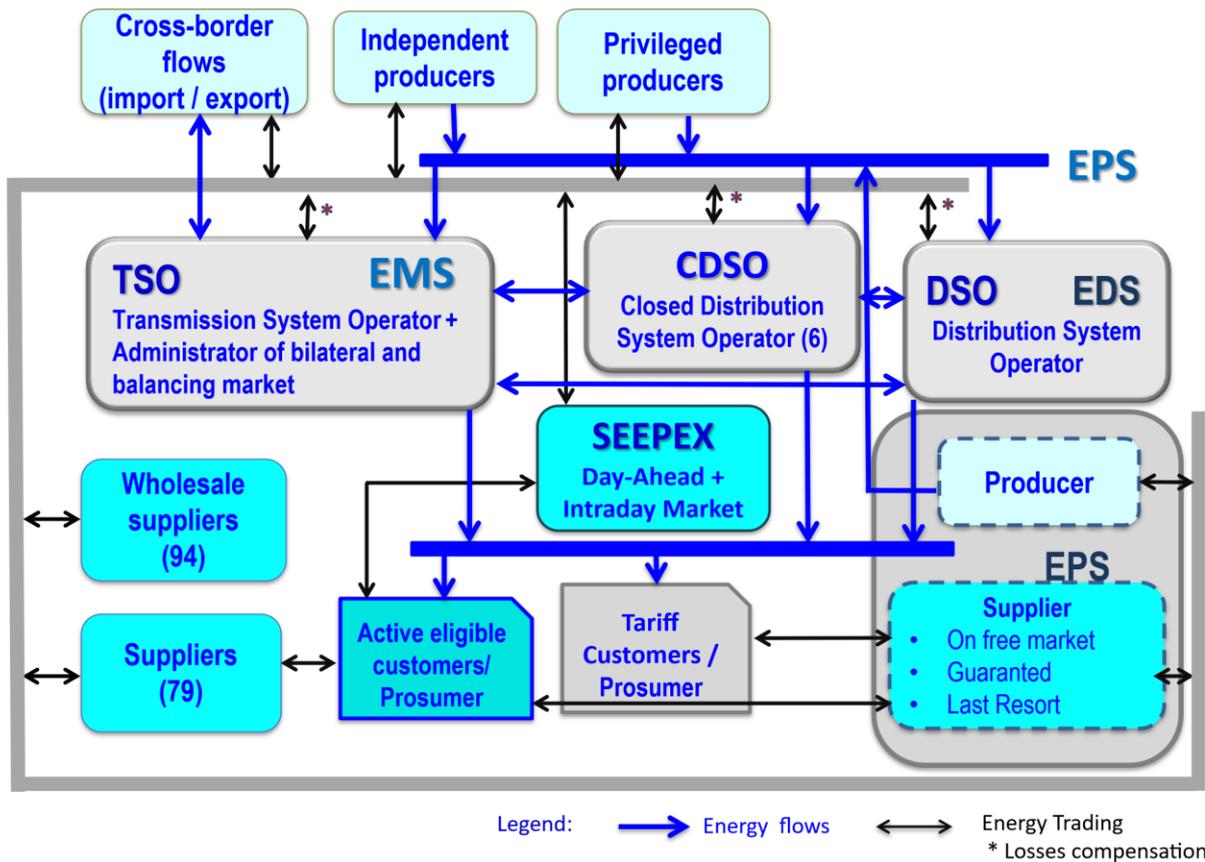


Figure 3-8: Electricity market scheme in 2024

Electricity market players are the following:

- electricity producer;
- electricity supplier;
- wholesale electricity supplier;
- final customer;
- aggregator⁴;
- prosumer;
- transmission system operator in case of provision of system services, system balancing, provision of the safe system operations and electricity purchase for loss recovery within the transmission system;
- distribution system operator in case of electricity purchase for loss recovery within the distribution system;
- electricity closed distribution system operator;
- market operator;
- nominated market operator and
- electricity storage.

In addition to the aforementioned participants, other legal entities may also be participants in the organized electricity market in accordance with the rules governing the operation of the organized market.

3.6.1 Bilateral electricity market

Both electricity purchase and sales are organised on the bilateral market directly between market players, while on the wholesale bilateral market, the players traded in electricity at open market prices, while on the retail bilateral market, supply was organised at open market prices and regulated prices due to the fact that since 2014, all customers except for households and small customers have been obliged to purchase electricity in the open market. Since 2015, households and small customers have an option to select a supplier in the open market and they could always switch back to the guaranteed supplier.

⁴ Aggregator was recognised in the Energy Law as a market player but their role should be defined in bylaws. In 2022, there were no aggregators in the Republic of Serbia.

3.6.1.1 Wholesale market

In 2024, the wholesale electricity market was based on trading between suppliers. Supplier activity on the free market remained most pronounced in the area of cross-border exchange, primarily for the purpose of transit through Serbia, which continues to be dominant due to the favorable geographical position of the Serbian power system, bordering eight countries, as well as for export and import purposes. Compared to 2023, bilateral trading between suppliers increased by approximately 24%, from 4,205 GWh to 5,213 GWh. Electricity imports in 2024 amounted to 7,183 GWh and were about 9% higher than exports, which totaled 6,620 GWh.

The volumes of electricity purchased and sold on the organized market (SEEPEX), within the day-ahead and intraday markets, increased in both segments during 2024. Total purchases as well as sales amounted to 5,433 GWh on the day-ahead market and 115 GWh on the intraday market, totaling 5,548 GWh. Compared to 2023, when purchases amounted to 4,682 GWh, this represents an increase of approximately 18%. The total volume of electricity traded in both directions (purchases and sales) on the organized market amounted to 11,096 GWh.

There were 62 active market participants, which is 8 more than in 2023, of which 11 were engaged in supplying final customers on the free market, representing an increase of 8 compared to the previous year.

In accordance with the Energy Law, foreign legal entities may also obtain a license to perform wholesale electricity supply activities. In 2024, a total of 94 wholesale electricity suppliers and 79 electricity suppliers were licensed. In the market of the Republic of Serbia, 62 suppliers were active, which is 8 more than in the previous year. The total trading volume amounted to 5,213 GWh.

Figure 3-9 indicates electricity quantities for each of suppliers' activities in 2023 and 2024⁵ but the data on the sale in the open market do not include electricity sold to cover one's own demand in the vertically-integrated supplier company.

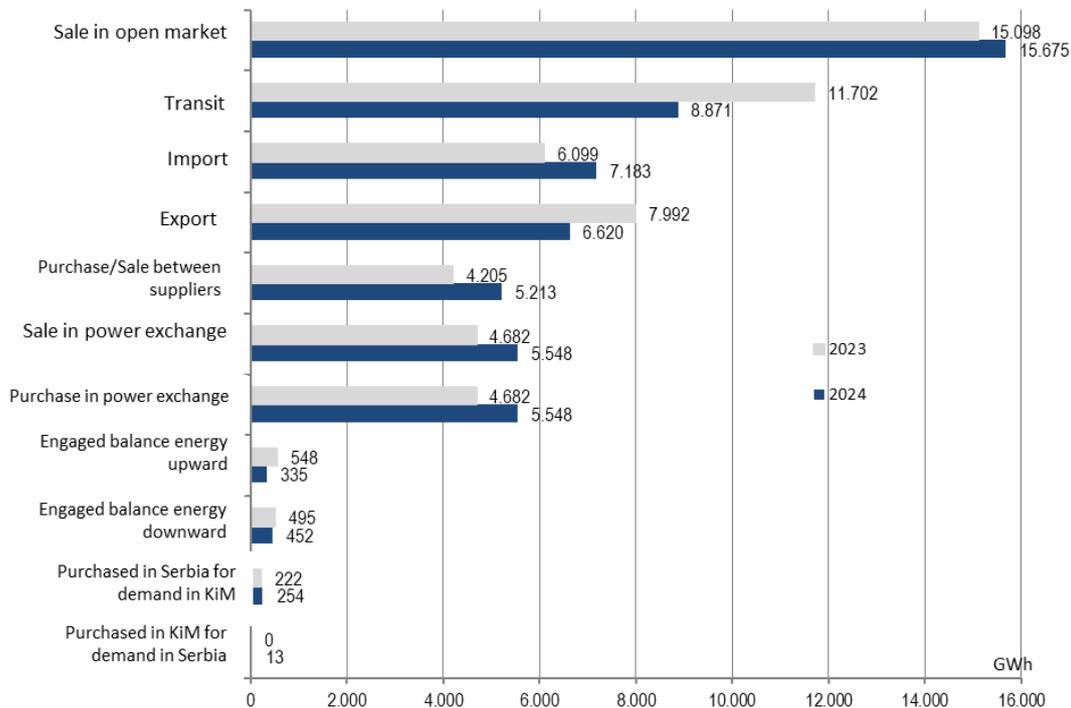


Figure 3-9: Electricity quantities for each supplier activity in 2023 and 2024

3.6.1.1.1 Suppliers' activities

The five most significant suppliers that sold electricity to other suppliers on the bilateral electricity market were: 'MOTOR OIL RENEWABLE ENERGY SINGLE MEMBER S.A.', Athens, Greece; 'GEN-I', trading and sales of electricity,

⁵ All the data given in tables were submitted until February 15, 2022 and are entitled to modification in line with the Electricity Market Rules.

d.o.o., Krško, Slovenia; 'NOVA COMMODITIES' limited liability company, Belgrade; 'HSE BALKAN ENERGY' d.o.o., Engineering and Trading Company; and 'AYEN ENERGY TRADING' d.o.o., Belgrade–Stari Grad.

The five most significant suppliers that purchased electricity from other suppliers on the bilateral electricity market were: Oil and Gas Exploration, Production, Processing, Distribution and Trading Company 'Naftna industrija Srbije' a.d., Novi Sad; 'HSE BALKAN ENERGY' d.o.o., Engineering and Trading Company; Commercial company 'EPCG' d.o.o., Belgrade; 'EFT TRADE' d.o.o., Belgrade; and 'MVM Partner Energiakereskedelmi Zártkörűen Működő Részvénytársaság', Budapest, Hungary.

The five most significant suppliers importing electricity were: Public Enterprise 'Elektroprivreda Srbije' a.d., Belgrade; 'EFT TRADE' d.o.o., Belgrade; 'ENERGI DANMARK A/S', Aarhus, Denmark; Commercial company 'TERNA ENERGY TRADING' d.o.o., New Belgrade; and 'HSE BALKAN ENERGY' d.o.o., Engineering and Trading Company.

The five most significant suppliers exporting electricity were: Public Enterprise 'Elektroprivreda Srbije' a.d., Belgrade; 'EFT TRADE' d.o.o., Belgrade; 'ENERGI DANMARK A/S', Aarhus, Denmark; Commercial company 'TERNA ENERGY TRADING' d.o.o., New Belgrade; and 'HSE BALKAN ENERGY' d.o.o., Engineering and Trading Company.

Based on data submitted by electricity suppliers (commercial data), electricity transit during 2024 decreased by approximately 24% compared to 2023 (from 11,702 GWh to 8,871 GWh). At the same time, imports increased by approximately 18% (from 6,099 GWh to 7,183 GWh), while exports rose by approximately 21% (from 6,620 GWh to 7,992 GWh). Both exports and imports were present throughout the entire year. Favorable hydrological conditions and relatively favorable weather conditions, particularly during the winter period, enabled increased electricity exports even in the winter months.

The scale of import, export and transit realised by suppliers for each month of 2024 is indicated in Figure 3-10.

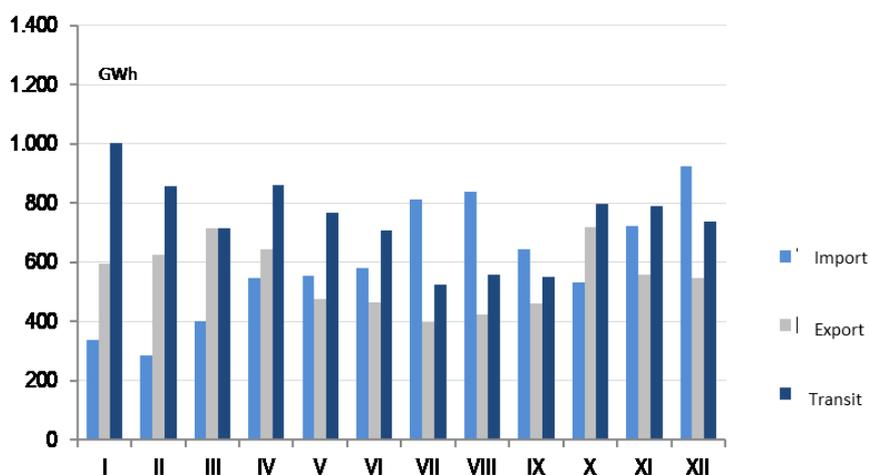


Figure 3-10: Import, export and transit of suppliers in 2024

Figure 3-11 indicates the volume of trade among suppliers, which was most intensive in the second half of the year, particularly in July, August, and December, when it amounted to around 700 GWh per month. On the other hand, trading with EPS a.d. (purchases and sales) was pronounced during the summer months, indicating increased seasonal activity.

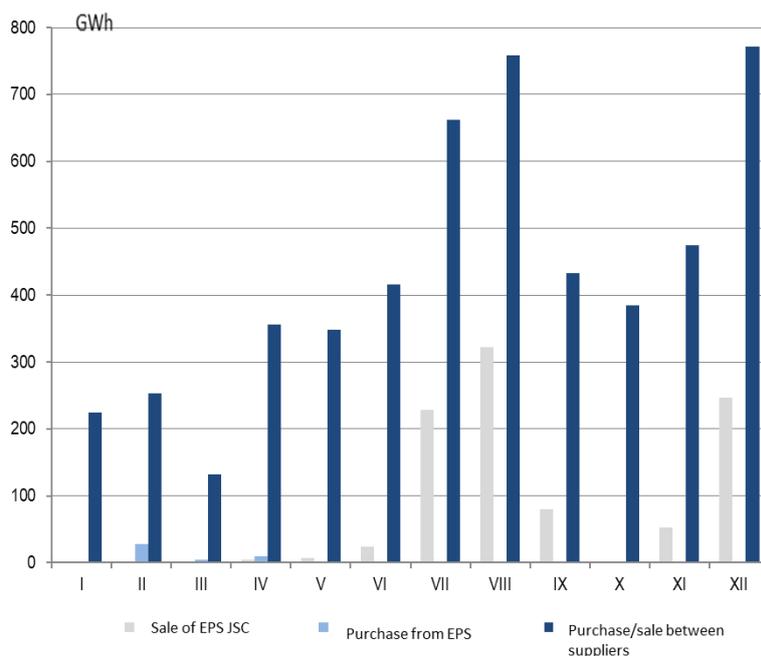


Figure 3-11: Purchase/sales between suppliers, i.e. between suppliers and EPS JSC in 2024

Relevant indicators of development level and electricity market concentration in Serbia (without APKM) in 2024 are given in Table 3-26. The following data are given for each of indicated supplier's activities:

- total electricity quantity;
- electricity share traded by three suppliers with the biggest scale of trade activities in total electricity quantity per each activity;
- value of Herfindahl-Hirschman Index (HHI), indicating realised level of market concentration⁶ and
- evaluation of market concentration level per individual activities⁷.

Table 3-26: Electricity market concentration level in Serbia in 2024

Supplier's activity in 2024	Electricity quantity (GWh)	Share of three suppliers with the greatest trading scale [%]		Herfindahl-Hirschman Index - HHI	Market concentration level
	(GWh)	(%)	(GWh)		
Trade in organised day-ahead market (exchange)					
Sale	5.433	27	1.441	538	Low
Purchase	5.433	38	2.081	689	Low
Trade between suppliers in bilateral market					
Sale	5.213	52	1.436	1.243	High
Purchase	5.213	45	2.063	1.140	High

In 2024, continued growth was recorded in trading on the organized electricity market (SEEPEX – day-ahead). The trading volume in terms of purchases and sales amounted to 5,433 GWh, representing an increase of approximately 16% compared to 2023, when the volume was 4,682 GWh. This increase indicates further strengthening of the liquidity and stability of the organized market, following a period of intensive fluctuations in the earlier years of the exchange's operation.

⁶ Herfindahl-Hirschman Index is defined as the sum of squares of share of a single company in the market. The lower the value, the more developed is market competition.

⁷ Market concentration limits are the following:

HHI < 1000 – not concentrated

1001 < HHI < 2000 - moderately concentrated

HHI >2001 - highly concentrated market

On the other hand, trading on the bilateral market, i.e., trading between suppliers, reached a volume of 5,213 GWh in 2024, which is approximately 25% higher than in 2023, when it amounted to 4,165 GWh. This points to strong growth in activity in this segment as well, while maintaining a high level of concentration among market participants.

3.6.1.2 Retail market

3.6.1.2.1 Electricity quantities delivered to final customers

In 2024, a total of 30,832 GWh of electricity was sold and delivered to final customers (excluding power plant consumption for generation purposes), which is 811 GWh more than the amount of electricity delivered in 2023. Table 3-27 presents electricity consumption in the Republic of Serbia (excluding APKM) in the period 2015–2024, including electricity taken by producers from the transmission system for their own needs.

Table 3-27: Electricity consumption structure in the period 2015-2024

Consumption category	GWh										
	2015.	2016.	2017.	2018.	2019.	2020.	2021.	2022.	2023.	2024.	2024/2023
Households	14.062	13.931	13.815	13.415	13.340	13.718	13.877	13.379	13.008	13.225	101,7
Other customers connected to low	5.546	5.665	5.746	5.756	5.707	5.376	5.740	5.696	5.519	5.654	102,4
Customers connected to low voltage in total	19.608	19.596	19.561	19.171	19.047	19.094	19.617	19.075	18.527	18.879	101,9
Customers connected to medium voltage (10,	6.254	6.550	6.865	7.069	7.311	7.280	7.807	7.905	8.039	8.443	105,0
Customers connected to high voltage (110 kV)	2.669	2.479	2.695	2.798	2.649	2.665	3.034	3.262	3.455	3.510	101,6
Electricity delivered to final customers	28.531	28.625	29.121	29.038	29.007	29.039	30.458	30.242	30.021	30.832	102,7
TPP and HPP consumption to cover	401	416	391	394	427	467	429	404	362	392	108,3
Total consumption	28,501	28,065	28,947	29,210	29,515	29,465	29,474	30,862	30,604	30,413	99,4

Compared to 2023, in 2024 the consumption of final customers (excluding power plant consumption for generation purposes) increased by 2.7%. Household consumption rose by 1.7% (217 GWh), while consumption of other low-voltage customers increased by 2.4% (135 GWh). Consumption by high-voltage customers also increased by 1.6% (55 GWh), and by medium-voltage customers by 5.0% (404 GWh).

Temperatures during the winter months were lower compared to 2023, which affected the increase in consumption during the winter period, when electricity is used for household heating. Producers took 5.4% less electricity for their own needs (power plant consumption for generation purposes) than in the previous year.

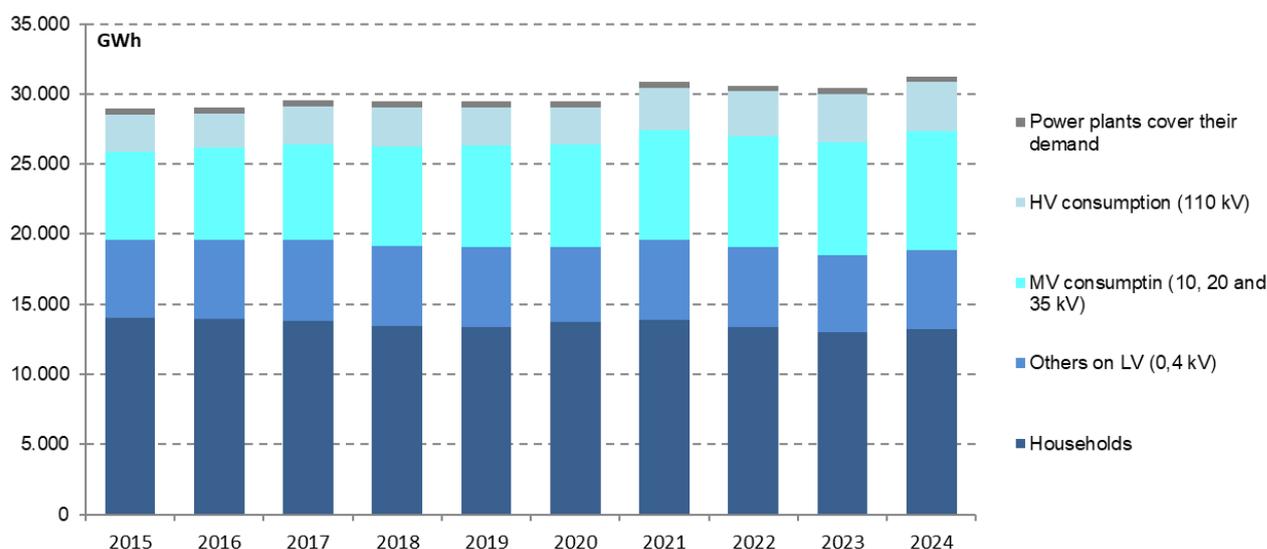


Figure 3-12: Electricity consumption structure in Serbia in the period 2015-2024 (without APKM)

The total number of delivery points for customers' delivery in the Republic of Serbia without APKM (without metering points of facilities within Železnice Srbije/Serbian Railroad – there are 42 of them on the transmission system) at the end of 2024 amounted to 3,828,463. Compared to 2023, the number was increased by 0.9%.

Table 3-28: Number of metering points in 2023 and 2024

Consumption category	2023.	2024.	Индекс 2024/2023
Households	3.367.109	3.373.023	100,2%
Other customers connected to low voltage (0.4 kV)	419.718	449.352	107,1%
Customers connected to medium voltage (10, 20 and 35 kV)	5.862	6.036	103,0%
Customers connected to high voltage (110 kV)	52	52	100,0%
Total number of metering points	3.792.741	3.828.463	100,9%

3.6.1.2.2 Sale of electricity to final customers

The total electricity sale to final customers (without consumption of power plants for production purposes) amounted to 30,832 GWh in 2024. In comparison to 2023, it increased by 2.7% (811 GWh).

Since 2014, all customers except for households and small customers (that, in order to be awarded with a small customer status, in addition to the requirement related to the annual income and the number of employees, also have a limit of 30,000 kWh of consumption in the previous calendar year and a requirement imposing that all their facilities have to be connected to the network of less than 1 kV voltage) have been obliged to purchase electricity in the open market. With the amendments to the Energy Law adopted at the end of 2024, the conditions for obtaining the status of a small customer were changed, so that small customers are now defined as micro-enterprises, small enterprises, and entrepreneurs who meet the criteria for classification as micro or small enterprises in accordance with the law governing accounting. The market was fully open in 2015 when households and small customers, in addition to being entitled to guaranteed supply, have an option to select a supplier in the open market and they could always switch back to the guaranteed supply at regulated electricity prices.

Table 3-29: Electricity sale in retail market in 2020-2024

	2020	2021	2022	2023	GWh 2024.	Index 2024/2023
Regulated market	14,935	15,207	14,641	14,104	14.302	101,4%
Open market	14,104	15,251	15,601	15,917	16.530	103,9%
Supply at open prices	14,032	15,041	15,487	15,873	16.480	103,8%
Supply of the last resort	72	210	114	44	50	113,6%
Total sale	29,039	30,458	30,242	30,021	30.832	102,7%

On the regulated market, 1.4% (198 GWh) more electricity was sold while 3.9% (613 GWh) more electricity was sold in the open market in comparison to 2023 (out of the number, 6 GWh less electricity was sold via the supply of the last resort in comparison to 2023).

3.6.1.2.3 Electricity sale in the regulated market

On the regulated market, in 2024, only households and small customers purchased electricity, so this market accounted for 46.4% of the total electricity consumed by end customers. The quantities of electricity delivered on the regulated market by consumption categories for the period 2020-2024 are shown in Table 3-30. At the end of 2024, electricity was delivered to final customers at regulated prices to over 3.5 million metering points.

Pursuant to the 2004 Energy Law, regulated electricity prices for final customers were applied on January 1, 2008 for the first time, upon the positive opinion of the Energy Agency on the PE EPS proposal and the approval given by the Government of the Republic of Serbia. In 2024, the prices for guaranteed supply of final customers which were approved on November 1, 2023 were applicable.

The current regulated electricity prices for final customers are available on the Agency's website (www.aers.rs).

In 2024, reached average base price on SEEPEX power exchange which does not contain transmission and distribution costs amounted to 96.35 €/MWh on the annual level. Average weighted wholesale price for the procurement of electricity, which serves as the base for setting the price for guaranteed supply of final customers when the approval is given to the price on 01/11/2023, amounted to 5.305 RSD/kWh, i.e. 45.31 €/MWh, calculated with the average € exchange rate for 2024.

Table 3-30: Electricity quantities delivered in the regulated market

Consumption category	Electricity quantities delivered in the regulated market (GWh)				
	2020.	2021.	2022.	2023.	2024.
Low voltage (0.4 kV I grade)	231	261	232	181	175
- 0.4 kV II grade	990	1.078	1.042	960	936
- households	13.701	13.856	13.356	12.959	13.190
Public lighting	13	12	10	4	1
TOTAL guaranteed supply	14.935	15.207	14.640	14.104	14.302

Table 3-31 represents the trend of average realised annual prices for customers entitled to guaranteed (public) supply, i.e. to electricity being purchased at regulated prices. The level and trend of given average prices (VAT and duties free) for each year separately depend primarily from the dynamics and electricity quantities consumed by certain customers' categories and groups during the year and on the date of application of approved prices.

Table 3-31: Average annual regulated prices for final customers (VAT and duties free)

Consumption category	Realised average annual price				
	2020.	2021.	2022.	2023.	2024.
Low voltage (0.4 kV I grade)	12,21	11,57	11,72	15,22	15,74
- 0.4 kV II grade	9,39	9,67	9,97	12,64	12,92
- households	7,14	7,37	7,60	9,91	10,03
Public lighting	6,80	7,01	7,21	8,93	10,20
Total low voltage	7,36	7,60	7,83	10,17	10,29
TOTAL AVERAGE guaranteed supply (as universal service)	7,36	7,60	7,83	10,17	10,29

Based on consumption of this category achieved in 2024, 65% of energy spent in the green zone, 33% in the blue zone and 2% in the red zone.

Table 3-32: Prices for mass consumption customer category for each consumption zone

Customer category	Consumed active energy	Tariff* since 01/11/2023
Mass consumption	(MWh)	(RSD/kWh)
Guaranteed supplier's expenditure		160,6695
Calculation power		54,2580
Active energy		
HT green up to 350 kWh	4,899,523	9,1092
LT green up to 350 kWh	2,461,967	2,2773
ST green up to 350 kWh	1,936,394	7,9706
HT blue 351-1600 kWh	2,495,287	13,6638
LT blue 351-1600 kWh	1,544,072	3,4160
ST blue 351-1600 kWh	743,102	11,9558
HT red over 1600 kWh	175,560	27,3276
LT red over 1600 kWh	95,913	6,8319
ST red over 1600 kWh	43,989	23,9117
Total	14,395,806	

*Prices are given without VAT (20%) and duty (7.5%)

HT (High Tariff)

LT (Low Tariff)

ST (Single Tariff)

Figures 3-13 and 3-16 indicate the comparison of electricity prices for reference customers from two categories -households and industry in Serbia, EU countries and the region. The prices were applied in the second half of 2024 and calculated in line EUROSTAT methodology and given in their reports.

One should bear in mind in Figure 3-13 that the reference average annual electricity consumption in households which is used in EUROSTAT methodologies between 2,500 and 5,000 kWh and that it is in line with the European average and standards, while the average annual consumption in households in Serbia is higher. The prices indicated in Serbia for reference customers in the household category are among the lowest when considering VAT and taxes. Lower prices were achieved in Bosnia and Herzegovina and Turkey compared to Serbia. When it comes to the prices for reference customers in the household category including VAT and taxes, in addition to the mentioned countries, lower prices were also found in Montenegro and North Macedonia⁸. The indicated prices for reference customers in the household category with VAT and taxes are higher in Serbia, given that the VAT on electricity is 20% and the excise tax is 7.5%.

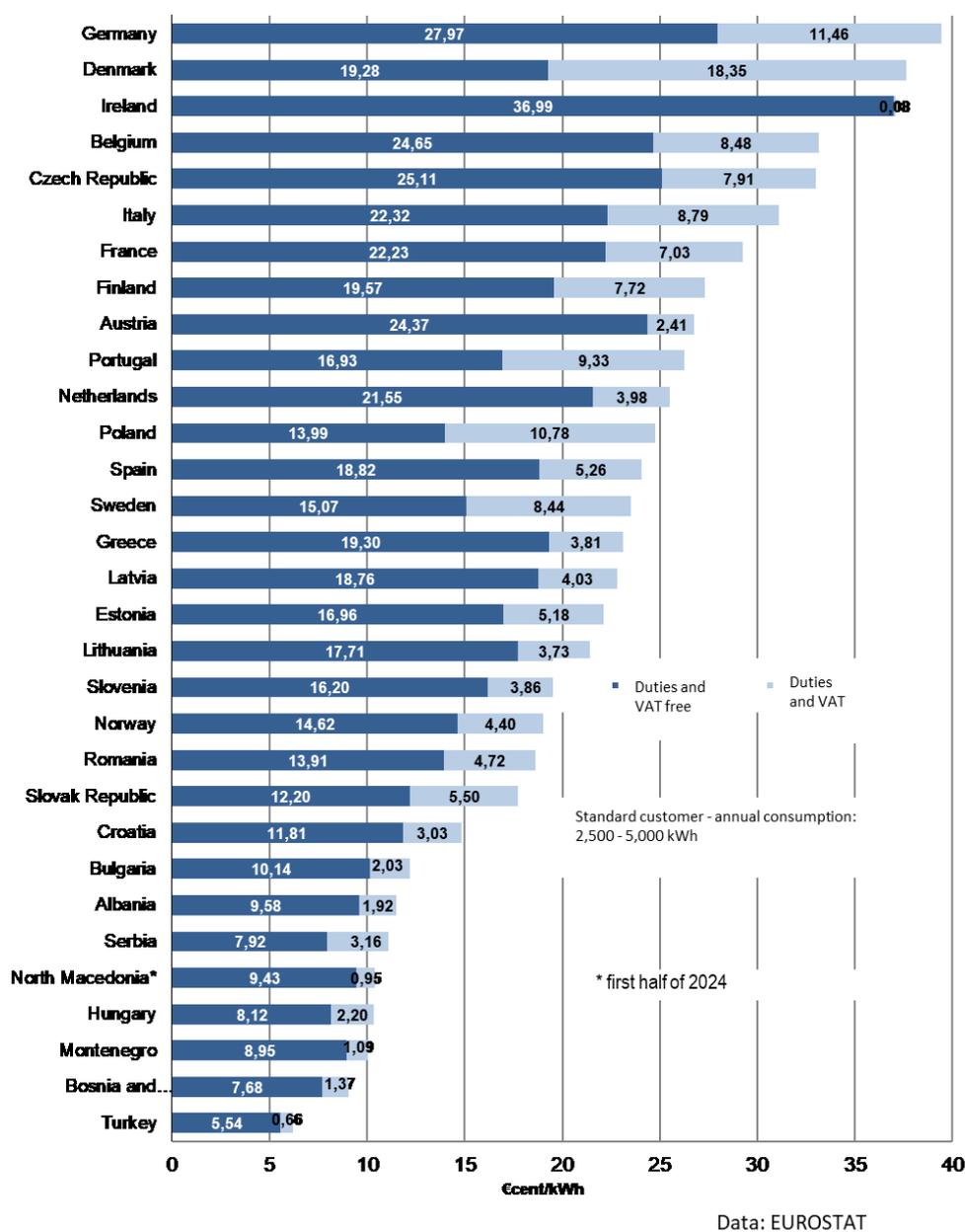


Figure 3-13: Electricity prices for households – second half of 2024

⁸ For North Macedonia, the data are given from the first half of 2024.

Figure 3-14 indicates a more detailed structure of retail electricity price for households in some of European capitals in December 2024. The data indicate that the energy price in Belgrade is low (the one in Budapest is the only one lower than in Belgrade).

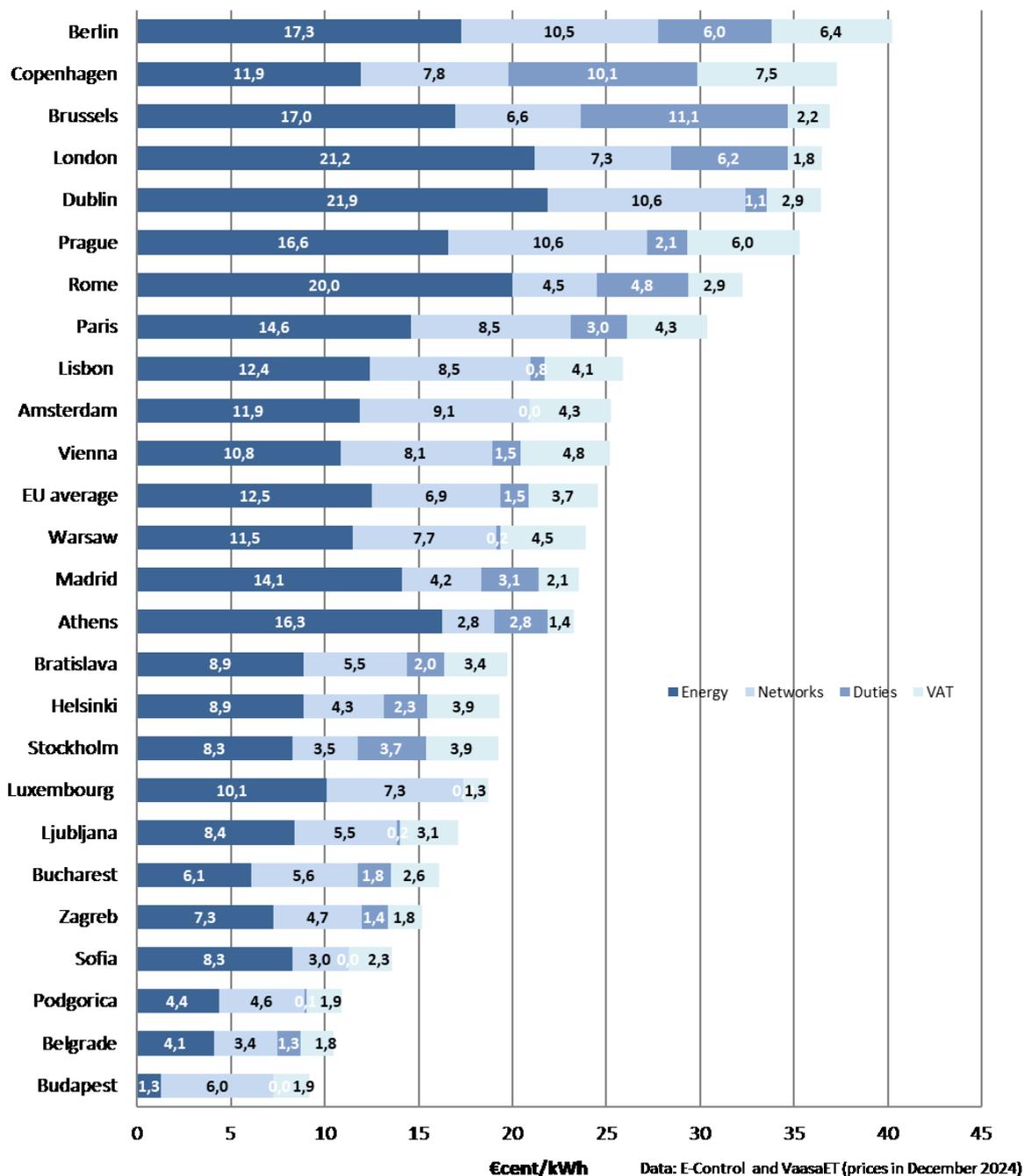
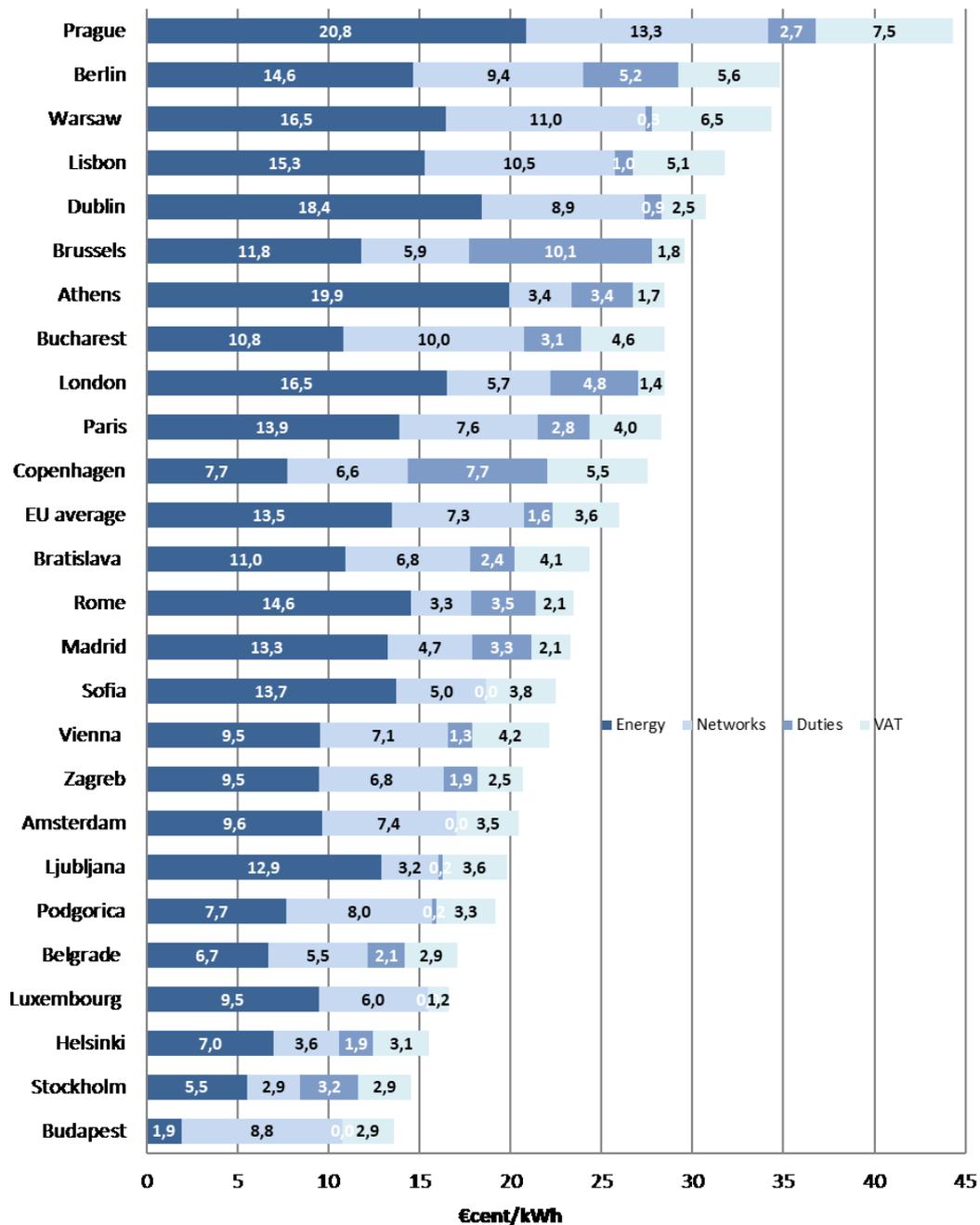


Figure 3-14: Structure of retail electricity price for households in some of European capitals in December 2024

So as to make a better comparison between electricity household prices, figure 3-15 indicates the structure of electricity final price for households at purchase power parity in some of European capitals in December 2024. In such a way, the differences in living standards which exist between different European countries were taken into account. In this case, only Helsinki, Luxembourg, Stockholm and Budapest have lower electricity household prices than in in Belgrade.



Data: E-Control and VaasaET (prices in December 2024)

Figure 3-15: Electricity final price structure for households in some European capitals in December 2024 at purchase power parity

In the second half of 2024, the given prices in Serbia for reference customers for industry are higher in comparison to most countries in the region (Montenegro, Bosnia and Herzegovina, North Macedonia and Albania) and in comparison to Turkey, Portugal, Sweden, Finland and Norway.

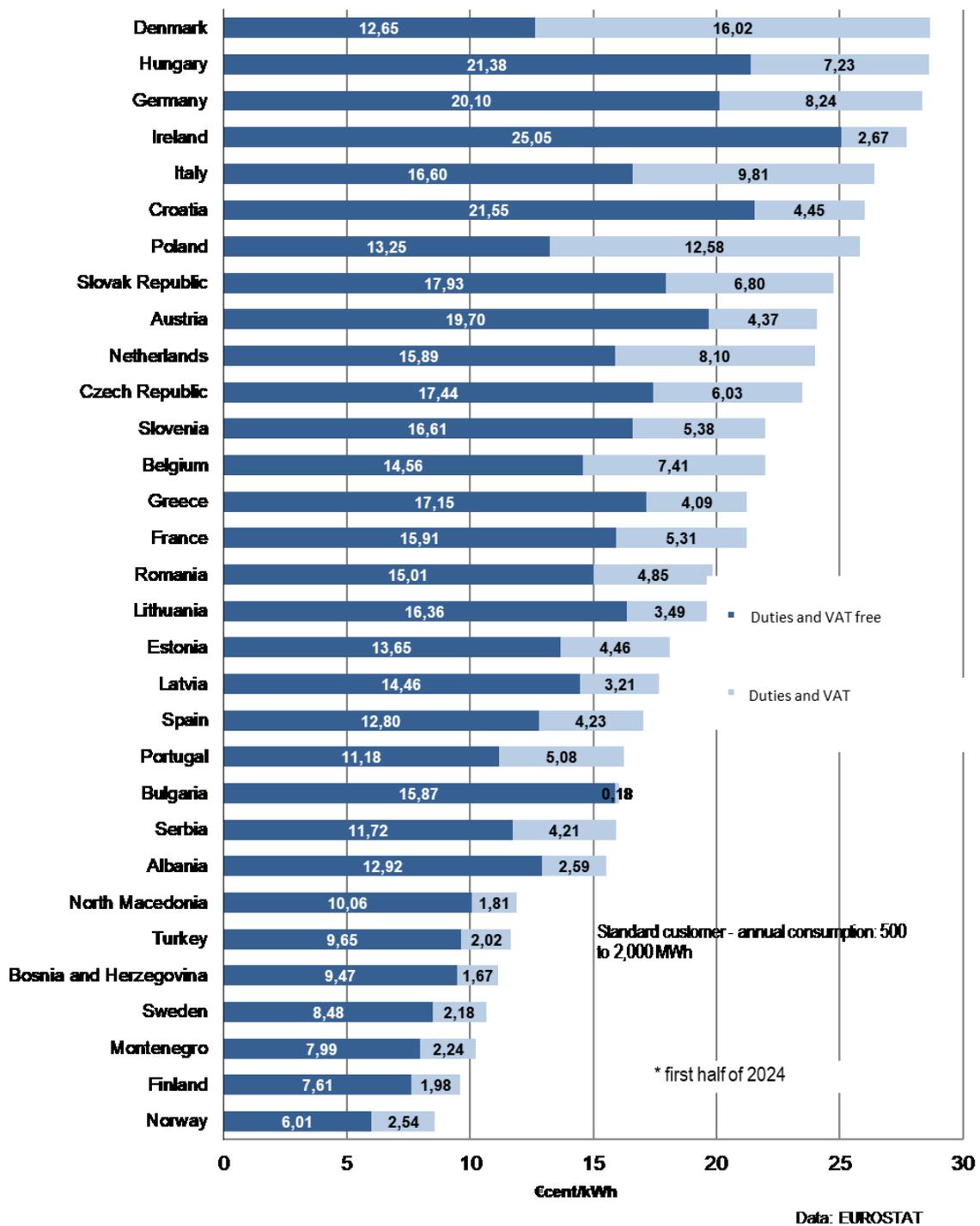


Figure 3-16: Electricity prices for industry – second half of 2024

3.6.1.2.4 Electricity sale in the open market

Since 2015, all final customers are entitled to purchase electricity in the open market. In 2024, 16,479 GWh of electricity were delivered in the open market, excluding the energy delivered via supply of the last resort, which amounts to 53.4% of final customers' consumption. To customers in the open market, electricity was delivered to 191 thousands metering points among which households account for 2 thousands (apartments owned by companies which purchase electricity in the open market).

Table 3-33: Electricity quantities delivered in the open market

Consumption category	Electricity quantities delivered in the open market (GWh)				
	2020.	2021.	2022.	2023.	2024.
High voltage (110 kV)	2.653	3.019	3.262	3.455	3510
35 kV	1.148	1.144	1.002	1.084	1.218
10 kV	6.105	6.560	6.860	6.944	7.214
Total high and medium voltage	9.906	10.723	11.124	11.483	11.942
Low voltage (0.4 kV I grade)	2.680	2.819	2.849	2.805	2.855
- 0.4 kV II grade	951	1.018	1.071	1.147	1.276
- households	17	20	22	48	35
Public lighting	478	461	422	390	371
Total low voltage	4.126	4.318	4.364	4.390	4.537
TOTAL open supply	14.032	15.041	15.488	15.873	16.479

Out of 79 energy entities which were licenced for electricity supply at the end of 2024, 11 of them were active in the open retail market which is 8 more than last year.

Table 3-34: Number of market players entitled for scheduling 2015 - 2024

Year	2015.	2016.	2017.	2018.	2019.	2020.	2021.	2022.	2023.	2024.
Number of market players	8	14	19	18	13	11	11	4	3	11

Suppliers who supply final customers in the open market:

1. Akcionarsko društvo "ELEKTROPRIVREDA SRBIJE" Beograd
2. "NOVA COMMODITIES" društvo sa ograničenom odgovornošću, Beograd
3. Društvo za istraživanje, proizvodnju, preradu, distribuciju i promet nafte i naftnih derivata i istraživanje i proizvodnju prirodnog gasa "Naftna industrija Srbije"a.d. Novi Sad
4. PETROL društvo za trgovinu naftom i naftnim derivatima d.o.o. Beograd
5. AXPO društvo sa ograničenom odgovornošću, Beograd
6. "EETS" TRGOVINA ELEKTRIČNOM ENERGIJOM DOO BEOGRAD
7. "GBG SNABDEVANJE" doo, Beograd
8. GEN-I društvo sa ograničenom odgovornošću Beograd
9. Privredno društvo "ELMAKO-ENERGY" doo, Beograd
10. "FORTIS POWER COMMODITIES" doo, Beograd
"ENERGOLINK" DOO, Beograd

Table 3-35: Open market concentration level in 2024

Suppliers' activity in 2024	Electricity quantity	Share of three suppliers with the biggest scope of trade		Herfindahl-Hirschman index HHI	Market concentration level
	(GWh)	(%)	(GWh)		
Sale of electricity to final customers in the open market					
Sale	16.479	100	16.478	9.989	High

Open market concentration level remained on the same level as last year. The quantity of electricity sold in the open market slightly increased in comparison to 2023 when 15,873 GWh were sold. Herfindahl-Hirschman Index (HHI) amounted to 9,989 and it decreased in comparison to last year when it amounted to 9,991 which indicates a slight decrease in the market concentration level in 2024.

Table 3-36: Electricity quantities sold to final customers in the open market - for each supplier in 2024

Supplier	Share (%)
Akcionarsko društvo "ELEKTROPRIVREDA SRBIJE" Beograd	98,20%
GEN-I društvo sa ograničenom odgovornošću Beograd	0,83%
"NOVA COMMODITIES" društvo sa ograničenom odgovornošću, Beograd	0,44%
AXPO društvo sa ograničenom odgovornošću, Beograd	0,27%
"GBG SNABDEVANJE" doo, Beograd	0,14%
PETROL društvo za trgovinu naftom i naftnim derivatima d.o.o. Beograd	0,05%
Privredno društvo "ELMAKO-ENERGY" doo, Beograd	0,04%
"EETS" TRGOVINA ELEKTRIČNOM ENERGIJOM DOO BEOGRAD	0,03%
"FORTIS POWER COMMODITIES" doo, Beograd	<0,01
"ENERGOLINK" DOO, Beograd	<0,01
Društvo za istraživanje, proizvodnju, preradu, distribuciju i promet nafte i naftnih derivata i istraživanje i proizvodnju prirodnog gasa "Naftna industrija Srbije"a.d	<0,01

EPS JSC remained the dominant supplier with a share of 98.2% of the total electricity sold to final customers in the open market (without energy sold within vertically integrated company) and with the share of the total EPS JSC sale (guaranteed, of-the-last resort and open market) of 99.06% of the total final consumption.

Table 3-37: Average annual retail prices in the open market for final customers (VAT and duties free)

Consumption category	RSD/kWh				
	Average annual price				
	2020.	2021.	2022.	2023.	2024.
High voltage (110kV)	6,43	6,95	9,16	12,92	11,71
35 kV	6,94	8,02	10,11	13,30	12,79
10 (20) kV	7,97	8,10	10,55	14,69	13,94
Total high and medium voltage	7,50	7,82	10,16	14,09	13,24
Low voltage (0/4 kV I grade)	10,24	10,66	13,50	17,39	16,49
- 0.4 kV II grade	10,15	10,77	13,47	17,43	16,49
- households	10,19	10,84	13,77	17,38	-
Public lighting	7,98	9,12	11,62	17,08	16,08
Total low voltage	9,95	10,52	13,31	17,38	16,46
TOTAL AVERAGE	8,25	8,63	11,09	15,04	14,17

The structure of retail prices in the open market in 2024 is given in the table below.

Table 3-38: Structure of realised average annual retail price in the open market for final customers

Elements	Price RSD/kWh
HIGH VOLTAGE- (110 kV) on transmission	
Total price	11,8
Transmission price	0,6
Electricity price	11,2
MEDIUM VOLTAGE(35 kV + 10(20) kV)	
Total price	13,8
Distribution price	2,0
Electricity price	11,8
MEDIUM VOLTAGE- (35 kV)	
Total price	12,8
Distribution price	1,3
Electricity price	11,5
MEDIUM VOLTAGE- (10/20 kV)	
Total price	14,0
Distribution price	2,1
Electricity price	11,9
LOW VOLTAGE (0,4 kV I rate)	
Total price	16,5
Distribution price	4,0
Electricity price	12,5
MASS CONSUMPTION (MS)	
Total price	16,5
Distribution price	4,1
Electricity price	12,4
MC – Commercial and others (0,4 kV II rate)	
Total price	16,5
Distribution price	4,1
Electricity price	12,4
MC - household	
Total price	-
Distribution price	-
Electricity price	-
PUBLIC LIGHTING	
Total price	16,1
Distribution price	3,7
Electricity price	12,4
TOTAL SALE ON DISTRIBUTION NETWORK	
Total price	14,7
Distribution price	2,7
Electricity price	12,0
TOTAL ON TRANSMISSION AND DISTRIBUTION NETWORK	
Total price	14,2
Network price	2,3
Electricity price	11,9

Being the supplier of the last resort, EPS JSC delivered 50 GWh of electricity to customers, i.e. 0.15% of the total electricity delivered to final customers. Electricity quantities delivered within the supply of the last resort regime for each consumption category for the period 2020-2024 are given in Table 3-39.

Table 3-39: Electricity quantities delivered under the supply of the resort regime

Consumption category	Electricity quantities delivered under the supply of the resort regime (GWh)				
	2020.	2021.	2022.	2023.	2024.
High voltage (110kV)	12	15	0	0	0
35 kV	0	2	0	0	0
10 (20) kV	27	100	43	10	10
Total high and medium voltage	39	118	43	10	10
Low voltage (0/4 kV I grade)	18	54	32	18	18
- 0.4 kV II grade	4	29	23	10	11
- households	0	1	1	2	1
Public lighting	11	9	14	4	10
Total low voltage	33	93	70	34	40
TOTAL SUPPLY OF THE LAST RESORT	72	210	113	44	50

The structure of the realised average price of supply of the last resort for each voltage level separately and for customer categories and groups is given in the table below:

Table 3-40: Average annual price of the supplier of the last resort for final customers (VAT and duties free)

Consumption category	Average annual price					RSD/kWh
	2020.	2021.	2022.	2023.	2024.	
High voltage (110kV)	9,01	9,04	12,29	-	-	
35 kV	-	10,04	-	19,50	17,39	
10 (20) kV	9,96	9,79	14,14	19,34	17,91	
Total high and medium voltage	9,65	9,71	13,95	19,34	17,87	
Low voltage (0/4 kV I grade)	11,95	12,33	17,49	21,57	20,10	
- 0.4 kV II grade	12,38	11,97	17,52	21,82	19,42	
- households	12,63	11,86	18,46	21,27	-	
Public lighting	11,16	11,56	16,71	21,17	18,23	
Total low voltage	11,75	12,13	17,33	21,55	19,27	
TOTAL AVERAGE	10,55	10,70	16,67	21,04	19,01	

The total realised average electricity price in the retail market in Serbia which relates to all types of trade in electricity amounts to 12.33 RSD/kWh or 10.53 €/kWh, if calculated in line with the average Euro exchange rate for 2024. The structure of this total average price for each voltage level, customer category and group separately is given in the table below:

Table 3-41: Total average annual prices for regulated market, open market and supply of the last resort (VAT and duties free)

Consumption category	Average annual price					RSD/kWh
	2020.	2021.	2022.	2023.	2024.	
High voltage (110kV)	6,45	6,94	9,16	12,92	11,71	
35 kV	6,94	8,03	10,11	13,30	12,80	
10 kV	7,98	8,13	10,56	14,70	13,95	
Total high and medium voltage	7,50	7,84	10,17	14,10	13,24	
Low voltage (0/4 kV I grade)	10,41	10,76	13,39	17,28	16,46	
- 0.4 kV II grade	9,77	10,22	11,77	15,24	15,01	
- households	7,14	7,37	7,61	9,94	10,03	
Public lighting	8,01	9,12	11,66	17,06	16,12	
Total low voltage	7,92	8,26	9,11	11,88	11,78	

TOTAL AVERAGE	7.61	7.79	8.12	9.49	12.69
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Except for the electricity meant to meet the demand of final customers, open market also provided for the energy meant for the recovery of losses in the transmission network.

The table below reviews all the realised average annual electricity prices for each activity in the electricity market in Serbia separately.

Table 3-42: Review of realised average annual prices for each activity in 2024

Activity	Structure	Price
		RSD/MWh
Wholesale market	Sale to other suppliers	11,91
	Sale on the exchange	11,45
	Export	12,72
	Total wholesale price	12,10
Transmission	Access to the transmission network	0,27
	Losses in the transmission network	0,21
	Ancillary services and capacity reserve	0,13
	Transmission – total	0,61
Distribution	Access to the distribution network	2,52
	Losses in the distribution network	0,94
	Distribution – total	3,45
Retail	Public supply at regulated prices	10,29
	Supply of the last resort	19,01
	Supply of eligible customers at market prices	14,17
	Retail – total	12,33
Other	Additional costs (taxes and duties)	4,63
Final customers – average (with additional costs and duties)		16,95
- industrial customers (out of the total number)		19,28
- households (out of the total number)		13,99

3.6.1.2.5 Supplier switching

Supplier switching procedure implies any voluntary switch of the final customer with the selected supplier in line with the Law and Rules on Supplier Switching. The procedure when final customers had to quit regulated public supplier “by the rule of the law” and select a supplier is not considered to be a supplier switching procedure since customers had to switch to the supply of the last resort before they selected their supplier.

Table 3-43: Supplier switching for metering points separately in 2024

Consumption category	Number of metering points			Electricity delivered (MWh, %)		
	Total	With the supplier switch	%	Total	At metering points with new supplier	%
High voltage	52	0	0,00	3.573.000	0	0,00
Medium voltage (35 kV)	126	15	11,90	1.218.474	6.879	0,56
Medium voltage (10 and 20 kV)	5.910	157	2,66	6.876.681	149.734	2,18
Low voltage - (0.4kV I grade)	42.440	1.144	2,70	3.021.682	66.132	2,19
Mass consumption – Commercial and other (0.4kV II grade)	382.880	8.602	2,25	2.222.655	38.867	1,75
Public lighting	24.032	1.913	7,96	382.426	19.626	5,13
Households	3.373.023	4.076	0,12	13.225.392	5.412	0,04

Total	3.828.463	15.907	0,42	30.520.310	286.650	0,94
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In accordance with the Rules on Supplier Switching, the prescribed deadline for carrying out the supplier change procedure is 21 days. During 2024 as well, for customers at the distribution level, this deadline was in practice generally used in full.

In total, there were 15,907 supplier switches in 2024, accounting for 0.42% of the total number of metering points (3,828,463). The total volume of electricity delivered at locations with a new supplier amounted to 286,650 MWh, representing 0.94% of the total electricity supplied (30,520,310 MWh). This represents a significant increase compared to 2023, when the percentage of energy covered by supplier switching was 0.60%.

3.6.2 Guarantees of origin

Guarantees of origin are electronic documents which have an exclusive function to provide evidence to a final customer that the given share or energy quantity which was delivered by a supplier was produced from the renewable sources. They include the piece of information on the characteristics of production for MWh of electricity and they are used for determination of the structure of sources which are used to provide the consumed electricity. Guarantees of origin provide electricity customers to express their interest for “green” energy and to stimulate power generation which contributes to power system development under environment-friendly conditions from their side.

In accordance with the Law on the Use of Renewable Energy Sources, EMS AD Belgrade, as the transmission system operator, has several roles within the guarantees of origin system:

- the body responsible for issuing guarantees of origin,
- the administrator of the guarantees of origin registry,
- the body responsible for measuring generation on the transmission system,
- the entity responsible for calculating the share of all types of energy sources in electricity sold to final customers, i.e. for calculating the national residual mix in the territory of Serbia.

Since 2017, when the Decree on Guarantees of Origin, the Rulebook on the Calculation of Energy Source Shares, and the Rules on the Issuance of Guarantees of Origin were adopted, a comprehensive regulatory framework for the functioning of this market mechanism has been established. Serbia became the first Contracting Party of the Energy Community to obtain full membership status in the Association of Issuing Bodies (AIB), and accession to the AIB HUB in November 2020 enabled cross-border trading of this instrument. In 2023, a successful audit of the system by the AIB was completed, confirming the compliance of Serbia’s system with EU standards. In addition, data migration from the former CMO.Grexel system to the new G-REX system was carried out, further enhancing the technical infrastructure for handling guarantees of origin.

The total number of guarantees of origin issued in Serbia from November 2018 to the end of 2024 amounts to 15,510,782, of which 2,509,254 were issued in 2024 alone. Compared to 2023, when a record 10,581,175 guarantees were issued, this figure is significantly lower, which may indicate market stabilization or saturation.

From the moment imports of guarantees of origin via the AIB HUB were enabled until the end of 2024, a total of 632,948 guarantees of origin were imported, with 119,835 imported in 2024. Exports of guarantees of origin via the AIB HUB from the beginning until the end of 2024 amounted to 8,776,760, of which 1,619,349 were exported during 2024.

EMS AD Beograd registers participants in the system of guarantees of origin and organizes informative presentations in order to provide all necessary pieces of information to interested parties and to make them familiar with new market process. The current structure of registered participants in the Registry of Guarantees of Origin reads:

- Eligible producer, supplier – 4
- Wholesale supplier – 13
- Eligible producer - 18
- Supplier – 19

The opening of the guarantees of origin market has contributed to greater transparency and competition, enabling electricity producers from Serbia to access markets across Europe, while allowing suppliers to import “green” guarantees of origin from abroad. A comparative analysis of data for 2023 and 2024 shows significant changes in the volume of issued guarantees of origin, as well as in the structure of participants in the system. While a record 10,581,175 guarantees of origin were issued in 2023, this number amounted to 2,509,254 in 2024, representing a decline of more than 75%. This decrease may indicate market stabilization following the intensive growth recorded in the previous year. On the other hand, the number of registered participants increased slightly: in 2023 there were a total of 44 participants, while by the end of 2024 this number had risen to 54, albeit with a different structure—an increased number of suppliers and qualified producers—indicating further market diversification and growing interest in the guarantees of origin mechanism.

3.6.3 Electricity balancing market

In recent years, the balancing responsibility system in the Republic of Serbia has been significantly improved through regulatory, organizational, and technical changes. The Energy Law and amendments to the Rulebook on Licensing have enabled foreign companies to obtain licenses for wholesale electricity supply and to acquire the status of a Balancing Responsible Party (BRP).

During 2022, the development of the balancing responsibility market was marked by a significant number of activities. Changes to the composition of balancing groups were carried out on 53 occasions, initiated by various contractual relationships between final customers, suppliers, and BRPs. In accordance with contracts with JP EPS, EMS AD engaged balancing entities in secondary and tertiary control to maintain the balance between generation and consumption. Cross-border balancing was also implemented in cooperation with CGES and NOSBiH, including the activation of emergency and tertiary energy within the settlement interval.

In 2022, the transmission system operator EMS AD was actively involved in regional and European initiatives related to the coupling of organized electricity markets, the cross-border balancing electricity market (as an observer in the MARI project), as well as the European project of a single intraday electricity market. In October 2022, EMS AD became an operational member of the European platform for imbalance netting (IGCC), representing a significant step in the process of European integration of Serbia's balancing mechanism.

In 2022, a new energy registry of electricity market participants was developed – NERA (New Energy Registry for Applicants). It was successfully commissioned on 23/11/2022 which is used for the administration of balancing responsibility and of balancing groups team.

In 2023, these activities were continued. The SMM GCC mechanism (Serbia, Montenegro, North Macedonia) remained in operation, enabling the netting of imbalances between control areas. Within the IGCC platform, Serbia continued its active participation in imbalance exchange processes.

During 2024, in accordance with contracts with EPS AD, EMS AD continued to engage balancing entities in secondary and tertiary control, as well as cross-border exchanges of tertiary energy with neighboring transmission system operators. The total activated balancing energy across all settlement intervals in 2024 amounted to 1,051,011.32 MWh, while energy activated for system security purposes totaled 26.67 MWh.

The structure of balancing energy in 2024 comprised:

- Secondary control: 35,297.23 MWh (upward) and 54,306.76 MWh (downward),
- Tertiary control: 417,377.06 MWh (upward) and 280,646.62 MWh (downward),
- SMM GCC: 39,117.46 MWh (upward) and 14,283.85 MWh (downward),
- IGCC: 79,832.96 MWh,
- Emergency energy: 2,585.00 MWh,
- Cross-border tertiary energy: 2,123.00 MWh.

Weighted average imbalance settlement prices in 2024 were:

- Average price: €96.753/MWh,
- In cases where total balancing energy in the settlement interval was greater than zero (the system was "short"): €146.679/MWh,
- In cases where total balancing energy in the settlement interval was less than zero: €31.925/MWh.

These values indicate a slight increase in the total volume of balancing energy compared to 2023 (1,043.6 GWh), alongside a decrease in the average price (€/MWh 100.6 in 2023). This points to greater system stability and efficiency, as well as the successful integration of Serbia into regional and European balancing mechanisms.

3.6.4 Organised electricity market

Pursuant to the Energy Law, organised market is an institutionally regulated relation between the supply and the demand between electricity market participants with standardised products and physical delivery determined in advance within the day-ahead and intraday time framework. On July 14, 2015, EMS JSC established SEEPEX JSC Belgrade – power exchange. It was established on the basis of partnership with EPEX SPOT with initial focus on day-ahead market.

The organised market (exchange) started operating in February 2016 and the review of the activities in this market is available on the website www.seepepex-spot.com. In 2024, a total of 47 participants were registered on the SEEPEX exchange, of which 34 were actively trading. Compared to 2023, when there were 45 registered and 33 active participants, the number increased slightly. Day-ahead auctions product is available on the exchange and there are two methods for bidding: individual and block bid. Individual bid includes up to 256 price/quantity combinations for each individual hour of the following day, where prices have to be between 0.0 €/MWh and 3,000 €/MWh. Block bid, which was introduced on SEEPEX on March 22, 2017, is the bid which connects several hours in line with the principle "all or nothing" which means that the bid is either accepted for all the hours or it is completely rejected. It is possible to insert different electricity quantities for each block hour

while there is one price offered for the whole block. With the introduction of curtailable blocks on 15/12/2021, the options of block offers were expanded in a manner that “all or nothing” rule is relaxed by the definition of Minimum Acceptance Ration of the offer the applicant is ready to accept.

Since 2018, EMS JSC has been purchasing electricity for loss recovery via auctions which are organized by EMS JSC on the electronic platform i.e. so-called Auction Platform. Missing quantities are purchased on organized day-ahead electricity market in Serbia – SEEPEX exchange. Auction participants are companies licenced for electricity supply which complied with conditions prescribed by EMS JSC beforehand and which had a framework contract concluded with EMS JSC. In addition, during some periods, in line with the Law, due to lower loss levels than expected, EMS JSC sold extra electricity meant for loss recovery which was purchased via auction platform on the power exchange – SEEPEX.

The total volume of electrical energy traded on the day-ahead market in 2024 amounted to 5,123,811 MWh, representing a 9.5% increase compared to 2023, when 4,680,359 MWh were traded. The share of exchange-based trading relative to the total energy delivered to final customers was 15.5% in 2023 and increased to 16.5% in 2024. In addition, the share relative to the energy delivered to customers on the liberalized market rose from 29.3% in 2023 to 30.8% in 2024. The highest hourly price was €280.1/MWh, while the lowest was €22.68/MWh. The average annual base price amounted to €96.35/MWh, which is 7% lower than in the previous year.

On 23 December 2022, SEEPEX became part of the regional exchange ADEX (Alpine-Adriatic Danube Electricity Exchange), established in cooperation with the system operators ELES and EPEX SPOT. This corporate integration of SEEPEX and BSP SouthPool aims to achieve regional market integration in Central and Southeast Europe.

In July 2023, the intraday organized market was launched on SEEPEX, which made significant progress during 2024. The total annual intraday trading volume amounted to 115,122 MWh, more than 30 times higher than the volume recorded in 2023 (3,960 MWh). The highest monthly trading volume was achieved in December, amounting to 18,934 MWh.

In March 2024, the Hungarian power exchange joined the ADEX group.

During 2024, trading in SEEPEX futures continued. These instruments represent standardized tools for hedging against price risks. The total volume of futures traded in 2024 amounted to 624 GWh, indicating stable interest in long-term hedging instruments on the Serbian electricity market.

Table 3-44: Electricity trade in organised market (SEEPEX) in 2017–2024

Year	Trade scale (GWh)	Share in total consumption (%)	Share in open market (%)
2017.	850	3,5	8,2
2018.	950	4,1	9,5
2019.	1.350	6,2	13,0
2020.	1.980	9,3	18,7
2021.	2.760	11,7	22,9
2022.	3.300	13,4	25,9
2023.	4.682	15,6	29,4
2024.	5.548	18	33,6

3.6.5 Transparency

In line with the Treaty establishing the Energy Community, with the decision of the Permanent High Level Group Ministerial Council of June 24, 2015 and the 2014 Energy Law, the Republic of Serbia assumed an obligation to transpose the EU Transparency Regulation 543/2013 into national legislation. This Regulation defines the data and deadlines within which these data should be published in order to increase the electricity market transparency. In line with the Energy Law, this Regulation is transposed into our legal framework by having the Assembly of the Joint Stock Company “*Elektromreza Srbije*” Beograd adopted Rules on Publication of Key Market Data which were approved by the Agency Council on the session held on December 9, 2016. These rules establish obligations of the electricity transmission system operator, electricity distribution system operator, closed electricity distribution system operator, electricity producer and final customer related to the publication of all relevant data on consumption, transmission, production and balancing market. As of 23/12/2016, all key market data, except for those defined in transitory and final provisions are published on the ENTSO-E transparency platform (EMFIP – Electricity Market Fundamental Information Platform on the website <https://transparency.entsoe.eu>) in line with deadlines defined by these Rules. In 2024, EMS JSC submitted 99% of the total number of data defined by the EU Regulation 543/2013 on transparency on the EMFIP platform. As of September 1, 2019, Rules on the Publication of Key Market Data which are harmonized with amendments to guidelines for the implementation of the EU Regulation 543/2013

which were adopted by ENTSO-E are applicable. In line with the Law on Amendments to the Energy Law adopted on 22/04/2021, in late 2021, the Agency approved amendments to the Rules which were submitted by EMS JSC and which related to the publication of data on production realised in each production unit, on electricity production from solar and wind and the forecast of production of electricity from solar and wind for day ahead. These Rules entered into force as of 23/03/2022. The forecast and actual electricity generation from solar energy will be available on the transparency platform once the condition is met that the share of solar generation exceeds 1% of the total annual electricity production. Within the Energy Community Regulatory Board (ECRB), in 2023, the compliance with the requirements of the EU Regulation 543/2013 on data publication which is valid for the Energy Community Contracting Parties was monitored via automatized platform within the website of the Energy Community Secretariat. The platform began operating in 2022 and it facilitated the data update procedure as well as the access of interested parties to these pieces of information.

3.6.6 Regional coupling

A set of activities relevant for the whole region are organised within the Energy Community (EnC), with active participation of the Agency representatives.

Wholesale market

In line with the decisions of the Energy Community Ministerial Council 2021/13/MC-EnC of 30/11/2022 and 2022/03/MC-EnC of 15/12/2022 which enabled the adaptation of the EU regulations in the electricity field, the Republic of Serbia was obliged to transpose these regulations into national legislation until the end of 2023. The adoption of adapted EU Directives and Regulations, particularly of those representing the so-called network codes which are important for the electricity market functioning and for the operational work of power systems is aimed at the creation of conditions for more accelerated integration of electricity market in the Western Balkans into a common Pan-European electricity market of the EU as well as for the harmonisation of procedures in the field of system operation and balancing. This regulatory package includes: Procedural Act on Regional Market Integration 2022/PA/01/MC; Directive (EU) 2019/944 common rules of internal electricity market; Regulation (EU) 943/2019 on electricity; Regulation on ACER 942/2019; Regulation (EU) 2019/941 on risk-preparedness in the electricity sector; Regulation/Network Code (EU) 2016/1719 (FCA) on capacity allocation; Regulation/Network Code (EU) 2015/1222 (CACM) on capacity allocation and congestion management; Regulation/Guidelines (EU) 2017/2195 (GLEB) for balancing; Regulation/Guidelines (EU) 2017/1485 (SOGL) on transmission system operation; Regulation/Network Code (EU) 2017/2196 on emergencies and the transmission system re-establishment. At the end of 2024, a new Energy Law was adopted, transposing all of the above-mentioned directives and regulations, thereby fulfilling this obligation. The project on the establishment of the Coordinated Auction Office in the SEE, aimed at harmonisation of the allocation rules and nomination of rights for the use of cross-border capacity on both long-term and short-term level in the eighth region⁹ was developed since 2008 in several phases. The Office was established in April 2014 in Podgorica and it gathers founders – transmission system operators from BiH (NOS BiH), Croatia, (HOPS), Montenegro (CGES), Kosovo* (KOSTT), Albania (OST), North Macedonia (MEPSO), Greece (IPTO) and Turkey (TEIAS). The Office covers cross-border capacity allocation on seven borders. The Transmission System Operator of Serbia (EMS, JSC) did not participate in the establishment of the Office and does not use their services.

During 2024, EMS AD used the services of the JAO office for coordinated capacity auctions at the borders with Croatia, Bulgaria and Hungary.

The Transmission System Operator EMS JSC concluded contracts on the exchange of emergency energy or the exchange of cross-border tertiary control energy (PTRE) in cases when the safety of operations of the power system and/or supply of customers in the country is endangered, on natural exchange basis or on commercial basis. EMS JSC concluded multiannual contracts on emergency energy exchange on commercial basis with transmission system operators of Hungary (MAVIR) in 2019, Croatia (HEP-OPS) in 2018 and Romania (Transelectrica) in 2017. The contract concluded by EMS AD on an indefinite term and on a natural (in-kind) basis for the exchange of emergency energy with the Bulgarian transmission system operator is no longer in force. A new agreement on the exchange of cross-border tertiary balancing energy with the Bulgarian transmission system operator is currently under preparation. Contracts on the exchange of cross-border tertiary control energy between EMS JSC signed with Montenegro (CGES), North Macedonia (MEPSO) and Bosnia and Herzegovina (NOS BiH) were valid. These contracts imply a possibility to have fifteen-minute energy activation within an hour for the control in both directions with a price which depends on the bids within the national balancing mechanism. The contract with MEPSO is not active due to problems on the North Macedonian side.

Market monitoring

Within the Energy Community, great attention is paid to the development of tools and databases for electricity and natural gas market monitoring. As early as in 2015, there were negotiations between ACER and EnC Secretariat on the types of cooperation between ACER and ECRB working groups in order to follow the activities in the EU more easily and implement the EU mechanisms in the Energy Community Contracting Parties. Under the Memorandum of Understanding between ACER and the Energy Community Secretariat, signed in 2016, it was agreed that the Contracting Parties would oversee the wholesale and retail electricity markets using indicators from ACER. From 2016 to 2020, the ECRB working groups for electricity and for consumers and retail markets conducted market oversight within their activities according to the indicators

⁹ One of 8 European regions within which regional electricity markets are developed which are being integrated in the EU market. The region includes Albania, Bosnia and Herzegovina, Serbia, Montenegro, Kosovo*, Macedonia, Slovenia, Croatia, Hungary, Romania, Bulgaria, Greece and Italy with the future undersea cable.

used by ACER for market oversight in the EU, to the extent applicable to all Energy Community Contracting Parties, considering the varying levels of market development compared to EU member states, and publishing the annual ECRB report. In 2020, an agreement was reached between ECRB and ACER to include the Contracting Parties' data on wholesale electricity market oversight in ACER's market oversight report, in an agreed scope and structure. Thus, for the first time, the ACER market oversight report for 2020 included a report on the Energy Community Contracting Parties within an annex published in November 2021. ACER did not publish a market oversight report for 2021-22 in the usual format, and thus data for the Energy Community Contracting Parties was not published. In 2024, data collection from the Contracting Parties began for the preparation of ACER's report in the new format.

Based on the Guidelines for Regulatory SEE Market Monitoring which were approved by the ECRB in 2014, during 2024, there were periodical assessments on whether the market was functioning in line with the adopted rules and on the basis of transparency and non-discrimination principles in terms of calculation of available cross-border capacity and organised allocation procedures. The implementation of these Guidelines aims at the establishment of a harmonised approach to regulatory tasks and an introduction of a possibility for regional market monitoring. However, the Guidelines are not legally binding. The Guidelines also include recommendations to regulators from the region for the collection of necessary data for monitoring use of cross-border capacities.

Regarding electricity market monitoring in the Southeast European region, within the activities of ECRB, issues were discussed in the use of the SEEMMS internet platform software in 2024. This platform aims to detect deviations in indicators related to the calculation of available cross-border capacity and allocations made in accordance with the Guidelines for Regulatory Market Monitoring in Southeast Europe. Throughout 2024, discussions were continued on how to overcome these issues to ensure the continued rotation of Contracting Parties as administrators of the SEEMMS platform.

In 2024, within the ECRB Working Group for Customers and Retail Market, data were collected and a report was made on retail electricity market monitoring based on data from 2023.

By the adoption of the Regulation 1227/2011 on Integrity and Transparency of Wholesale Energy Market ("Light REMIT"), by the Decision of the Energy Community Ministerial Council in November 2018, ECRB established a new working group. The main tasks of the group imply the preparation of regulators for new jurisdiction both on the national level and on the Energy Community level in line with the "Light REMIT" Regulation. A Procedural Act was drafted by the working group, i.e. regulatory recommendation was drafted and the Energy Community Regulatory Board adopted it on August 7, 2020. The purpose of this regulatory recommendation is to: 1) establish the ground for the coordination of national regulatory bodies of the Contracting Parties in the field of their tasks arising from the "Light REMIT" Regulation; define the cooperation process via ECRB; 3) harmonise formats used by regulators; 4) make a draft of actions to be taken by the ECRB and 5) settle issues of confidentiality related to the data and information exchange. On the session held on October 28, 2021, the Council of the Energy Agency of the Republic of Serbia adopted Rules on Prevention of Abuse on Electricity and Natural Gas Markets. These rules regulate conditions for the registration of wholesale electricity and natural gas market participants – conditions for publication of inside information, prohibition of trade in inside information, prohibition of market manipulation, type, content, form, manner and deadlines for the creation and publication of data, data protection, professional secret, operational responsibility and obligations of the person who regulates transactions as a professional. The rules were adopted in line with commitments of the Republic of Serbia assumed by ratified international treaties and by the law regulating the energy field.

3.7 Monitoring and regulation of the quality of delivery and supply

The Council of the Agency adopted Rules on Monitoring Technical and Commercial Indicators and on Regulating Quality of Electricity and Natural Gas Delivery and Supply (Rules on Quality) in 2013. Rules on Quality were adopted on the basis of the gathered experience in data collection and monitoring electricity delivery and supply quality indicators as well as of international practice in the quality monitoring of services provided by energy entities. The Rules are established in order to define more closely the indicators of technical and commercial quality of delivery and commercial quality of electricity supply, the method of registering data and calculation of indicators, method and deadlines for the submission of data and reports to the Agency, harmonisation the method of data registering and calculation of quality indicators which enables the establishment of a base of complete, reliable and comparable data and calculated indicators in order to compare and regulate them. The collected data and calculated indicators should provide the prescription of the method of setting required values of certain indicators as well as the method of assessing results achieved by monitoring the reached results in comparison to the required indicators values of quality in future amendments of the Rules on Quality. Upon that, the procedure in case of deviation from demanded indicators' values will be also defined afterwards as it is defined in the Energy Law. In 2022, the data on quality of delivery and supply which were submitted by energy entities during previous years which will be used as the basis for the amendment of the Rules and their harmonisation with the Law. The collection of data on delivery and supply quality was established in line with the Rules on Quality by defining the type, scale and format of the data and indicators on technical and commercial aspects of quality as well as the deadlines for the submission of them by energy entities to the Agency. As it was the case in the past when the practice and infrastructure necessary for registering data, indicators calculation and reporting on quality was improved, in 2024, the distribution system operator continued with these activities, especially in the field of registering continuity of delivery.

3.7.1 Continuity of electricity delivery

Electricity transmission and distribution system operators monitor the continuity of electricity delivery regularly and these data indicate the number and duration of planned and unplanned delivery interruption. The entities submit monthly reports for all interruptions in the transmission and distribution network longer than 3 minutes. These reports are submitted to the Agency and the data on interruptions present the basis for the calculation of annual interruption indicators from the transmission and distribution network, for planned and unplanned interruptions and in total in the 2011-2024 period.

3.7.1.1 Transmission network continuity of delivery

Indicators of discontinuity of delivery from the transmission network which are monitored and calculated are the following:

- Power failure – undelivered power [MW] – total failed power on all measuring points where supply was interrupted;
- ENS [MWh] – total undelivered electricity;
- ENS [%] – a share of undelivered electricity in total delivered electricity;
- AIT [min] – average interruption duration in minutes, a quotient of undelivered electricity and average power.

Compared to 2023, the indicators for unplanned outages in 2024 improved significantly, both in terms of energy not supplied (ENS) and lost capacity. In 2024, unplanned outages resulted in an ENS of 1,036.48 MWh, which represents 0.03% of the total electricity delivered of 3,220,950 MWh. This is significantly lower than in 2023, when the ENS from unplanned outages amounted to 2,293 MWh, representing 0.068% of delivered energy. Compared to the five-year average (2020–2024) of approximately 0.076%, the results for 2024 also indicate improvement.

Analysing the data by causes of outages, it is noticeable that the impact of force majeure in 2024 was significantly reduced, from 63.11% in 2023 to only 4.50% in 2024. On the other hand, outages caused by other energy entities increased from 15.87% in 2023 to 50.35% in 2024.

The share of outages caused by the transmission system operator (EMS AD) in 2024 was 44.47%, representing a significant increase compared to 17.3% in 2023. The share of third parties in total ENS also slightly increased, from 0.17% in 2023 to 0.68% in 2024, while the “other” category, which accounted for 3.54% in 2023, was not recorded in 2024.

The indicators for power failure and undelivered electricity for planned and unplanned interruptions in the last ten-year period are given in table 3-45.

Table 3-45: Indicators of discontinuity in delivery within the transmission network in the period 2015 - 2024

Interruptions		Power failure – undelivered power	ENS	ENS
		MW	MWh	%
2015				
	Planned	359	1,543	0.0003
	Unplanned	2,292	1,659	0.0104
	Total	2,351	3,202	0.0107
2016				
	Planned	167	547	0.0046
	Unplanned	1,693	1,317	0.0049
	Total	1,860	1,864	0.0095
2017				
	Planned	306	1,496	0.0016
	Unplanned	1,980	1,418	0.0039
	Total	2,286	2,914	0.0055
2018				
	Planned	350	1,552	0.0044
	Unplanned	1,059	826	0.0042
	Total	1,409	2,378	0.0086
2019				
	Planned	429	1,065	0.0024
	Unplanned	832	595	0.0013
	Total	1,261	1,660	0.0037
2020				
	Planned	676	1,162	0.0032
	Unplanned	2,856	978	0.0017
	Total	3,535	2,140	0.0049
2021				
	Planned	495	1,340	0.0035

	Unplanned	1,147	1,403	0.0029
	Total	1,642	2,743	0.0064
2022				
	Planned	925	1,034	0.0039
	Unplanned	791	819	0.0041
	Total	1,716	1,853	0.0080
2023				
	Planned	13,771	1,150	0.0034
	Unplanned	13,042	2,293	0.0068
	Total	26,813	3,443	0.0103
2024.				
	Planned	522	560	0.02
	Unplanned	1067	1036	0.03
	Total	1589	1596	0.05

Figure 3-17 indicates all the causes of unplanned interruptions and their share in the quantities of energy which was not delivered to all transmission system users in 2024. Unplanned interruptions caused by the transmission system operator in the previous year are significantly higher compared to the previous year.

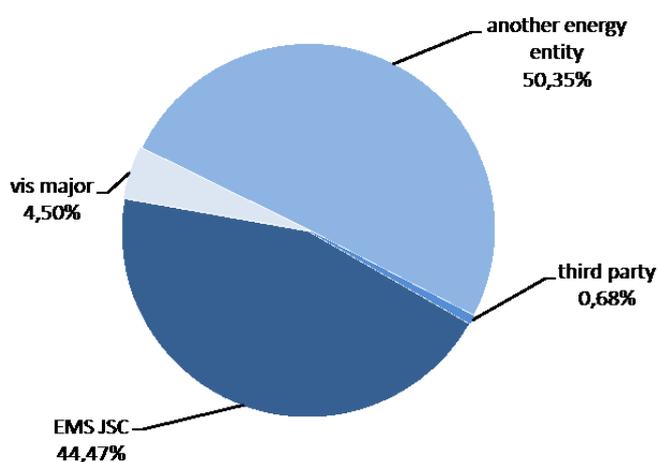


Figure 3-17: Causes of unplanned interruptions and their share in undelivered energy for all transmission system users in 2024

Table 3-46: Unplanned interruption causes and their share in undelivered energy volume for transmission system users in 2024

Interruption cause	ENS[MWh] (2023.)	Share [%] (2023.)	ENS[MWh] (2024.)	Share [%] (2024.)	Change (ENS) [%]
EMS JSC	396,80	17,30	460,92	44,47	▲ +16,2%
Vis major	1.447,32	63,11	46,62	4,50	▼ -96,8%
Other energy entity	363,89	15,87	521,87	50,35	▲ +43,4%
Third party	4,00	0,17	7,07	0,68	▲ +76,8%
Other	81,27	3,54	0,00	0,00	▼ -100%
Total ENS	2.293,28	100%	1.036,48	100%	▼ -54,8%

The values of the most commonly used continuity indicator in the AIT transmission network, shown separately for planned and unplanned outages, as well as in total, are presented in Figure 3-18.

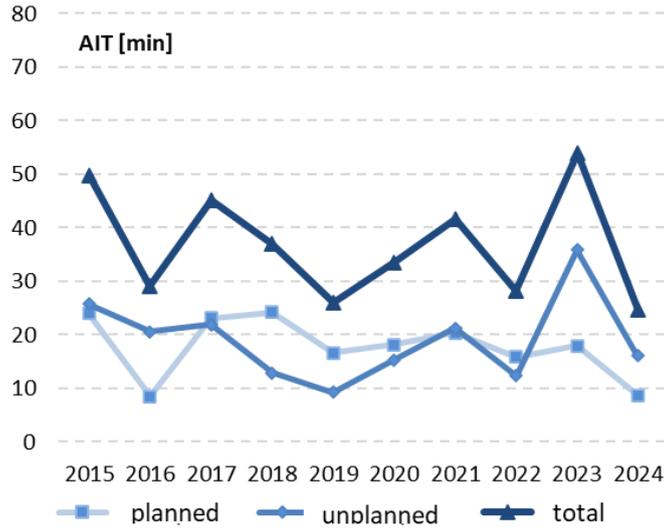


Figure 3-18: Average duration of supply interruption

Compared to 2023, 2024 saw a significant reduction in the average duration of both planned and unplanned outages. The average duration of planned outages in 2024 was 8.68 minutes, which is half the value recorded in 2023, when it was 17.99 minutes.

For unplanned outages, the average duration in 2024 was 16.08 minutes, representing more than a twofold reduction compared to 2023, when it was 35.89 minutes.

Overall, the total average duration of all outages (planned and unplanned) in 2024 was 24.76 minutes, almost half of the 2023 value of 53.88 minutes.

3.7.1.2 Distribution network continuity of delivery

The indicators for the estimation of discontinuity of delivery from the distribution network are the following:

- SAIFI¹⁰ – average frequency of interruptions per each user, and
- SAIDI¹¹ – average duration of interruptions in minutes per user.

The indicators of continuity of delivery in the distribution network for the period 2020-2024, separately for planned and unplanned interruptions and jointly are given in Figure 3-19.

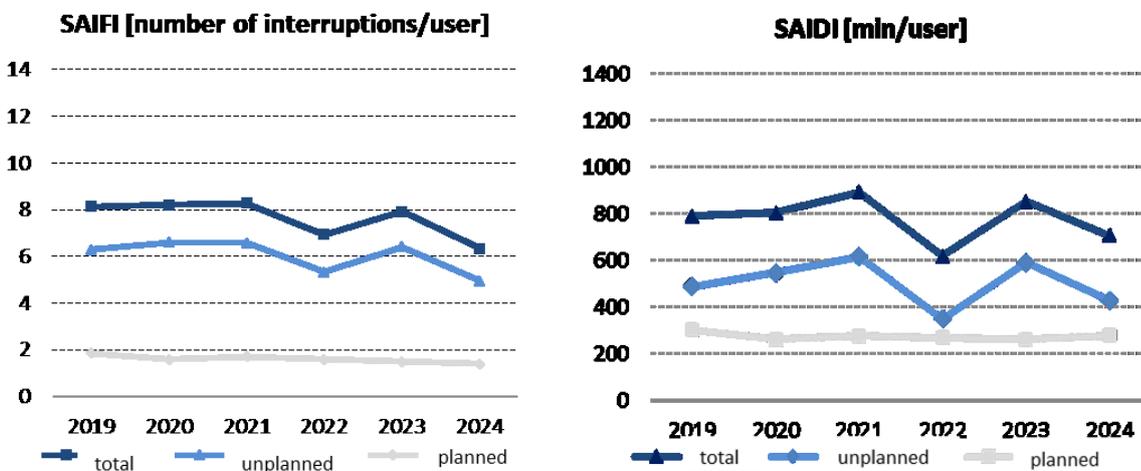


Figure 3-19: SAIFI and SAIDI for the period 2020 - 2024

¹⁰ calculated as a quotient of the cumulative number of interruptions and total number of users [number of interruptions/user]

¹¹ calculated as a quotient of cumulative duration of interruption and total number of users [min/user]

Regarding the continuity indicators for unplanned outages in the distribution network, Serbia saw improvements in 2024 compared to 2023, both in terms of average frequency and average duration of outages. According to the SAIFI indicator, the average frequency of unplanned outages decreased from 6.42 to 4.95 outages per customer. At the same time, according to the SAIDI indicator, the average duration of unplanned outages decreased by more than 160 minutes—from 590.12 minutes in 2023 to 427.21 minutes in 2024.

For planned outages, a decreasing trend in frequency was also observed, dropping from 1.49 to 1.39 outages per customer. However, the average duration of planned outages slightly increased—from 260.59 to 278.21 minutes.

Despite the improvements compared to the previous year, the achieved indicator values remain significantly higher than those in European Union countries. This highlights the need for a deeper analysis of the state of the distribution system in order to define and implement measures that will further improve supply reliability and reduce the number and duration of power outages.

The causes of unplanned interruptions and their share in the total number and duration of interruptions are indicated in Figure 3-20.

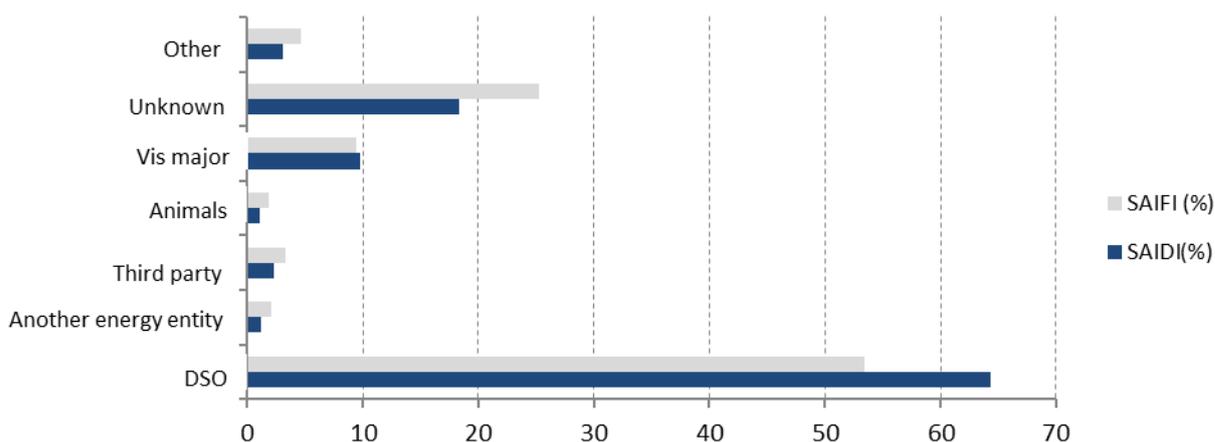


Figure 3-20: Share of causes of unplanned interruptions in SAIFI and SAIDI for 2024

The contribution of individual causes to the number and duration of unplanned outages in 2024 shows certain changes compared to 2023. The share of unplanned outages over which the distribution system operator (DSO) had no control (such as force majeure, animals, or third-party actions) has slightly decreased. On the other hand, there has been a significant reduction in the number of outages caused by the DSO itself—the SAIFI indicator for this category dropped from 3.67 to 2.65, while the SAIDI indicator decreased from 361.22 to 274.82 minutes per customer.

However, in 2024, the share of outages classified as “unknown” and “other” remains notably high. These categories account for over 29% of the total number of outages (SAIFI)—25.21% for “unknown” and 4.65% for “other”—while in terms of total outage duration (SAIDI) they represent more than 31% (78.35 + 12.94 minutes of the total 427.21 minutes). Compared to 2023, the share of outages with unknown causes has decreased overall, but it still represents the single largest challenge in analysing and addressing outage causes.

These data indicate that, despite the overall improvement in continuity indicators in 2024, there is still a need to enhance the system for recording and diagnosing outage causes. More precise identification of causes is a key prerequisite for planning and implementing more effective measures to reduce both the number and duration of outages in the distribution network.

3.7.2 Quality of electricity

The Rules on Monitoring Technical and Commercial Indicators and Regulation of Quality of Electricity Delivery and Supply defined the obligation of the system operators to record disruptions in the operations which cause the voltage and frequency to exceed the limits prescribed by the Decree on Electricity Delivery and Supply Conditions and Transmission, i.e. Distribution Network Code. In practice hitherto, system operators did not submit the reports on bad voltage conditions within the grid to the Agency, except in terms of users’ appeals which are being monitored within commercial quality area.

3.7.3 Commercial quality

Rules on Monitoring Quality Indicators define the data which system operators, i.e. suppliers register so as to enable commercial quality monitoring, i.e. monitoring compliance with the prescribed obligations as regards an energy entity’s obligations towards customers, i.e. services users.

Based on Agency’s request, energy entities submitted reports on commercial aspects of quality to the Agency regularly. That has provided the data for the calculation of some indicators of commercial quality on national level since 2009. After the market was opened in 2013 for customers connected to the transmission system and in 2014 for all customers, except households and small customers, there has been significant change in the necessity of monitoring commercial quality since the data on commercial quality are submitted to the Agency by all suppliers who supply final customers apart from by the system operator. In 2024, for the purpose of commercial quality monitoring, Distribution System Operator, closed distribution system operators, electricity suppliers and guaranteed/public supplier submitted quarterly reports and final annual report with available data to the Agency.

In terms of commercial quality monitoring, Distribution System Operator has improved the method of data recording considerably, but, even so, recording data on commercial quality has not still reached the expected level of reliability and accuracy which could provide a relevant analysis of the indicators in the national and international framework, especially in the field of data on call centres and metering device control. By having a greater number of customers entering the market, a necessity to monitor commercial quality introduced with licensed electricity suppliers as well was recognized. Further improvement of quality monitoring is also necessary with electricity suppliers, in particular with reference to customer care and the establishment of call centres.

For analytical purposes, the collected data were grouped in four main categories of biggest importance for customers which describe commercial quality. They include:

- 1) connection, load shedding and disconnection;
- 2) metering and billing;
- 3) removal of technical obstacles in delivery and
- 4) customer services.

The given data, especially those on average time for the performance of certain obligation are of indicative character since they were calculated on the basis of the available sets of data submitted by the distribution system operator. The analysis of these data proved that they do not include the whole territory of the distribution system since the data on the time of settling or removal of some of problems for certain segments of the distribution system are not available.

3.7.3.1 Connection, load shedding and disconnection

The Distribution System Operator data on applications for connection to the system in 2024 are given in Table 3-47 for different voltage levels, for medium voltage (MV), low voltage (LV) separately and in total.

Table 3-47: Connection applications by voltage levels and in total in 2024

Connection applications		MV	LV	Total	
Number	of submitted applications	1.516	36.702	38.218	
		686	20.894	20,718	
		5	202	178	
	of settled applications	113	3.286	20,004	
		804	24.269	40,900	
		403	11.917	12.320	15,212
%	Settled applications in comparison to the submitted ones	53	66	66	
	Applications approving connection in comparison to the number of settled ones	85	86	86	
	Settled applications within deadline (8 days for final customers, 15 days for producers)	50	49	49	
Average time	Necessary for settlement upon application Given in days (final customers/producers)	24/56	24/143	24/122	

Compared to 2023, the number of connection requests in 2024 increased by 19% for medium-voltage (MV) connections (from 1,269 to 1,516 requests), while for low-voltage (LV) connections, the number of requests decreased by 19% (from 45,455 to 36,702 requests).

The number of approvals granting connection increased in 2024 compared to 2023 by 17% at the medium-voltage level (from 587 to 686), while at the low-voltage level there was a slight increase of 4% (from 20,131 to 20,894).

The average time required to process connection requests for end customers in 2024 was approximately 24 days, which remains significantly above the statutory deadline of 15 days. For connection requests from producers, the average decision time was considerably longer, at 56 days for MV and 143 days for LV, representing a significant increase compared to 2023.

In 2024, a total of 52,638 objects were connected, which is 2,636 more than in 2023, when 50,002 objects were connected. At the medium-voltage level, connection performance slightly deteriorated—97% of objects (152 out of 157) were connected within the deadline, compared to 91% (91 out of 100) in 2023. The average connection time remained practically the same at 5.2 days.

At the low-voltage level, improvements were observed—89% of objects (46,620 out of 52,481) were connected within the deadline, compared to 81% in 2023. The average connection time also decreased from 8 days in 2023 to 7.2 days in 2024, representing a slight improvement.

Table 3-48: Connection of facilities/metering points by voltage levels in 2024

Connection		MV	LV	Total
Number	of connected facilities/metering points	157	52.481	52.638
	of facilities connected/metering points within 8 days' period	152	46.620	46.772
%	of facilities connected/metering points within 8 days' period	0	9	9
Average time – given in days	Necessary for connection since the day all the conditions are met	5	7	7

In 2024, a total of 15,003 electricity supply disconnections were carried out, representing a 59% decrease compared to 36,861 disconnections in 2023. The largest share of disconnections still relates to supplier-requested disconnections due to non-payment, with 8,584 in 2024 versus 30,970 in 2023, indicating a significant reduction.

The number of customer-requested disconnections also decreased, from 4,715 to 4,631, while disconnections for other reasons slightly increased from 1,176 to 1,788.

Of the total supplier-requested disconnections, 6,073 disconnections (71%) in 2024 were executed within the statutory 8-day period, representing a drop in efficiency compared to 2023, when 25,229 disconnections (82%) were carried out on time.

The average time to execute a disconnection at the request of an end customer decreased from 4.18 days in 2023 to 3.88 days in 2024, indicating an improvement in operational efficiency.

The number of complaints regarding disconnections in 2024 was 45, lower than in 2023 (83), while the number of substantiated complaints decreased from 10 to 2. The average time to resolve a complaint also slightly improved, from 1.99 days in 2023 to 1.80 days in 2024.

Regarding unjustified disconnections, 2 cases were recorded in 2024, compared to 10 cases in 2023, with the average time to restore supply remaining the same—1 day.

The number of cases where supply was restored after the reason for disconnection ceased was also lower in 2024 (12,080) compared to 2023 (21,996). The share of restorations within 24 hours remained similar—around 87% in 2024 versus 88% in 2023—while the average time to restore supply after the cause of disconnection ceased increased slightly from 2.03 to 2.23 days.

3.7.3.2 Metering and calculation

In 2024, regular inspections of measuring devices were planned for a total of 3,802,523 meters, representing 98.6% of the total number of meters (3,856,142). A total of 72,209 regular inspections were carried out, which is 1.9% of the planned inspections, lower than in 2023 when 3.3% of the planned inspections were performed. A total of 12,990 irregularities were detected, accounting for 18% of the inspections carried out, of which 9,817, or 76% of the detected irregularities, were resolved.

Extraordinary inspections at customer request were carried out in 77,228 cases, an increase compared to 2023 (68,093). Irregularities were detected in 11,990 cases (15.5%), of which 11,118 were resolved. At the request of energy entities, 104,425 inspections were performed, with 8,052 irregularities detected and 6,933 resolved. In total, 130,889 extraordinary inspections were conducted within 10 days, fewer than in 2023, when there were 144,568.

The number of registered cases of disappearance, malfunction, or damage of measuring devices in 2024 was 12,715, which is lower than in 2023 (18,828). Correct measurements were provided within two days in 11,997 cases, representing 94%—the same as the previous year. The average time required to ensure a correct measurement was 4 days, slightly higher than in 2023 (3.7 days).

The number of measuring devices replaced for calibration in 2024 was 348,875, while 3,211 devices did not meet laboratory conditions during testing. It is concerning that in 2024, 1,356,977 measuring devices were in use after the expiration of their verification seal, a slight decrease compared to 2023 (1,507,341), but still indicating the need for accelerated replacement and better control of meters.

In 2024, out of a total of 41,092,894 regularly issued bills, 402,564 bills were adjusted, representing 0.98% of all issued bills. This is an increase compared to 2023, when 0.75% of the total 40,599,290 issued bills were adjusted.

The largest share of adjusted bills in 2024 was due to incorrect readings—46.2% of all adjustments. Other reasons included financial and address errors (13.95%), incorrect measurement (2.5%), and other reasons (37.3%).

The number of complaints filed regarding bills in 2024 was 451,772, a slight increase compared to 2023 (409,022). Of the total number of complaints, 280,206 were upheld in 2024, more than in 2023 (262,839).

The most common reason for upheld complaints in 2024 was incorrect readings—53.3%, followed by incorrect measurement (23.9%), while incorrect billing accounted for 3.5%. The average time to resolve a bill complaint in 2024 was 4.25 days, a slight improvement compared to 2023, when it was 4.42 days. The reasons for bill adjustments and their share of the total adjusted bills are shown in Figure 3-21.

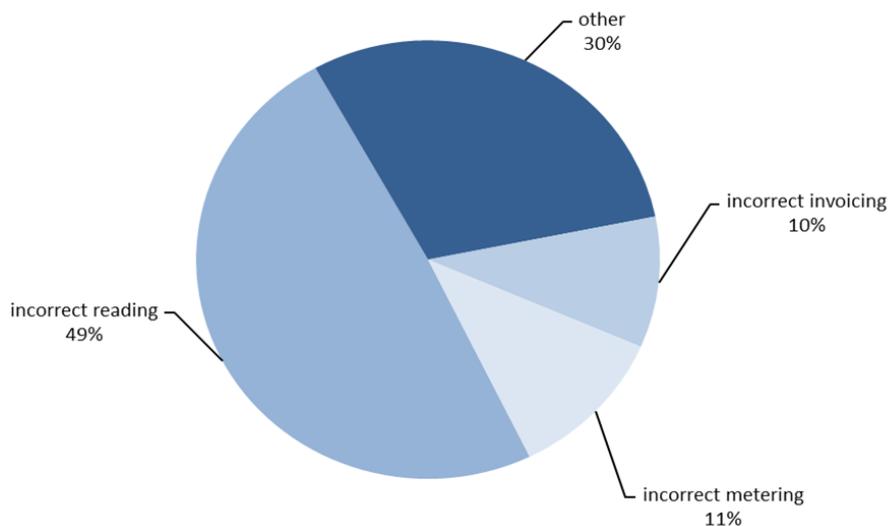


Figure 3-21: Reasons for bills corrections and their share in the total number of revised bills in 2024

3.7.3.3 Removal of technical disturbances in delivery

In 2024, a total of 642 customer requests were submitted for the resolution of voltage disturbances recurring over a long period, of which 472 requests (74%) were found to be justified. Voltage disturbances were resolved in 402 cases, representing 85% of all justified requests, an improvement compared to the previous year.

The average time from submitting a request to on-site voltage inspection and informing the customer was 6 days, while the average time from identification to resolution of voltage disturbances was 9 days. Additionally, 1,010 customers were recorded in areas with detected persistent voltage disturbances, indicating the need for systematic measures to address voltage quality issues in certain parts of the distribution network.

3.7.3.4 Customer services

Despite the progress that has been made on the improvement in providing services to customers in customers' and contact centres (call centres), data which could serve for the assessment of the quality of services in these centres are still unavailable in most cases due to the lack of adequate information support for data monitoring and registration. In their future activities on customer services quality monitoring, all energy entities, especially suppliers licenced for the supply of final customers as well, will have to start registering, i.e. improving the registration of these data. Since 2017, the distribution system operator has been submitting the data on the work of call centres. In 2024, the total number of registered calls addressed to the call centre of the distribution system operator was 278,160 which is on the same level as last year. Out of the total number of calls addressed to the call centre, 65% (181,390 calls) were made by phone. Average time spent waiting for the operator was 7 minutes which is the same as last year. The number of phone calls addressed to services on call for failure registration amounted to 256,208.

3.8 Security of electricity supply

The reliability and efficiency of the power system in the Republic of Serbia have been increased by investments into revitalization and modernisation of production, transmission and partly distribution capacities for several years. Even without new production capacities, the security of electricity supply was considerably higher. Regular investments in the construction of new transmission and distribution capacity units will further increase the security of electricity supply in the Republic of Serbia.

3.8.1 Consumption forecast

In November 2024, the National Assembly of the Republic of Serbia adopted the Energy Development Strategy of the Republic of Serbia until 2040, with projections until 2050. The main goal is to ensure a secure supply for end consumers

while reducing the negative impact of energy production, transformation, and consumption on the environment. One of the ways to achieve this goal is to reduce the amount of energy that needs to be delivered to consumers. This is primarily accomplished through the implementation of energy efficiency measures across all segments of energy flows.

3.8.2 Generation adequacy/prospects

Of the total electricity production in the Republic of Serbia, under average hydrological conditions, about two-thirds is generated in coal-fired thermal power plants, and one-third from hydropower potential. Since 2018, significant capacities for electricity production from renewable energy sources (RES) have begun to be connected to the transmission and distribution systems, so their share in total electricity production has been steadily increasing and amounted to approximately 4.9% in 2024.

The Energy Development Strategy of the Republic of Serbia until 2040, with projections until 2050, as well as the Integrated National Energy and Climate Plan of the Republic of Serbia for the period up to 2030 with a vision to 2050, foresee a significant increase in electricity production from renewable sources. A gradual phase-out of electricity production from fossil fuels is planned, which is necessary for the decarbonization process. However, supply security remains imperative, so the operational dynamics of thermal power plants will primarily depend on energy security, ensuring that it is never compromised.

Thermal power plant operations will be adjusted to current electricity demand. This means that some units will operate at maximum performance, while others may operate at reduced capacity or, in the later stages, be placed in reserve status. To align the operation of these plants with decarbonization goals, the application of carbon capture and storage technologies should also be considered. The possibility of operating at reduced capacity will provide flexibility within the overall electricity generation portfolio.

Of course, all of this assumes that the generation portfolio will include RES with a targeted (or higher) share in electricity production of 45% by 2030 and 73% by 2040.

All thermal units in *EPS JSC* are subject to the requirements of the Large Combustion Plants Directive 2001/80/EC (Large Combustion Plants Directive - LCPD) and the Industrial Emission Directive 2010/75/EU Industrial Emissions Directive - IED to the extent of limitation of the emission of polluting substances in the air – sulphur dioxide (SO₂), nitrogen oxides (NO_x) and powder substances. On October 24, 2013, the Energy Community Ministerial Council adopted decisions D/2013/05/MC-EnC and D/2013/06/MC-EnC which include rules for operation of large combustion plants which impose for PE *EPS* to reduce the emission of polluting substances into the air from existing combustion plants as of January 1, 2018 and by December 31, 2027 at the latest.

The National Emission Reduction Plan (NERP) was adopted by the Government of the Republic of Serbia in February 2020. By this plan, the Republic of Serbia was obliged to make significant moves in terms of reduction of emissions of polluting matters from large power plants. Its implementation aims at having emissions from large combustion plants harmonised with limit levels of emissions defined by the Directive on Industrial Emissions 2010/75/EU by December 31, 2027. NERP prescribes maximum allowed emissions of polluting matter (sulphur dioxide, nitrogen oxides and powder matter) from big thermal power plants on the annual level. According to NERP, it is planned to have gradual withdrawal of the oldest and the least energy-efficient thermal units until the end of 2027 due to old technology, high production costs and environment protection. In February 2019, the construction of desulphurisation plant in the Nikola Tesla A Thermal Power Plant in four units (A3, A4, A5 and A6) was initiated. Thereby, the emission of sulphur gases will be reduced ten times. In April 2024, this plant was put into operation. The remaining two units at the Nikola Tesla A Thermal Power Plant (A1 and A2) are scheduled for shutdown. Additionally, in 2024, work continued on the construction of flue gas desulfurization facilities for the Nikola Tesla B Thermal Power Plant, which began at the end of 2020. The work is expected to be completed during the next year. At the Kostolac B Thermal Power Plant, the flue gas desulfurization unit has been operational since 2022, and plans are in place to construct a desulfurization unit at the Kostolac A Thermal Power Plant as well.

In the previous years, activities were taken to reduce pollution also by the reconstruction of electric filters in all thermal power plants and thereby, the emissions of powder matter, i.e. PM (Particulate Matter) particles were lower (i.e. by 90%). In addition, the emission of nitrogen oxides within units A3, A4 and A5 was reduced in the Nikola Tesla A Thermal Power Plant and in the unit B1 in the Nikola Tesla B Thermal Power Plant and in Unit B2 in the Thermal Power Plant Kostolac B.

At the same time, within *EPS JSC* which is the dominant power producer in the Republic of Serbia, activities on revitalization and modernization of existing power plants are permanently realized. This will enable the increase both in terms of energy efficiency and installed capacity.

The most important activities during 2024 are the following:

- Construction of the new B3 thermal unit at Kostolac B Thermal Power Plant with a capacity of 350 MW, fuelled by Kostolac lignite, has been completed (investor: EPS AD);
- Construction of the first wind farm owned by EPS AD, with a capacity of 66 MW, in Kostolac;
- Continuation of the “Green Ring” project, which foresees planting trees around the Nikola Tesla A Thermal Power Plant and the Radljevo mining site to form a green ring; and
- Activities on the revitalization of Potpeć HPP, Bistrica HPP, Vlasina HPPs, and Đerdap 2 HPP.

3.8.3 Use of renewable energy sources

In May 2023, the Law on Amendments and Supplements to the Law on the Use of Renewable Energy Sources ("Official Gazette of the RS No. 35/2023") came into effect. Among other changes, responsibility for setting the maximum price in auctions was transferred from the Agency to the Government of the Republic of Serbia.

In June 2023, the Ministry of Mining and Energy held the first auction for wind (400 MW) and solar (50 MW) power plants. A total of 400 MW of onshore wind capacity was awarded across four projects, with winning prices ranging from €64.48 to €79.00 per MWh. Additionally, 25.2 MW of solar photovoltaic capacity was awarded through four projects, with winning prices ranging from €88.65 to €98.80 per MWh.

A Law on Energy Efficiency and Rational Use of Energy ("Official Gazette of RS", No. 40/21) was adopted in 2021, too. In line with new jurisdiction arising from this law, the Agency adopted a Methodology for Setting Market Premia – Highly Efficient Cogeneration ("Official Gazette of RS", No. 106/2021) and Methodology for Setting Feed-in Tariff – Micro and Small Cogeneration ("Official Gazette of RS", No. 106/2021) within the prescribed deadline. Both methodologies apply to power producers in highly efficient cogeneration, small cogeneration and micro-cogeneration units.

Since the adoption of the above given laws enabled the cease of validity of the Decree on Incentive Measures for Electricity Production from Renewable Energy Sources and Highly Efficient Combined Heat and Power Production ("Official Gazette of RS", No. 56/2016, 60/2017 and 91/2018) which prescribed incentive measures for the use of renewable energy sources in line with the type of the power plant and installed capacity and purchase price for the power produced thereby (feed-in tariff), the purchase price for privileged power producers was not set in the period between 2021 and 2024.

Table 3-49: Structure of prices and applied prices (VAT and duties free) of electricity withdrawn from privileged producers in 2024

Privileged producers category		Quantity	Amount	Price
		MWh	000 RSD	RSD/MWh
1	Small hydro power plants	189.789	2.573.981	13,56
2	Biogas-fired power plants	288.767	6.833.692	23,67
3	Wind-fired power plants	1.030.917	13.724.642	13,31
4	Solar power plants	9.992	273.909	27,41
4.1	Ground-mounted solar power plants	6.352	168.736	26,56
4.2	Roof-mounted solar power plants	3.639	105.173	28,90
5	Fossil fuel-fired combined heat and power plants	200.186	2.405.657	12,02
6	TOTAL	1.719.650	25.811.881	15,01

*Average purchase price of electricity sold by solar power plants is higher than the latest price prescribed by the Decree on Incentive Measures for Power Production from Renewable Energy Sources and Highly Efficient Combined Power and Heat Production ("Official Gazette of RS", No. 56/2016, 60/2017 and 91/2018), since most of privileged producers producing electricity in these power plants concluded contracts until 2016 when the purchase price amounted to more than 20 c€/ kWh.

In 2024, according to the Decree on Level of Separate Incentive Fee for Privileged Power Producers ("Official Gazette of RS", No. 3/2023), final electricity customers paid a separate fee for stimulating privileged electricity producers in the amount of 0.801 RSD/kWh.

Table 3-50: Incentive fee for privileged electricity producers 2020 – 2024

	RSD/kWh				
	2020.	2021.	2022.	2023.	2024.
RES incentive fee	0,093	0,437	0,801	0,801	0,801

Table 3-51: Level of collected privileged producers' incentive fee in 2024

	Collected (000 RSD, VAT free)
Revenue from electricity sale at acknowledged price	9.766.925
Revenue based on invoiced fee	25.006.699
- Guaranteed supplier	11.444.875
- Suppliers	13.526.281

- System operators	35.544
Revenues from financial securities activation	48.908
Revenues from invoices sent to privileged producers for negative market premium in line with FiP contracts	4.850
Reduction of revenue for acknowledged recovery of 2%	-695.472
Total	34.131.910

Table 3-52: Electricity withdrawn from privileged producers 2020 - 2024

Renewable energy source/ Fuel for combined production	MWh				
	2020	2021	2022	2023	2024.
Water flow	221,283	323,941	299,815	338.827	189.789
Fossil fuels (coal, heating oil (mazoute) and natural gas) – combined production	100,062	198,349	187,756	191.736	200.186
Biogas	179,897	244,143	252,699	226.173	288.767
Solar energy	9,043	10,494	10,899	9.671	9.992
Other	835,168	1,070,731	950,210	1.032.696	1.030.917
TOTAL	1,345,454	1,847,658	1,701,378	1.799.103	1.719.650

3.8.4 Construction of new transmission capacities

During 2024, activities were carried out in the transmission system related to routine maintenance and repairs of existing facilities operated by the transmission system operator EMS AD. In addition to maintenance, significant investment activities were implemented in 2024, including the construction of new transmission system facilities as well as the reconstruction and modernization of existing facilities. The investment activities also included the implementation of projects for connecting to the transmission system.

In 2024, the most significant investment work on power lines was the commissioning of two facilities: the 2x400 kV interconnection line TS Pančevo 2 – TS Rešica and the 110 kV line No. 1270 TS Bela Crkva – TS Veliko Gradište. In addition to these projects, intensive work continued on 13 other projects, which will carry on in the coming years.

EMS AD also participated in activities related to the construction of the first phase of the Trans-Balkan Corridor, specifically Sections 3 and 4.

The construction of Section 1 of the first phase of the Trans-Balkan Corridor (double 400 kV line TS Pančevo 2 – border with Romania) was completed in 2017. Since the construction of the transmission line on the Romanian side had not been completed, one system of the line was energized at 110 kV from TS Pančevo 2 and used to supply the southern Banat area ("Southern Banat Loop"), while the other system was energized at 400 kV and operated in no-load mode up to the border with Romania. At the end of 2024, the transmission line on the Romanian side was completed, and both lines were put into operation, creating a new interconnection line between the Republic of Serbia and Romania. This transmission line initiates the project of connecting Eastern and Western Europe via 400 kV lines across Serbia, further increasing the security of supply in the Republic of Serbia.

Regarding Section 2 (400 kV line TS Kragujevac 2 – TS Kraljevo 3, with the voltage level at TS Kraljevo 3 raised to 400 kV), construction was completed in December 2021, and the line was energized (no-load) from TS Kragujevac 2 in January 2022. Upgrades and reconstruction of TS 400/220/110 kV Kraljevo 3 were completed in June 2022.

For Section 3 (2x400 kV line TS Obrenovac – TS Bajina Bašta, with the voltage level at TS Bajina Bašta raised to 400 kV), during 2024 a loan agreement was concluded with the German development bank KfW, while in 2023 a request for an additional investment grant from WBIF was approved.

For Section 4 (2x400 kV interconnection line between Serbia, Bosnia and Herzegovina, and Montenegro), a loan agreement was concluded in 2024 with KfW.

In addition to the works on the construction of TransBalkans Corridor as a project of national and strategic interest, in 2024, EMS JSC also worked on the construction of another important capital project – project BeoGrid2025 which includes the construction of TS Beograd 50 with accompanying overhead lines of 400 kV and 110 kV voltage level as well as on the construction of the overhead line OHL 2x400 kV TS Belgrade 50 – connection switching station Čibuk 1. By the Government Decision of December 25, 2023, a programme for the allocation of funds of subsidies to EMS JSC for the realisation of this project was adopted. During 2024, the Regulation on the Establishment of the Spatial Plan for the Special-Purpose Area for the BeoGrid 2025 Project was adopted.

In 2024, works on the project Increase in Transmission Capacity of Bor Region were also continued. The Government of the Republic of Serbia adopted a decision that this is a project of particular interest for the Republic of Serbia. This project includes the construction of TS 400/110 kV Bor 6 and the construction of 400 kV overhead line.

The most significant investment works in high-voltage facilities (transformer stations and substations) during 2024 included: Reconstruction of the 400/110 kV/kV substations Kragujevac 2, Bor 2, Vranje 4, 400/220 kV/kV substation Obrenovac, 220/110 kV/kV substation Valjevo 3, 400/220/110 kV/kV/kV substations Pančevo 2 and Novi Sad 3, and the 110 kV switchyard Đerdap 2, as well as completion of reconstruction works at 400/110 kV/kV substation Pančevo 2, 400/110 kV/kV substation Bor 2, 400/110 kV/kV substation Srbobran, and 400 kV switchyard Đerdap 1.

During 2024, EMS AD issued numerous acts for the purpose of connection to the transmission system, the most significant of which were the connections of distribution substations. The reconstructed 110/35/20/10 kV/kV/kV/kV substation Šabac 1 was connected. Trial operation was launched for the transmission line bays at 110/20 kV/kV substation Ada and 110/35 kV/kV substation Bela Crkva, as well as transformers at 110/35/10 kV/kV/kV substations Kruševac 4, Leskovac 1, Mladenovac, Ivanjica, 110/35 kV/kV substation Valjevo 1, and 110/35 kV/kV substation Zaječar 2.

The Law prescribes that the transmission system operator is obliged to adopt a transmission system development plan once in two years for the following 10-year period and to adopt a plan on investments into the transmission system for the following three-year period. The Agency approves these plans.

The transmission system development plan is based on the amended version of the former one, bearing in mind the experience in transmission network operation and maintenance. The plan is being harmonised with the plans of neighbouring distribution system operators and plans of transmission system operators. Since the transmission System Operator of the Republic of Serbia belongs to the synchronised area of “Continental Europe”, their active participation in the preparation of a Pan-European Ten Years Network Development Plan which is drafted within the ENTSO-E association.

During 2023, EMS AD submitted a draft of the Transmission System Development Plan for the Republic of Serbia for the period 2023-2032 to the Agency. In accordance with the law, the Agency put the plan out for public consultation from July 4 to August 5, 2023. The Agency gave its consent to this plan on March 28, 2024. EMS AD, within the Transmission System Development Plan for the period 2023–2032, planned the construction of new transmission network facilities, as well as the adaptation or reconstruction of existing transmission facilities, in order to eliminate current and expected congestions and increase the efficiency of the transmission system.

For the 400 kV transmission network, the Development Plan for the period 2023–2032 defines interconnection projects and internal network projects. These projects are of regional and pan-European importance for the transmission of electricity and directly contribute to the long-term energy security of the Republic of Serbia.

The most significant planned new interconnection project within the Transmission System Development Plan for 2023–2032 is the interconnection between the Republic of Serbia, Bosnia and Herzegovina, and Montenegro, which represents Section 4 of the first phase of the Trans-Balkan Corridor.

Among the planned projects for the internal 400 kV network, the following can be highlighted:

In the region of western Serbia, the upgrade of the 220 kV network to the 400 kV voltage level, which involves raising the Bajina Bašta substation to 400 kV and constructing a new double 400 kV transmission line between Obrenovac and Bajina Bašta substations, representing Section 3 of the first phase of the Trans-Balkan Corridor;

The BeoGrid2025 project, which includes the construction of Belgrade 50 substation with the associated 400 kV and 110 kV transmission line layouts, as well as the 2x400 kV transmission line from Belgrade 50 substation to Čibuk 1 switchyard;

A new 400/110 kV/kV substation in the southern Banat region;

A new 400/110 kV/kV substation north of Niš;

Reconstruction of Smederevo 3, Šabac 3, Valjevo 3 substations, the switchyard for Đerdap 2, and others.

All new projects will contribute to the security of supply and reliability of the entire electricity system of the Republic of Serbia, while the implementation of the planned projects will also depend on financing conditions, particularly for the part of the Trans-Balkan Corridor relating to the interconnection between Serbia, Montenegro, and Bosnia and Herzegovina.

Regarding the 220 kV transmission network, EMS AD’s strategic goal is the gradual phase-out of this network, i.e., its upgrade to the 400 kV voltage level, which will largely be carried out as part of the Trans-Balkan Corridor project.

Regarding the development of the 110 kV transmission network, the Development Plan for 2023–2032 provides solutions for existing areas where electricity supply security is insufficient, particularly in the Raška and southern Banat regions, as well as in radially supplied areas. The development of the 110 kV network is especially important for alignment with the distribution system development plan to enable the realization of projects connecting transmission and distribution system facilities.

During 2024, EMS AD submitted to the Agency a draft Investment Plan for the Serbian transmission system for the period 2024–2026. The Agency gave its consent to this plan on December 6, 2024.

In the three-year Investment Plan, the investment needs are presented by year and described from a national, regional, and European perspective. Their implementation significantly impacts the increase of transmission capacities in the regional network, and consequently the development of the electricity market in Europe. From a national perspective, the plan covers the needs for constructing energy infrastructure to increase transmission capacity, develop the national market, enhance

the reliability of the transmission system and security of supply, and increase the potential for connecting new conventional and renewable energy sources.

The Energy Law stipulates that the Agency monitors and evaluates the implementation of the ten-year Transmission System Development Plan and provides an assessment of the investments made in its annual report. The Agency conducted the monitoring process for 2024. In the 2024–2026 Investment Plan, the transmission system operator planned a total of 93 projects for 2024, of which four projects are of particular importance under the Energy Law. Additionally, the plan includes 51 connection projects, none of which were completed in 2024.

Table 3-53 shows the total planned and realized value of investments by the transmission system operator according to activity type for 2024, in accordance with the adopted Investment Plan.

Table 3-53: Planned and realized level of investments into transmission network development according to activity type for 2024

Activity type	Planned value	Realised value	Index
Construction of a new facility	4.174.127	2.916.057	70
Reconstruction, adaptation and extension	3.842.685	2.922.289	76
Other investment in the transmission system	41.948	953	2
Total	8.058.760	5.839.299	72

Table 3-54 shows the total planned and realized value of investments of the transmission system operator by voltage level for 2024, in accordance with the adopted Investment Plan.

Table 3-54: Planned and realized level of investments into transmission network development according to voltage level for 2024

Voltage level	Planned value	Realised value	Index
110 kV	4.312.180	3.514.467	82
220 kV	1.006.073	1.269.739	126
400 kV	2.740.507	1.055.093	39
Total	8.058.760	5.839.299	72

3.8.5 Distribution system operator's investment activities

In 2024, activities on regular maintenance and overhaul of existing facilities of the distribution system operator *Elektro distribucija Srbije* were performed. On the other hand, main investment activities in 2024 were related to the construction of new facilities as well as to the reconstruction and modernization of existing facilities. In addition to the above mentioned, investment activities also included the realization of projects on connections to the distribution system.

Within the distribution system, the following works were ongoing in 2024:

- On transformer stations:
Work continued on the construction and reconstruction of transformer stations.
- on distribution lines:
Construction and reconstruction of a set of distribution lines within the distribution medium voltage network;
Construction of low voltage network, in line with the local growth in electricity consumption and transmission capacities development as well as with the need to upgrade quality of supply;
- metering and management:
Upgrade of metering devices and further development of remote reading system was performed but not to the planned scale.

The Law prescribes that the distribution system operator is obliged to adopt the distribution system development plan once in two years for the following 10-year period and to adopt a plan on investments into the distribution system for the following three-year period. The Agency approves these plans. The distribution system development plan is based on the amended version of the former one, bearing in mind the experience in distribution network operation and maintenance. The plan is being harmonised with the transmission system development plan.

In 2023, *Elektro distribucija Srbije* submitted to the Agency a draft of the Distribution System Development Plan for the Republic of Serbia for the period 2023-2032. *Elektro distribucija Srbije* submitted to the Agency, during 2023, a proposal for

the Distribution System Development Plan of the Republic of Serbia for the period 2023–2032. The Agency granted its approval of this plan on 4 July 2024.

Based on an analysis of the condition of the distribution network, taking into account forecast consumption and the expected commissioning of new generation units, the distribution system operator (DSO) planned, within the Distribution System Development Plan for the period 2023–2032, the construction of new distribution network facilities as well as the adaptation or reconstruction of existing facilities. These measures are intended to eliminate existing and anticipated congestion and to increase the efficiency of distribution system operation. The Distribution System Development Plan for the period 2023–2032 is harmonized with the Transmission System Development Plan for the period 2023–2032.

On the basis of the identified network development needs, individual distribution network development plans for the period 2023–2032 were prepared for each of the five distribution areas (DA): DA Kraljevo, DA Niš, DA Kragujevac, DA Belgrade, and DA Novi Sad. For each DA, a list of projects was established, comprising facilities to be constructed or reconstructed over the next ten-year period. All projects are categorized as follows: construction of 110/x kV/kV substations, reconstruction of 110/x kV/kV substations, construction of 35/x kV/kV substations, reconstruction of 35/x kV/kV substations, and construction and reconstruction of 10 (20) kV and 0.4 kV networks.

During 2023, Elektrodistribucija Srbije also submitted to the Agency a proposal for the Investment Plan in the Distribution System of the Republic of Serbia for the period 2023–2025, which the Agency approved on 4 July 2024. On 19 December 2024, Elektrodistribucija Srbije submitted to the Agency a proposal for the Investment Plan in the Distribution System of the Republic of Serbia for the period 2024–2026, which is to be considered for approval.

The Law prescribes that, in addition to the Distribution System Development Plan and Distribution System Investment Plan, the DSO is obliged to adopt and submit the plan of transfer of metering devices, metering and switching boards, installation and equipment in metering and switching boards, connection lines and other devices which are within the connection of customers' facilities, i.e. producers' facilities to the Agency for approval. The DSO complied with this obligation and on September 13, 2021, the DSO submitted the Plan for Transfer of Metering Devices for 2021-2024 to the Agency. On September 24, 2021, the Agency approved this plan. During 2024, a total of 55,991 connections were taken over, representing 8.2% of the planned number for 2024.

3.8.6 Reduction of losses within the distribution network

In 2024, there was a decrease in losses in the distribution network which decreased by 0.48% in comparison to 2023 losses and they amount to 10.37% of electricity withdrawn into the distribution system. The activities on the reduction of losses have to be intensified in the future since it is necessary to bring losses to technically acceptable level. Regular activities on the metering devices checks and on the transfer of metering devices and connection lines have to be performed in line with legal obligations and adopted plans. In 2024, checks were made only on 19.8% of planned metering devices.

In the future, it is necessary to implement measures which should contribute to loss reduction and which are also envisaged by the DSO loss reduction plan and which include:

- construction of new network facilities, overhead lines and transformer stations;
- transfer of metering devices, switchboards, connection lines, installation and equipment in the switchboard and other devices within the connection in the facilities of existing customers and their operation in line with technical regulations and distribution system code;
- procurement and installation of new meters with most of customers;
- modernisation of the remote measuring system and consumption management;
- improvement of technical and business system for calculation and collection of electricity bills;
- activating existing devices and construction of new ones for reactive power compensation and
- improvement of cooperation with state bodies as regards electricity theft prevention.

3.8.7 Smart metering systems

The Law prescribes that the transmission system operator and the distribution system operator draft a plan for the implementation of economically justified types of advanced metering systems and they submit it to the Agency for the purpose of issuance of an opinion.

Since the transmission system operator has smart meters installed on all delivery points, they did not draft this plan and submit it to the Agency.

Table 3-55 indicates the total number of meters owned by the transmission system operator in 2024. All meters are smart with following functionalities: remote reading by the TSO, remote reading by a user via adequate application, two-direction metering (production and consumption), tariff management and data preservation.

Table 3-55: Smart meters within the transmission system in 2024

Voltage level	400kV	220kV	110kV
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Number of meters installed at customers' facilities	0	6	96
Number of meters installed at producers' facilities	11	11	42
Number of meters installed at the TSO and closed DS	0	0	457
Number of meters installed on interconnectors	8	5	13
Total	19	22	608

In 2024, the distribution system operator did not submit the plan for the implementation of economically justified types of advanced metering systems to the Agency.

Table 3-56 indicates the total number of meters owned by the distribution system operator. The total percentage of smart meters installed at customers' facilities amounts to 18.76% (for all voltage levels), while the total percentage of smart meters installed at producers' facilities amounts to 100.00% (for all voltage levels).

Table 3-56: Smart meters within the distribution system in 2024

	Voltage level	35, 20, 10kV	0.4kV		Households	Public lighting	Total
			Customers whose capacity is metered	Customers whose capacity is not metered			
Meters installed at electricity customers' facilities	Electromechanical	0	24	16	163.664	2.005.455	2.181.550
	Digital	0	5.725	42.972	215.841	1.403.106	1.677.876
	Total	0	5.749	42.988	379.505	3.408.561	3.859.426
	Smart meters	0	5.303	39.206	75.760	490.184	614.696
	Percentage of digital meters in comparison to the total number	0,00%	92,24%	91,20%	19,96%	14,38%	15,93%
Meters installed at electricity producers' facilities	Voltage level	35kV	20kV	10kV	0,4kV		Total
	Electromechanical	0	0	0	0		0
	Digital	41	59	133	181		414
	Total	41	59	133	181		414
	Smart meters	41	59	133	181		414
Percentage of digital meters in comparison to the total number	100,00%	100,00%	100,00%	100,00%			100,00%

Among customers, the most widely installed are advanced meters that simultaneously provide two functionalities: remote reading by the DSO and remote connection/disconnection. Such meters account for 13.46% of the total number of all installed customer meters. Of the total number of installed customer meters, 2.46% have only one functionality, namely remote reading by the DSO.

In case of producers, the greatest number of smart meters include three functionalities and such meters account for 46.86 out of the total number of all meters installed at producers' facilities. 33.33% of the total number of all installed meters for producers include only remote reading by the DSO. 1.45% of meters include only remote reading by customers (producers) while 18.36% of meters includes five functionalities (remote reading by the DSO, remote reading by a customer (producer), remote turn on/off, two-direction metering and data preservation).

It is essential that the distribution system operator complies with the given legal obligation in the future and to adopt the plan for the implementation of economically justified types of advanced metering systems. Advanced metering systems and advanced networks will enable higher reliability and quality of electricity delivery. They will also stimulate better consumption management and more dynamic market and thereby reduce technical and commercial electricity losses to a great extent.

4. NATURAL GAS

4.1 Sector structure and capacities

4.1.1 Organisational and ownership structure

Gas sector organisational structure at the end of 2024 is given in Figure 4-1. *Naftna industrija Srbije* (Petroleum Industry of Serbia) JSC, Novi Sad (hereafter NIS JSC) is the only natural gas producer. Natural gas production is not a regulated activity.

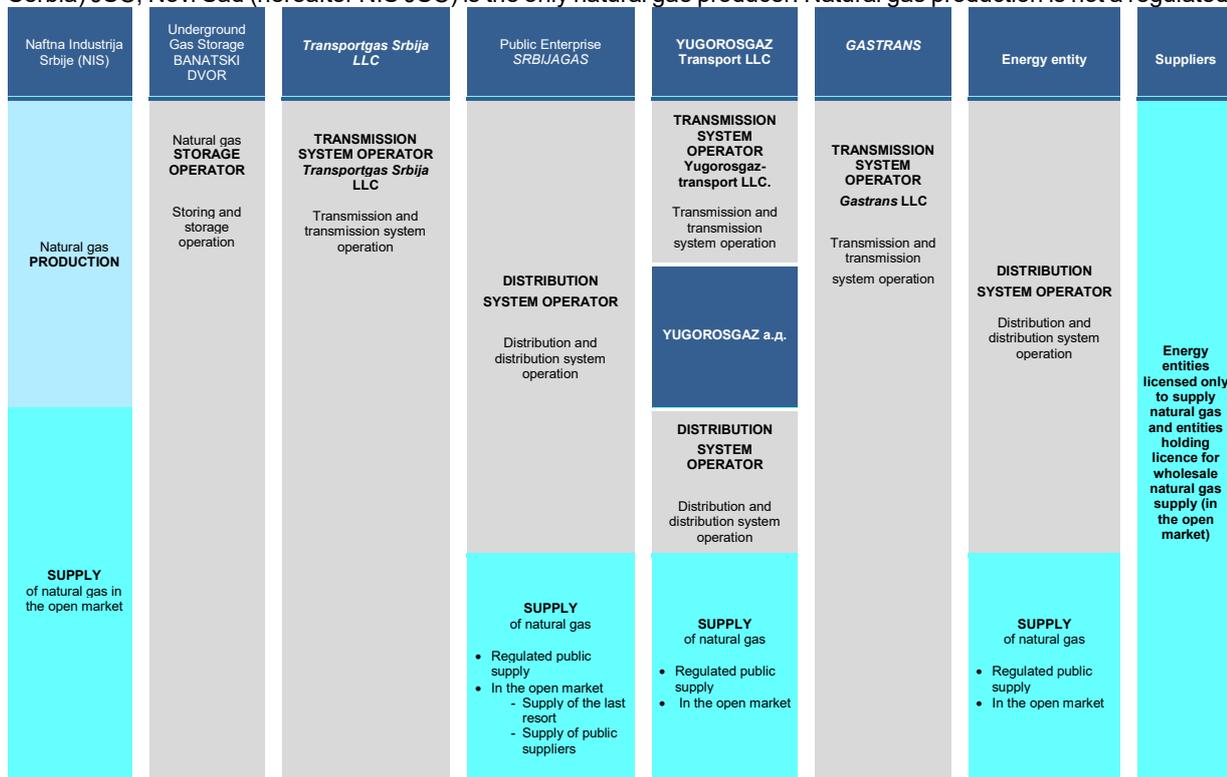


Figure 4-1: Organisational structure of the natural gas sector at the end of 2023

In Serbia, natural gas transmission and transmission system operation are performed by three transmission system operators (TSO): *Transportgas Srbija* LLC, Yugorosgaz-Transport LLC, Niš and *Gastrans* LLC, Novi Sad. In 2015, TSO Yugorosgaz-Transport LLC completed legal unbundling from a vertically integrated company „Yugorosgaz“ JSC Belgrade. The functional unbundling asked for prior amendment of the interstate treaty. In PE *Srbijagas*, decisions on legal and functional unbundling of TSO – *Transportgas Srbija* LLC from the parent company were adopted. Since 2021, *Transportgas Srbija* LLC has been performing natural gas transmission and transmission system operation.

On June 9, 2021, the single member of the company - PE *Srbijagas* was deleted from the Serbian Business Registers Agency. Instead, the Republic of Serbia was registered as the only member of the company “*Transportgas Srbija*” LLC with 100% of shares. In October 2021, the Government approved the Decision on Amendments to the Decision on Foundation of Company “*Transportgas Srbija*” LLC which created conditions for *Transportgas Srbija* LLC to operate independently from PE *Srbijagas* which continued operating in the field of natural gas supply and natural gas public supply.

On 21 December 2023, the Republic Commission for Energy Networks, which was established in October 2023 in accordance with the Law on Amendments to the Energy Law (“Official Gazette of the Republic of Serbia”, No. 62/23), adopted a Decision granting consent to the amendments and supplements to the Decision on the establishment of the limited liability company “*Transportgas Srbija*” d.o.o. This decision followed from the transfer, under the said law, of the authority to supervise the natural gas transmission system operator founded by the Republic of Serbia to this Commission, in accordance with the law.

Within the exemption procedure, the Agency approved the exemption from ownership unbundling, third party access and regulated prices for 20 years period to *Gastrans* LLC company. In 2019 and 2020, *Gastrans* LLC constructed gas interconnector (Zajecar – Horgos) in order to initiate natural gas transmission in 2021. Following the connection to the transmission system of Hungary, this gas interconnector became fully operational starting from October 1, 2021 when natural gas started being transmitted from Bulgaria direction in order to cover the demand in the Republic of Serbia and in order to enable natural gas transit from the border with Bulgaria up to the border with Hungary.

Distribution and distribution system operation are performed by 31 distribution system operators (DSOs) as it was the case last year. In addition to PE *Srbijagas*, and *Yugorosgaz* JSC, natural gas distribution and distribution system operation are performed by other 29 companies among which most of them are owned by municipalities and towns, some of them are

with miscellaneous ownership and some of them are private. All DSOs, except for DSO – PE *Srbijagas*, in addition to performing natural gas distribution, within the same legal person, they can also perform natural gas supply at regulated prices and supply in the open market since they have less than 100,000 connected final customers which is why they are not obliged to execute legal unbundling between distribution and supply.

At the end of 2024, there were 58 energy entities holding licence for natural gas supply in total and 23 of them were active. Natural gas public supply of final customers at regulated prices was performed by 31 public suppliers which also perform natural gas distribution. In 2024, 6 suppliers were awarded with the licence for wholesale natural gas supply. At the end of 2024, there were 11 of them, but these suppliers were not active during 2024.

In line with the law, the Government of the Republic of Serbia appointed PE *Srbijagas* to be the supplier of public suppliers and the natural gas supplier of the last resort for 2023 as well.

Storage operator performs natural gas storage and storage operation. There is only one storage, Natural Gas Underground Storage Banatski Dvor, LLC, founded and owned by PE *Srbijagas* (49%) and Gazprom Germania (51%). This was defined on the basis of the Agreement of the Republic of Serbia and the Government of the Russian Federation on Cooperation in Oil and Gas Industry concluded in January 2008 (Law on Confirmation of the Agreement of the Republic of Serbia and the Government of the Russian Federation on Cooperation in Oil and Gas Industry “Official Gazette of RS – International Agreements, No. 83/08).

4.1.2 Production, transmission, distribution and storage capacities

4.1.2.1 Production

Natural gas production in Serbia is realized in Vojvodina area and the only natural gas producer is NIS. After preparation process which makes produced gas applicable to final customers, produced gas is delivered to 9 points into the transmission system while much smaller quantities (around 2.3% of produced volume) are delivered to 4 points into the distribution system. The total annual production which was delivered to the transmission and distribution system in 2024 amounted to 1,815 GWh which is 11.2% less than last year production volume. After significant growth in 2011 and 2012, natural gas production has been decreasing year after year since 2013

Table 4-1: Natural gas production in Serbia in period 2015 – 2024 in GWh

Production/Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024.
Delivered to transmission system	4,330	3,981	3,755	3,355	2,913	2,627	2,226	2,016	1,989	1.774
Delivered to distribution system	103	113	72	82	92	92	92	54	54	41
Total production (million m ³)	4,433	4,094	3,827	3,437	3,005	2,719	2,318	2,070	2,043	1.815
Variation in comparison to (n-1) year	-7.5	-7.6	-6.5	-10.2	-12.5	-9.6	- 14.7	-12.0	-1.3	- 11,2%

Of the total quantities delivered to the transmission and distribution systems in 2024, 37 GWh (2%) of natural gas was sold to other suppliers, and 20 GWh was purchased by the transmission system operator due to imbalance, while the remaining quantities of natural gas were consumed by NIS for its own needs, primarily at the Pančevo Oil Refinery. To meet its own natural gas consumption of 2,699 GWh, NIS purchased 941 GWh of natural gas from PE *Srbijagas* in 2024.

4.1.2.2 Transmission

At the end of 2024, the length of the transmission system where *Transportgas Srbija* LLC performs the activity amounted to 2,606 km in north and central Serbia, while the length of the *Yugorosgaz transport* LLC transmission system amounted to 125 km in southeast Serbia. *Gastrans* LLC performs the transmission activity within 402 km of gas pipeline from the border with Bulgaria up to the border with Hungary as of January 1, 2021. If one considers the length of transmission gas pipelines in km as the criterion, *Transportgas Srbija* LLC operates 83.2% of the transmission gas pipeline network in Serbia, *Gastrans* LLC 12.8% and *Yugorosgaz-transport* LLC remaining 4.0%. The total length of transmission gas pipelines in Serbia is indicated in Table 4-2).

In December 2023, the new Dimitrovgrad - Niš gas pipeline, with a length of 109 km and a diameter of DN 700, was connected to the transmission system of the Bulgarian transmission system operator at Kalotina on one side and to the transmission system of *Yugorosgaz-Transport* LLC at Trupale near Niš on the other side. The Dimitrovgrad - Niš pipeline is bidirectional. The construction of this pipeline enhances the security of natural gas supply and allows for the diversification of natural gas supply sources.

Table 4-2: Length of the transmission gas pipelines in Serbia in 2015 - 2024

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024.
Network length, km	2,423	2,423	2,459	2,464	2,464	2,539	3,005	3,028	3,131	3.133

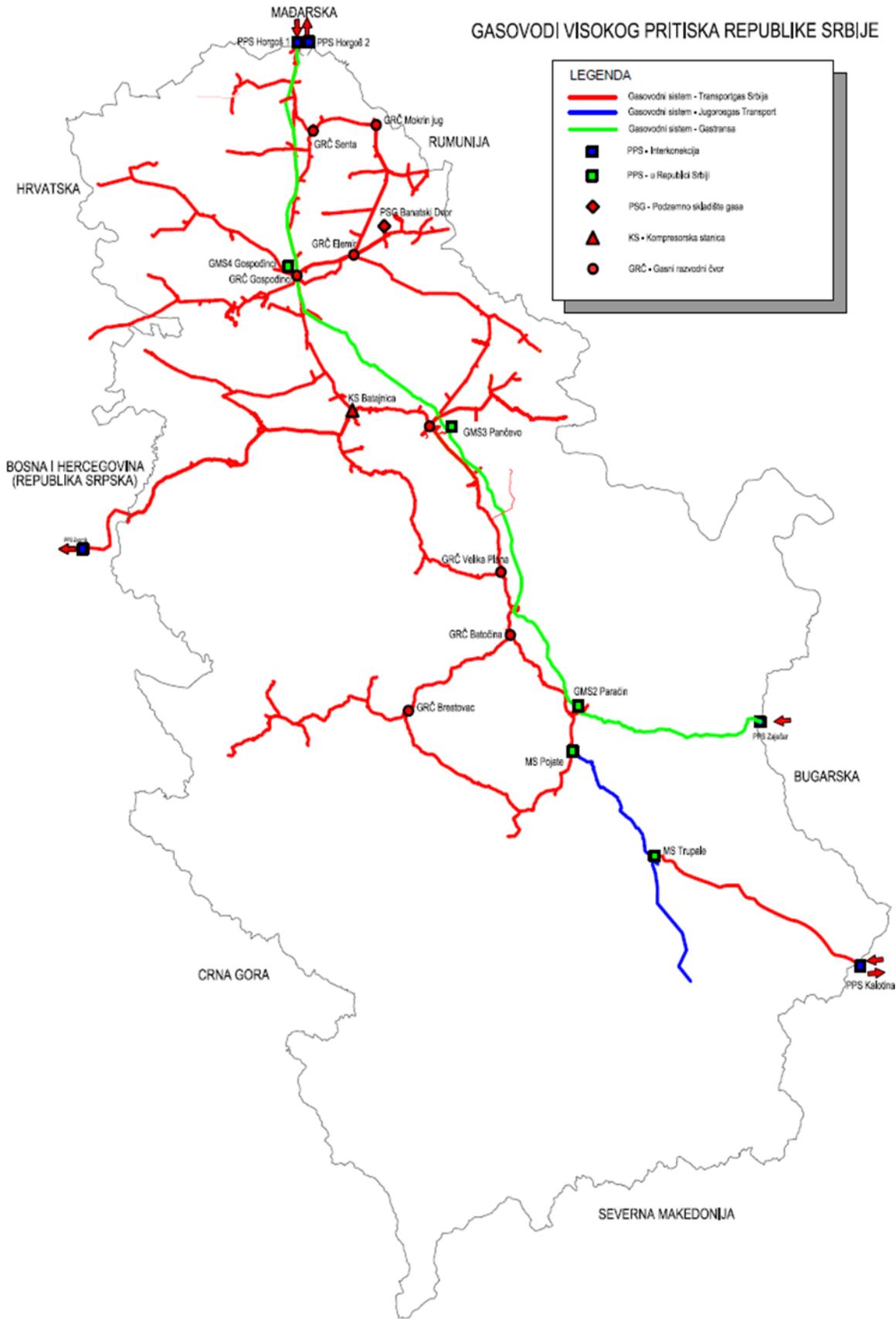
Over 70% of population in Serbia live in areas with constructed transmission gas pipelines which represent the precondition for further gas system development, i.e. for the construction of distribution gas pipelines and natural gas consumption growth.

Table 4-3: Important technical characteristics of the transmission system

Main technical characteristics of the transmission system	<i>Gastrans</i> LLC	<i>Transportgas Srbija</i> LLC	Yugorosgaz-transport LLC
Capacity (GWh/day)	≈ 355	≈ 245	≈ 23
Pressure (bar)	66-75	16 - 75	16 - 55
Length (km)	402	2,606	125
Diameter	DN 1200	DN 150 - DN 750	DN 168 - DN 530
Compressor station, power (MW)	19,287	4.4	-
Number of entries into the transmission system	1	15	2
From another transmission system	1	5	2
From production fields – local gas	0	9	-
From the storage	0	1	-
Number of exits from the transmission system	4	251	7
Metering and regulating stations on transmission system exit	0	247	6
Overtaking stations	4	3	1
Entry into Yugorosgaz transmission system	0	2	-
Interconnector towards BiH	0	1	-
Exit into Transportgas Srbija transmission system	3	0	1
Interconnector towards Hungary	1	0	0
Natural gas storage	0	1	0

Table 4-3 indicates the most important technical characteristics of the transmission systems managed by *Transportgas Srbija* LLC, *Gastrans* LLC and Yugorosgaz transport LLC.

GASOVODI VISOKOG PRITISKA REPUBLIKE SRBIJE



LEGENDA	
—	Gasovodni sistem - Transportgas Srbija
—	Gasovodni sistem - Jugrosgas Transport
—	Gasovodni sistem - Gaztransa
■	PPS - Interkonekcija
■	PPS - u Republici Srbiji
◆	PSG - Podzemno skladište gasa
▲	KS - Kompresorska stanica
●	GRČ - Gasni razvodni čvor

Figure 4-2: Natural gas transmission system of the Republic of Serbia

4.1.2.3 Distribution

At the beginning of 2024, 31 distribution system operators performed natural gas distribution and distribution system operation. There is one more licenced distribution system operator but it has not started performing the activity yet. The length of the distribution network in Serbia increased by 23.89% from 2020 to the end of 2024, reaching 24,633 km (excluding connections), thereby creating conditions for the connection of new customers. Compared to 2023, the network was extended by 994 km, representing an increase of 4.04%. In 2024, the largest percentage increase in network length was achieved by DSO Interklima, amounting to 7.20%, followed by DSO Yugorosgaz with an increase of 6.33%. The third-largest increase in the length of the distribution network was recorded by Srbijagas, which operates 63.93% of the total distribution network in Serbia, with an increase of 6.05%. For 14 DSOs, the length of the distribution network remained unchanged compared to 2023.

Table 4-4: Length of the distribution network in Serbia in 2020 - 2024

	2020	2021	2022	2023	2024.
Length of the distribution network	19,883	20,831	22,172	23,639	24.633

The number of active connections (delivery points) within distribution networks amounts to 362,983. In comparison to the previous year, it has been increased by 20,143 connections (i.e. by 5.55%).

Table 4-5: Length of distribution network and number of delivery points at the end of 2024

No.	Natural gas distributor	Distribution grid length, m	Number of active connections
1	7. Oktobar, Novi Kneževac	55.570	1.676
2	Beogas, Belgrade	525.433	14.572
3	Beogradske elektrane, Novi Beograd	338.590	5.628
4	Boss construction, Trstenik	9.733	92
5	Čoka, Čoka	27.195	854
6	Drugi oktobar, Vršac	200.843	13.631
7	Elgas, Senta	68.075	2.280
8	Gas – Feromont, Stara Pazova	510.550	18.767
9	Gas – Ruma, Ruma	585.971	10.124
10	Gas, Bečej	198.197	2.618
11	Gas, Temerin	266.500	7.639
12	Graditelj, Srbobran	150.200	2.730
13	Ingas, Indija	368.597	12.068
14	Interklima, Vrnjačka Banja	117.534	1.580
15	Komunalac, Novi Bečej	121.158	2.727
16	Kovin – Gas, Kovin	333.694	4.948
17	Loznica - Gas, Loznica	192.660	3.719
18	Novi Sad – Gas, Novi Sad	2.478.464	53.904
19	Polet, Plandište	239.300	3.696
20	Resava Gas, Svilajnac	67.445	674
21	Cyrus energy, Belgrade	22.090	2.188
22	Sigas, Požega	68.052	631
23	Sombor – Gas, Sombor	182.000	3.445
24	Srbijagas, Novi Sad	15.747.124	155.737
25	Srem - Gas, Sremska Mitrovica	293.134	7.529
26	Standard, Ada	43.280	1.349
27	Suboticagas, Subotica	463.858	14.850
28	Toplana – Šabac, Šabac	170.381	3.919
29	Užice – gas, Užice	213.772	3.570
30	Vrbas – Gas, Vrbas	189.158	2.527
31	Yugorosgaz, Beograd	384.445	3.311
	TOTAL	24.633.003	362.983

Plan for the transfer of metering devices, i.e. metering and regulation stations

The 2014 Energy Law ("Official Gazette of RS", No. 145/14) Article 261, item 9) prescribed the obligation of a DSO to adopt a plan for transfer of metering devices, i.e. metering and regulation stations (MU/MRS) in the facilities of current customers, i.e. producers and to report to the Ministry of Mining and Energy and the Agency twice a year on planned and taken activities on the realisation of the transfer plan. The goal is to transfer (take over) all MD/MRS until December 31, 2020.

At the moment of the entry into force of the Law, out of 33 DSOs, all MD/MRS in 17 of them are owned by the operator. In the remaining 16 DSOs, around 48% of MU/MRS (around 92,000 out of 195,000) were not owned by DSOs. One DSO was under bankruptcy and it did not perform DSO activity, and therefore, 15 of them submitted their transfer plans which were approved by the Agency.

Following the expiry of the legal deadline, out of the planned 92,641 MD/MRS, 54,839 of them or 59.20% of them were transferred. Only 2 DSOs complied with their legal obligation and took over all planned devices, i.e. Sombor-Gas, Sombor and "Loznica-Gas" LLC Loznica.

The Law on Amendments to the Energy Law ("Official Gazette of RS", No. 40/21) which was adopted in 2021 prescribes that the natural gas distribution system operators should take over all metering devices, i.e. metering-regulation stations until December 31, 2024 at the latest (Article 152 of the Law) and that they are obliged to report to the Agency on the realisation of plans until the prescribed deadline.

In accordance with the provisions of the Law, the takeover plans (which include the annual dynamics of meter device takeovers through 2024) to which the Agency has granted approval were submitted by eight ODSs: (JCP "Čoka" Čoka, JP "Gas Ruma" Ruma, DOO "Gas" Bečej, JP "Gas" Temerin, JKP "Graditelj" Srbodran, JP "Ingas" Inđija, JP "Kovin Gas" Kovin, and JP "Polet" Plandište). Meanwhile, "Novi Sad-Gas" informed the Agency that it has taken over all devices in its system while "Novi Sad-gas" informed the Agency that it had taken over all devices in its system, so there was no need to submit a plan. The DSO JKP "Čoka" informed the Agency that all metering devices had been taken over by the end of 2024. The remaining five ODSs that have not fulfilled the legal obligation to draft the transfer plan ("Gas-Feromont" AD Stara Pazova, JP "Srbija Gas" Novi Sad, JP "Srem Gas" Sremska Mitrovica, "Komunalac" Novi Bečej, and JP "Vrbas-Gas" Vrbas) submitted an overview of the total number and the status of the takeover of MD/MRS up to the end of 2024.

4.1.2.4 Storage

Underground gas storage Banatski Dvor is very important for the security of natural gas supply. It is located on the depleted gas deposit with total volume of 3.3 billion m³ of natural gas. Total area of the storage amounts to around 54 km². The operational volume of the storage amounts to 4,617 GWh of natural gas while the maximum storage withdrawal capacity amounts to 51.3 GWh/day.

Banatski Dvor storage was commissioned in November 2011. Bidirectional gas pipeline Gospođinci – Banatski Dvor enables unhindered and full connection of the underground gas storage with the transmission system of *Transportgas Srbija*. The basic data on this gas pipeline are the following:

- length 42.5 km
- nominal diameter DN 500
- maximum working pressure: p_{max}=75 bar
- maximum gas flow:
 - withdrawal from UGS B. Dvor Q=102.6 GWh/day and
 - injection into UGS B.Dvor Q=51.3 GWh/day).

After the second development phase, the operational storage volume will be increased to 8,208 GWh of natural gas. The underground storage is connected by two gas pipelines to the gas pipeline junction point in Elemir.

In 2024, maximum technical capacity of injection was 27,702 GWh/day and maximum withdrawal capacity (from the storage) was 51,300 GWh/day. Maximum daily injection quantities in 2024 amounted to 29,007 GWh/day and maximum daily withdrawn quantities recorded 54.044 GWh/day.

In 2024, the cushion gas quantity in the storage did not change and it amounted to 5,432 GWh.

In 2024, more natural gas was withdrawn from the storage than injected into it. In the beginning of 2024, there were 7,428 GWh of commercial gas. 2,570 GWh of gas was injected from the transmission system into the storage, out of which 29 GWh were spent to cover the storage demand. The remaining 2,541 GWh of commercial gas were injected for commercial purposes. Users withdrew from the storage 2,940 GWh from the storage, and this is also the volume injected into the transmission system. At the end of 2024, 7,023 GWh of commercial gas were stored in the storage.

4.2 Natural gas consumption and supply sources

In 2024, 28,072 GWh of natural gas were available from: import, local production and underground storage. 2 million m³ in total were available for consumption and 27,228 GWh of natural gas were consumed.

Most of natural gas quantities are provided through import from the Russian Federation based on the long-term contract. The company Yugorosgas JSC (shareholders: Gazprom 50%, PE *Srbijagas* 25% and Central ME Energy and Gas, Vienna 25%) procures natural gas from Gazprom for customers in Serbia.

In 2024, natural gas import from the Russian Federation in line with a long-term contract amounted to 21,617 GWh and it was realised from the direction from Bulgaria via the transmission system of Gastrans LLC. In 2024, except for import in line with long-term contracts and other contracts for the natural gas import from the Russian Federation, During 2024, JP *Srbijagas* purchased natural gas from an additional supplier, and these quantities were taken over from the Bulgarian transmission system.

In 2024, local production of 1,815 GWh could meet only 6.7% of the demand which represents less than last year when it amounted to 7.4% of the demand could be met. Gas was not exported in 2024.

Table 4-6: Natural gas supply sources and consumption in 2023 and 2024

	2023. GWh	2024. GWh	2024./2023. Index
Local production	2.043	1.815	88,8
Import from the Russian Federation – via long-term contract	26.102	21.617	82,8
Import from other sources – via other contracts	1.584	3.696	233
Total import	27.686	25.313	91,4
Quantities withdrawn from the underground storage	83	944	113,7
TOTAL AVAILABLE QUANTITIES	29.812	28.072	94,16
Injected into the storage	1.922	374	19,46
Gross consumption	27.890	27.698	92,8
Difference between quantities purchased and sold from transmission system operators for losses, balancing and self-consumption	197	161	81,7
Distribution network losses and demand within the legal person	256	309	120,7
Export	0	0	
For final consumption	27.437	27.228	99,2

The number of delivery points in 2023 increased by 20,136 in comparison to 2023. At the end of 2024, it amounted to 363,040. There were 58 of them on the transmission system and 362,983 delivery points on the distribution system. Out of the number, households accounted for 346,005 or 95%.

Table 4-7: Number of delivery points at the end of 2023 and 2024

Consumption category	2023.	2024.	Variation 2024-2023
Households	326.503	346.005	19.502
District heating companies	173	173	0
Industry and other	16.228	16.863	635
Total	342.904	363.040	20.136

In 2024, 27,228 GWh of natural gas was consumed. It amounts to 0.8% less than in 2023. Consumption in households increased by 11.1%. In district heating companies, it increased by 2.3% due to milder winter than last year, while in industry, it decreased by 4.2% in comparison to last year.

Consumption structure for different categories is given in Table 4-8.

Table 4-8: Consumption structure in 2023 and 2024

Consumption category	2023. GWh	2024. GWh	2024./2023. Индекс
Households	3.825	4.250	111,1
District heating companies	5.369	5.492	102,3
Industry and other	18.244	17.486	95,8
Total	27.437	27.228	99,2

Households consumption accounts for 16% of final natural gas consumption in 2024. District heating companies consumption accounted for 20%, while industry and other customers covered 64% (this consumption includes the quantities purchased in the market and the quantities NIS spent from its local production).

The structure of the final natural gas consumption in 2024 is given in Figure 4-3.

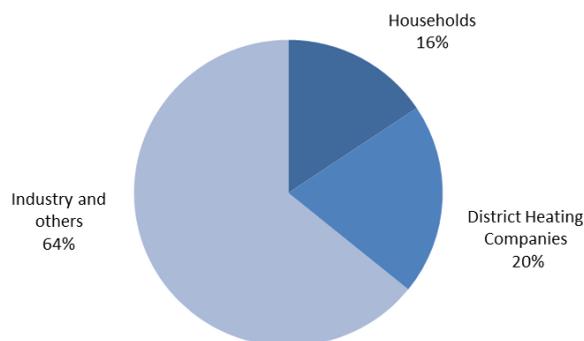


Figure 4-3: Structure of natural gas consumption in Serbia in 2024

Average annual natural gas consumption per connected household amounted to 12,283 kWh in 2024 (including active delivery points for households which did not consume gas during 2024) which amounts to 4.8% more than in 2023. If one only takes into account the households which consumed natural gas during 2024 (there were 325,552 of them), average annual consumption per household amounted to 13,055 kWh.

4.3 Regulation of the transmission system operator

Transportgas Srbija d.o.o. Novi Sad is a company that, at the end of 2019, began taking over natural gas transmission activities from JP Srbijagas Novi Sad, and as of October 2020, fully assumed the operation and management of the natural gas transmission system.

During 2024, Transportgas Srbija d.o.o. Novi Sad conducted a public consultation on the Draft Rules for the Operation of the Natural Gas Transmission System. These rules were prepared to align with government regulations under Article 93a of the Energy Law, which transpose adapted EU network codes into domestic law, regulating network rules for access to gas transmission networks, in accordance with confirmed international agreements (rules for the calculation and allocation of transmission capacities, congestion management and publication of technical information, system balancing, cooperation and data exchange between transmission system operators, and harmonized natural gas tariffs, all published in the "Official Gazette of RS," No. 112/22).

During 2024, the Agency, within its authority, conducted public consultations and exchanged opinions with neighboring regulatory bodies to adopt individual decisions prescribed by the government regulations under Article 93a of the Energy Law.

To ensure uninterrupted transport and transit of natural gas, on 19 December 2024, the Agency issued a Decision establishing interconnection points that are not interconnectors, where the calculation and allocation of natural gas transmission capacities are carried out. In May 2024, the Agency held consultations with all natural gas distribution system operators to decide which party is responsible for estimating daily takeovers without daily measurement.

At the request of Transportgas Srbija d.o.o. Novi Sad dated 10 May 2024, the Agency issued a preliminary decision on 25 July 2024 to grant certification to Transportgas Srbija d.o.o. under the independent system operator model and forwarded it to the Secretariat of the Energy Community for an opinion, in accordance with Serbia's obligations under confirmed international agreements. As the Secretariat provided its opinion on 21 November 2024, the Agency is obliged to adopt a final decision within four months of receiving the opinion, taking it into account to the greatest possible extent.

The transmission system operator Yugorosgaz-transport d.o.o. Niš has been performing gas transmission activities since 2013, when it was established by separating from the vertically integrated company Yugorosgaz a.d. Belgrade. Under the 2014 Energy Law, Yugorosgaz-transport d.o.o. Niš was required to ensure functional unbundling from the vertically integrated company Yugorosgaz a.d. Belgrade, which it did not accomplish in 2024.

Yugorosgaz-transport d.o.o. Niš submitted the Rules for the Operation of the Natural Gas Transmission System to the Agency in December 2014, which were approved by the Agency Council in January 2015. During 2024, the operator did not submit rules aligned with the regulations governing network access to gas transmission networks under Article 93a of the Energy Law, noting that the adoption of these rules required the prior adoption of Transportgas Srbija d.o.o. rules.

During 2024, the Agency conducted consultations on the Draft Methodology for Determining Access Fees to the Natural Gas Transmission System. In this process, the Agency obtained a positive opinion from the Energy Community Regulatory Board in accordance with the Regulation on Network Rules for Harmonized Natural Gas Tariffs ("Official Gazette of RS," No. 112/22) and Serbia's obligations under confirmed international agreements. The proposed methodology establishes the requirement for its joint application when multiple operators perform regulated transmission activities, meaning that Transportgas Srbija d.o.o. Novi Sad and Yugorosgaz-transport d.o.o. Niš are considered a single entry-exit system for which the Agency determines joint access fees (Article 55, paragraph 3, item 2 of the Law).

Gastrans d.o.o. Novi Sad is a transmission system operator that was granted a partial exemption from ownership unbundling, regulated pricing, and third-party access obligations for 20 years by the Agency's decision of 5 March 2019, in accordance with the Energy Law and the opinion of the Energy Community Secretariat. Following this exemption, the Agency issued a certification decision for Gastrans as a transmission system operator and confirmed compliance with conditions in its act of 31 March 2022.

Before commencing commercial operations, Gastrans d.o.o. Novi Sad adopted the Rules for the Operation of the Transmission System, approved by the Agency Council on 15 May 2020. Gastrans began commercial operations on 1 January 2021, with all pipeline capacities operational from 1 October 2021, when cross-border gas transit to Hungary commenced.

In 2024, Gastrans d.o.o. prepared a proposal to further align the Transmission System Operation Rules with government regulations under Article 93a of the Energy Law, but these rules were not submitted to the Agency for approval by the end of 2024.

During 2024, the Agency monitored Gastrans d.o.o. Novi Sad's compliance with the regulatory framework, checking the correctness of tariff and initial access price determinations for each gas year according to the Tariff Methodology established by Gastrans. The Agency also monitored the application of the Transmission System Operation Rules and the implementation of the Non-Discriminatory Behavior Program adopted by Gastrans d.o.o., based on submitted information and the Annual Report regularly provided to the Agency by the official responsible for monitoring the program.

4.3.1 Unbundling of the Transmission System Operator

At the end of 2014, the Government of the Republic of Serbia adopted a Conclusion on Grounds for Restructuring of PE *Srbijagas* which defined that the transmission and distribution system operators should be legally unbundled entities from PE *Srbijagas* while owned by PE *Srbijagas*. The Plan was also harmonized with the Energy Community thereby representing a feedback to the invitation of the Energy Community Ministerial Council sent to Serbia in September 2014 asking from Serbia to comply with its obligations arising from the Treaty establishing the Energy Community regarding the unbundling of the transmission system operator.

PE *Srbijagas* Supervisory Board adopted a decision on the establishment of *Transportgas Srbija* LLC as well as the decision on the establishment of *Distribucijagas Srbija* LLC on June 22, 2015. On the session held on June 27, 2015, the Government of the Republic of Serbia approved these decisions. These companies were established on August 22, 2015 and registered in the registry of companies as active companies but they did not start operating.

By the Decision of November 19, 2015, the Government of the Republic of Serbia enabled the companies *Transportgas Srbija* LLC and *Distribucija Srbija* LLC to perform the activities of general interest, transmission and transmission system operator and distribution and distribution system operation under PE *Srbijagas* licence until the licence validity period expires. The Government also recommended that all necessary activities are taken in order to obtain relevant licences as soon as possible.

In addition, by the Conclusion of December 23, 2016, the Government of the Republic of Serbia enabled PE *Srbijagas* to continue performing the activity of general interest – transmission and transmission system operation either independently or via the company *Transportgas Srbija* LLC until the licence for the performance of this activity is obtained. The Government recommended to *Transportgas Srbija* LLC to take all necessary actions in order to obtain this licence as soon as possible.

In line with the EU regulations, the 2014 Energy Law defined three models of organization, i.e. unbundling of the transmission system, i.e. as transmission system operator in line with ownership unbundling model, independent system operator and independent transmission operator.

On November 22, 2018, *Transportgas Srbija* LLC submitted an application for certification according to the independent transmission operator (ITO model) model, but this application was denied by the Agency in February 2019 since the company did not submit the prescribed documentation in the legal time framework and did not thereby prove the compliance with the conditions prescribed for certification according to ITO model. *Transportgas Srbija* LLC resubmitted the ITO model certification application on May 31, 2019 but this application was also denied for the same reasons by the Agency on September 20, 2019.

In June 2021, the shares of JP *Srbijagas* in its subsidiary *Transportgas Srbija* d.o.o. Novi Sad were transferred to the Republic of Serbia, which became the sole member of *Transportgas Srbija* d.o.o. Novi Sad, holding 100% of the shares. Following this change of ownership, in October 2021 the Government amended and supplemented the Articles of Association of *Transportgas Srbija* d.o.o., so that in 2021 the transmission system operator *Transportgas Srbija* ceased to be part of the vertically integrated company JP *Srbijagas* Novi Sad, thereby creating conditions for non-discriminatory and independent operation of the transmission system operator *Transportgas Srbija* d.o.o. Novi Sad.

After *Transportgas Srbija* LLC ceased to be a part of the vertically-integrated company PE *Srbijagas* in 2021, *Transportgas Srbija* LLC submitted a new application for the certification in line with Independent System Operator (ISO) model on November 5, 2021 but they withdraw their application which is why, in March 2022, the Agency adopted a decision on the suspension of the certification procedure which was initiated upon file applicant's request. Until the end of 2023, *Transportgas Srbija* LLC did not file a certification application to the Agency.

The Law on Amendments to the Energy Law ("Official Gazette of RS," No. 62/23) established the Republic Commission for Energy Networks as an independent and autonomous body of the Republic of Serbia, responsible for supervising the

electricity transmission system operator and the natural gas transmission system operator founded by the Republic of Serbia. Upon the entry into force of this law, the ministry responsible for economic affairs ceased to supervise these system operators, thereby fulfilling the prescribed requirements regarding system operator oversight.

In May 2024, the Agency Council adopted a decision approving the Non-Discriminatory Behavior Program of Transportgas Srbija d.o.o., as well as a decision approving the appointment, term, independence, and dismissal of the official responsible for monitoring this program. In July 2024, it issued a decision granting prior consent for the appointment of the specific official responsible for monitoring the program.

In May 2024, Transportgas Srbija d.o.o. again submitted a request to the Agency for certification under the Independent System Operator (ISO) model. Acting on this request, the Agency Council issued a decision in July 2024, within the statutory deadline, granting the company certification as an independent system operator. This decision was sent, in accordance with the Energy Law, to the Energy Community Secretariat for an opinion. Within the prescribed four-month period from the date of the Agency's decision, the Secretariat provided its opinion in November 2024. According to the Secretariat's opinion, certain inconsistencies described in the text of the opinion need to be addressed through specific actions by Transportgas Srbija d.o.o. and JP Srbijagas, as the network owner, in order to fully meet the requirements for certification under the independent system operator model. The deadline for issuing the final certification decision for Transportgas Srbija d.o.o. is four months from the delivery of the Secretariat's opinion.

The Transmission System Operator *Yugorosgaz-Transport* LLC was legally unbundled from the vertically integrated company *Yugorosgaz* JSC which is the owner of it. On September 2013, *Yugorosgaz-Transport* LLC obtained licence for natural gas transmission and transmission system operation. By the adoption of the Law at the end of 2014, conditions were created for the execution of certification procedure upon the request of this operator in line with the Law.

Acting within the timeframe for certification prescribed by the Law, in August 2016, *Yugorosgaz-Transport* LLC submitted an application for certification according to the Independent System Operator (ISO model) model to the Agency. Bearing in mind the ownership structure of this company and its mother company, this application was also treated as an application for the certification of a transmission system operator related to third countries.

By adopting a decision in December 2016, the Agency certified *Yugorosgaz – Transport* LLC Niš as an independent system operator but under the condition that within a year the company should harmonise its organisation and operation in a way providing for the compliance with prescribed conditions related to the independence of the system operation in line with the given model. Otherwise, the certificate will be withdrawn. The harmonisation implies the harmonisation of ratified international treaties concluded with the Russian Federation and the EU, i.e. the countries of the Southeastern Europe which should be done beforehand. In addition, the system operator is instructed to submit the ten-year transmission system development plan, the programme for non-discriminatory treatment and an act signed with the transmission system owner which provides for the guarantees which will enable financing of the transmission system development within the same deadline.

The final certification decision was adopted following a procedure prescribed by the Law, with the participation of a competent body which is authorised to issue their opinion on the decision of the Agency on certification in line with the obligations arising from ratified international treaties. By this final Decision of the Agency Council of June 2017, *Yugorosgaz-Transport* LLC was certified as an Independent System Operator with an obligation to harmonise its organization and operation in a manner providing for the compliance with conditions related to independence. They were also obliged to submit the compliance programme and evidence on natural gas procurement meant for recovery of losses within the transmission system. The deadline for the compliance with the conditions was one year. Otherwise, the certificate would be withdrawn. From all the above given, the first condition is beyond the jurisdiction of the Agency and its compliance depends exclusively from competent state authorities.

In line with the Decision adopted by the Agency Council of July 13, 2018, *Yugorosgaz-Transport* LLC was awarded with an additional one-year period for the compliance with the certification conditions according to the Independent System Operator model with an obligation to inform the Agency once in two months on the activities taken to that end. Since *Yugorosgaz-Transport* LLC did not submit all the evidence on the compliance with the conditions set in the Final Certification Decision to the Agency after the prescribed deadline, on July 15, 2019, the Agency Council adopted a decision on the withdrawal of the certificate issued by the Final Certification Decision of June 2017 to *Yugorosgaz-Transport* LLC. In 2023, *Yugorosgaz-Transport* did not file an application for certification since in May 2021, the Government of the Republic of Serbia adopted Action Plan which implied a plan to perform necessary activities in order to harmonise ratified international treaties concluded with the Russian Federation with the Energy Law which should remove all obstacles to the certification of *Yugorosgaz-Transport* LLC.

Acting in line with the 2014 Law and the Decision of the Energy Agency of the Republic of Serbia on Exemption of New Natural Gas Interconnector ("Official Gazette of RS", No. 15/19), the Limited Liability Company *GASTRANS* LLC, Novi Sad submitted a certification application on June 25, 2019.

By the decision of August 15, 2019 (Preliminary Decision), the Agency Council certified *GASTRANS* LLC conditionally as an Independent Transmission Operator to the extent it is in compliance with the approved exemption (ad hoc ITO model) with an obligation to submit all occupancy permits to the Agency or to register ownership rights over the transmission system facilities and to submit evidence confirming its independent operation and operation over the built transmission system. The deadline for the compliance was 6 months. Otherwise, the certificate would be withdrawn.

The body competent in line with obligations arising from ratified international treaties (Energy Community Secretariat) submitted their Opinion on the Preliminary Decision on Certification of *GASTRANS* LLC on December 22, 2019. Following this, within the legal timeframe, on February 21, 2020, the Council of the Agency adopted the final decision by which *GASTRANS* llc is awarded with a certificate as to an independent natural gas transmission operator. Basically, by this decision, the Preliminary Decision of August 2019 was confirmed since the Agency prescribed the same obligations to *GASTRANS* llc as it was the case in the Preliminary Decision.

In early October 2021, *Gastrans* LLC started performing transmission within the whole gas interconnector (Zajecar – Horgos) and this is the moment when the 6-month deadline became effective as it was set in the final decision on conditional certification of February 22, 2020 on the submission of evidence confirming the compliance with certification conditions. Following the expiry of this deadline, *Gastrans* LLC submitted evidence based on which Agency established that *Gastrans* LLC complied with requirements defined by the final decision on certification of February 20, 2020. The decision by which the compliance with requirements defined in the final act on the certification is confirmed was adopted by the Agency Council in March 2022.

The official responsible for monitoring the implementation of the Non-Discriminatory Behavior Program continued in 2024 to timely report to the Agency on the measures that *Gastrans* d.o.o. took to fulfill all obligations established by the Non-Discriminatory Behavior Program.

4.3.2 Price regulation

4.3.2.1 System connection costs

Transmission system connection costs are set by TSO on the basis of elements from the connection application and on the Methodology for Setting Costs of Connection to Natural Gas Transmission and Distribution System (“Official Gazette of RS”, No. 42/16 and 140/22) which is adopted by the Agency. The Methodology sets types of costs: design and collection of necessary documentation, procurement of devices, equipment and material, execution of works, costs of expertise and operational tasks, as well as the method of calculation of all costs. After connection costs are set in the connection decision, the TSO is obliged to use market prices of goods, works and services.

The applicant for connection bears the costs of connection to the transmission system. Connection service costs are set by the TSO in line with true costs of individual connection and prescribed segment of cost which was caused by the connection of an applicant’s facility to the system.

Since connections on the transmission system cannot be standardized and since each of them is a project of its own, the TSO is obliged to comply with the principles with publicity and non-discrimination and to give the applicant, upon his/her request, insight into the documents which serve as the basis for setting the level of connection costs and for the method of calculation of these costs. The applicant has to cover true connection costs and a part of costs for system development which arose from this connection which depend on characteristics of that connection.

4.3.2.2 Use-of-system charges

Natural gas transmission use-of-system charges were not modified in 2024.

Table 4-9: Average approved natural gas transmission use-of-system charge¹²

Transmission system operator	RSD/kWh	
	31/12/2023	31.12.2024.
<i>Transportgas Srbija</i>	0.148	0,148
<i>Yugorosgaz-Transport</i>	0.074	0,074

Current charges and chronological review of the natural gas transmission use-of-system charges are available on the website of the Agency (www.aers.rs).

4.3.2.3 Prices of Non-Standard Services

The Law prescribes that in addition to providing services to customers and system users which are charged via use-of-system charge or via connection costs, upon a customer’s, i.e. system user’s request, the transmission system operator also provides services which are not included in the above stated prices. In addition, the operator provides services when necessary in order to remove the consequences arising from a customer’s or system user’s acts which are contrary to regulations. Since these services are individual and occurring from occasionally upon a customer’s or system user’s request, they are called non-standard services.

4.3.3 Access to cross-border capacities

During 2024, Serbia had five interconnections with gas pipeline systems of neighbouring countries - three entry and two exit points:

¹² Average approved charge is the quotient of the maximum approved revenue and approved natural gas quantities

Transportgas Srbija LLC has cross-border interconnections:

- Hungary – Serbia (Kiskundorozsma) – entry point;
- Bulgaria – Serbia (Dimitrovgrad) – entry point and
- Serbia – Bosnia and Herzegovina (Zvornik) – exit point.

Gasrans LLC has cross-border interconnections:

- Bulgaria – Serbia (Zaječar) – entry point and
- Serbia – Hungary (Kiskundorozsma) – exit point.

The Agency adopted a decision on 19 December 2024 that, at the interconnection point between the transmission systems of Gastrans d.o.o. and Transportgas Serbia d.o.o. (IP Serbia), the calculation and allocation of transmission capacities shall be carried out in accordance with the Regulation on network rules relating to the calculation and allocation of natural gas transmission capacities, thereby deciding that the same rules applicable to cross-border interconnections shall also apply to IP Serbia.

Both interconnections are a part of the transmission system operated by *Transportgas Srbija* LLC, while there are no gas pipelines connected with the transmission systems of neighbouring countries within the transmission system operated by the *Yugorosgaz transport* LLC.

Transportgas Srbija LLC started natural gas transmission via new interconnection Bulgaria (Kalotina) – Serbia (Dimitrovgrad) as of January 1, 2024.

In line with PE Srbijagas Transmission Network Code which was adopted in 2013 and which used to be applied by Transportgas Srbija LLC in certain segments, the first annual capacity allocation was supposed to be organized in early 2014 for the gas year starting in July 2014. Upon PE Srbijagas request, the first capacity allocation was postponed for 2015, and afterwards for 2016. The allocation of cross-border capacities by the transmission system operator Transportgas Serbia d.o.o. has not been organized to date, and access to cross-border capacities was available to JP Srbijagas for the purposes of transit to Bosnia and Herzegovina. During 2024, Transportgas Serbia d.o.o. prepared the Rules of Operation, and the Council of the Agency gave its consent to the Rules of Operation on 30 January 2025. In accordance with those rules, the first annual allocation of all capacities, including cross-border capacities, will be organized in July 2025 for the gas year 2025/2026.

In accordance with the Rules of Operation, during 2024 Gastrans d.o.o., through auctions on the RBP platform, offered short-term capacities (quarterly, monthly, daily, and within-day), amounting to 10% of the pipeline capacity, as well as a small volume of annual capacities (197,813 kWh/h), given that the long-term contract that Gastrans d.o.o. had with one user had expired.

During 2024, Gastrans d.o.o. also offered commercial reverse-flow capacities as annual, quarterly, monthly, and daily capacities.

Under the Rules of Operation, Gastrans d.o.o. committed to offering daily interruptible capacities on days when 100% of the technical capacity of the pipeline is contracted, in an amount equal to the difference between the contracted capacities and the nominated quantities for that day. In 2024, daily interruptible capacities were offered for allocation and were contracted for three days at the Serbia–Hungary exit point and for one day at the Bulgaria–Serbia entry point.

4.3.3.1 Capacity allocation on interconnection points and congestion management

As it is mentioned, *Transportgas Srbija* LLC applies certain segments of the PE *Srbijagas* Code. The Code defines the rules for the allocation of all transmission capacity, cross-border capacity included as well as the rules for congestion management. However, *Transportgas Srbija* LLC did not organise the cross-border capacity allocation to all interested parties in 2024 either, either based on the Network Code of PE *Srbijagas* or in another manner, except for PE Srbijagas demand and transit purposes.

Gas pipeline capacity which is operated by *Transportgas Srbija* LLC in 2024 on the entry point Hungary – Serbia (Kiskundorozsma) was used by PE *Srbijagas* while the exit capacity on the interconnector towards Bosnia and Herzegovina was used by *Gazprom Export* for the delivery into BiH and PE *Srbijagas* to cover the demand of the district heating company in Zvornik and in Serbia.

Firm capacity on the entry point Hungary – Serbia was used in the period January – February and November – December 2024 for import of natural gas which was stored in Hungary as supply source in order to cover increased natural gas consumption in Serbia during winter months. Maximum daily quantities in 2024 amounted to 38.32 GWh/day which is 28.73% of maximum technical capacity of this interconnector of 133.38 GWh/day. Average annual utility rate of the interconnector amounted to 2.54% in 2024 (which represents a decrease in comparison to 3.25 in 2023), which is low since the construction of the gas pipeline *Gastrans* LLC made the direction from Bulgaria the main natural gas supply direction for Serbia and Bosnia and Herzegovina.

Maximum daily quantities on the exit point Serbia – Bosnia and Herzegovina in 2024 amounted to 14.29 GWh/day which represents 69.64% of maximum technical capacity of 20.52 GWh/day. Average annual utility rate of this interconnector amounted to 30.24% in 2024 which is on the level of 30.88% in 2023. One cannot expect considerable increase in the utility rate of this interconnector since the annual natural gas consumption in Bosnia and Herzegovina is not increasing, natural

gas consumption is considerably higher in winter period than in the summer and since there is no underground storage in Bosnia and Herzegovina.

Gas pipeline *Gastrans* LLC capacity was used during 2024 on the entry point Bulgaria – Serbia and on the exit point Serbia – Hungary by shareholders of *Gastrans* LLC: *Gazprom Export* and PE *Srbijagas* and other eight suppliers. The exit point Serbia were used by PE *Srbijagas* to cover the demand in Serbia and *Gazprom Export* for transit into Bosnia and Herzegovina and both used it to inject natural gas into the underground storage Banatski Dvor.

The maximum daily quantities at the Serbia–Bosnia and Herzegovina exit point in 2024 amounted to 14.29 GWh/day, which represents 69.64% of the maximum technical capacity of 20.52 GWh/day. The average annual utilization of this interconnector was 30.24% in 2024, which is broadly in line with the level of 30.88% recorded in 2023. A significant increase in the utilization of this interconnector cannot be expected, given that annual natural gas consumption in Bosnia and Herzegovina is not increasing, gas consumption is significantly higher in the winter than in the summer period, and there is no underground gas storage facility in Bosnia and Herzegovina.

During 2024, the capacities of the *Gastrans* d.o.o. pipeline at the Bulgaria–Serbia entry point and the Serbia–Hungary exit point were used by the shareholders of *Gastrans* d.o.o., *Gazprom Export* and JP *Srbijagas*, as well as by eight additional suppliers. The Serbia exit point was used by JP *Srbijagas* for the needs of Serbia and by *Gazprom Export* for transit to Bosnia and Herzegovina, while both also used it for injecting natural gas into the Banatski Dvor underground gas storage facility.

The maximum daily quantities at the Bulgaria–Serbia entry point in 2024 amounted to 357.39 GWh/day, which represents 97.46% of the maximum technical capacity of 366.72 GWh/day. The average annual utilization of this entry point was 80.72% in 2024.

The maximum daily quantities at the Serbia–Hungary exit point in 2024 amounted to 255.67 GWh/day, which represents 104.03% of the maximum technical capacity of 245.76 GWh/day. The average annual utilization of this exit point was 92.24% in 2024.

The maximum daily quantities at the Serbia exit point in 2024 amounted to 126.10 GWh/day, which represents 104.25% of the maximum technical capacity of 120.96 GWh/day. The average annual utilization of this exit point was 57.32% in 2024.

As a long-term contract of one transmission system user expired, *Gastrans* d.o.o. offered firm annual capacities of 197,817 kWh/h at auction at the Bulgaria–Serbia entry point and at the Serbia exit point. At the Bulgaria–Serbia entry point, contractual congestion occurred, as the requests of two auction participants exceeded the offered capacities. One hundred percent of the offered capacity was allocated in the third auction round at a price 50% higher than the starting price. At the Serbia exit point, there was one auction participant who booked 100% of the capacity at the reserve (starting) price.

At the quarterly capacity auction held on 6 November 2023 at the Bulgaria–Serbia entry point for the period January–March 2024, 100% of the offered capacity of 1,528,258 kWh/h was booked at the starting price. As a result, monthly, daily, and hourly capacities at the Bulgaria–Serbia entry point for the period January–March 2024 were no longer offered.

At the quarterly capacity auction held on 6 November 2023 at the Serbia exit point for the period January–March 2024, 100% of the offered capacity of 504,235 kWh/h was booked at the starting price. Consequently, monthly, daily, and hourly capacities at the Serbia exit point for the period January–March 2024 were no longer offered.

At the quarterly capacity auction held on 7 August 2023 at the Serbia–Hungary exit point for the periods April–June and July–September 2024, 100% of the offered capacity of 1,024,024 kWh/h was booked at the starting price. Consequently, quarterly, monthly, daily, and hourly capacities at the Serbia–Hungary exit point for the period April–September 2024 were no longer offered.

At the monthly capacity auction held on 16 September 2024 at the Serbia–Hungary exit point for October 2024, contractual congestion occurred, as the requests of three auction participants exceeded the offered capacity of 296,862 kWh/h. One hundred percent of the offered capacity was booked by two users in the third auction round at a price 5% higher than the starting price.

At the monthly capacity auction held on 21 October 2024 at the Bulgaria–Serbia entry point for November 2024, contractual congestion occurred, as the requests of two auction participants exceeded the offered capacity of 1,018,258 kWh/h. One hundred percent of the offered capacity was booked by one user in the third auction round at a price 5% higher than the starting price.

At the monthly capacity auction held on 21 October 2024 at the Serbia exit point for November 2024, 100% of the offered capacity of 504,235 kWh/h was booked by one user at the starting price.

At the monthly capacity auction held on 21 October 2024 at the Serbia–Hungary exit point for November 2024, contractual congestion occurred, as the requests of four auction participants exceeded the offered capacity of 296,862 kWh/h. One hundred percent of the offered capacity was booked by one user in the fifth auction round at a price 12% higher than the starting price.

At the monthly capacity auction held on 18 November 2024 at the Bulgaria–Serbia entry point for December 2024, 100% of the offered capacity of 1,018,258 kWh/h was booked by one user at the starting price.

At the monthly capacity auction held on 18 November 2024 at the Serbia exit point for December 2024, 100% of the offered capacity of 504,235 kWh/h was booked by one user at the starting price.

At the monthly capacity auction held on 18 November 2024 at the Serbia–Hungary exit point for December 2024, 100% of the offered capacity of 296,862 kWh/h was booked by one user at the starting price.

The Regulation on network rules for congestion management procedures and the publication of data and technical information for access to the transmission system, in Article 17, which defines the conditions for the application of the firm day-ahead “use-it-or-lose-it” mechanism, provides in paragraph 2, item 4), that this mechanism applies when no firm capacity product with a duration of one month or longer is offered.

This was the case in 2024:

at the Bulgaria–Serbia entry point, as monthly, daily, and hourly capacities were not offered for allocation for the period January–March 2024;

at the Serbia exit point, as monthly, daily, and hourly capacities were not offered for allocation for the period January–March 2024; and

at the Serbia–Hungary exit point, as monthly, daily, and hourly capacities were not offered for allocation for the period April–September 2024.

The Regulation on network rules for congestion management procedures and the publication of data and technical information for access to the transmission system, in Article 25, which defines the conditions for applying the long-term “use-it-or-lose-it” mechanism, stipulates in paragraph 1 that the Agency may adopt a decision obliging the transmission system operator to include all or part of frequently unused capacity in the available capacity, if the system user has not sold or offered its unused capacity under reasonable conditions and if there is demand from other users for firm capacity. Capacity is considered frequently unused if the system user utilizes on average less than 80% of its contracted capacity during the periods from 1 April to 30 September and from 1 October to 31 March.

Based on the report of the person responsible for monitoring the non-discriminatory conduct program of Gastrans d.o.o., the utilization of capacities by users holding long-term contracts is as follows:

A user who has long-term contracted (very small) capacities at the Bulgaria–Serbia entry point, the Serbia exit point, and the Serbia–Hungary exit point does not use these capacities at all, i.e. its average utilization is below 80% of the long-term contracted capacity in both the period from 1 April to 30 September and the period from 1 October to 31 March.

A user who has long-term contracted capacities at the Bulgaria–Serbia entry point and the Serbia exit point has an average utilization below 80% of the long-term contracted capacity in the period from 1 April to 30 September.

A user who has long-term contracted capacities at the Bulgaria–Serbia entry point and the Serbia–Hungary exit point has an average utilization above 80% of its contracted capacity in both the period from 1 April to 30 September and the period from 1 October to 31 March.

If it is assumed that demand from other users for firm capacity exists when auction premiums occur in capacity allocation, then during 2024 such demand existed at the Bulgaria–Serbia entry point and the Serbia–Hungary exit point, where long-term capacities were also contracted by a user that does not use them at all.

4.3.4 Transmitted natural gas quantities

In 2024, 108,350 GWh of natural gas were withdrawn into *Gastrans* LLC transmission system. These quantities were transmitted for the purpose of transit for Hungary amounting to 82,972 GWh, delivery into transmission system of *Transportgas Srbija* LLC amounting to 25,343 GWh, while *Gastrans* LLC consumed 35 GWh to cover their own demand.

32,902 GWh were withdrawn into the transmission system *Transportgas Srbija* LLC in 2024. These quantities were transmitted so as to meet the demand on the side: customers in Serbia, transit for Bosnia and Herzegovina, storage, transmission and distribution systems for gas losses recovery and compressor station operations.

1,466 GWh of natural gas were withdrawn into the transmission system *Yugorosgas-transport* LLC in 2023. These quantities were transmitted to cover the demand of customers in Serbia and the increase in transported volumes occurred because, in November and December, 441 GWh of imports from Bulgaria were delivered via the Pojate custody transfer station into the transmission system of *Transportgas Serbia* LLC.

Table 4-10: Transmitted natural gas quantities in 2020 - 2024

Transmitted volumes	2020 GWh	2021 GWh	2022 GWh	2023 GWh	2024 GWh	2024/2023 Index
<i>Gastrans</i> for Serbia	0	22,603	25,731	25,703	23,084	89,8
<i>Gastrans</i> for BiH	0	1,785	2,585	2,294	2,258	98,4
From Hungary for Serbia	21,997	1,518	4,737	1,584	1,239	78,2

From Hungary for BiH	2,268	862	0	0	0	0,0
Production on the transmission system	2,627	2,226	2,016	1,989	1.165	0,0
Total	26,892	28,994	35,069	29,505	1.774	89,2
From storage	3,068	5,222	1,197	980	29.521	100,00
Total	29,960	34,216	36,266	30,485	2.940	200,00

4.3.5 Balancing

According to the Law, the transmission system operator is in charge of natural gas system balancing in the Republic of Serbia and they are also responsible for natural gas market setup and administration. This is the operator with the greatest number of exits from the transmission system, i.e. *Transportgas Srbija* LLC. That operator is obliged to procure gas for balancing purposes and so as to provide secure system operation and recover losses in the transmission system, in line with the principles of minimum costs, transparency and non-discrimination.

Transmission system users are obliged to transfer into the system and withdraw from it the same natural gas volume on daily level. Being natural gas market participants, they are obliged to regulate their balancing responsibility by concluding the contract on transmission which regulates the financial responsibility for the variation between the natural gas volume delivered on entries into the transmission system and withdrawn on exits from the transmission system.

Natural gas transmission system operator is responsible for the establishment and realisation of balancing responsibility of market players and for keeping balancing responsibility registry, in line with the Transmission Network Code and Supplier Switching rules. The Transmission Network Code prescribes the TSO's obligation to conclude a contract with a supplier who will provide the natural gas for balancing purpose when there is lack of it in the system, i.e. who will withdraw extra gas when there is a surplus of it in the system. Balancing responsibility for transmission system users with financial consequences became applicable as of October 1, 2020.

Based on data from Transportgas Serbia LLC. for the period from 1 January to 31 December 2024, the operator undertook the following balancing activities: under the annual balancing contract, it purchased 226.496 GWh, and sold 405.772 GWh to system users whose daily natural gas quantities at entry points were lower than at exit points (250.272 GWh first-level imbalance, 143.285 GWh second-level imbalance, and 12.215 GWh third-level imbalance). For the same period, under the annual balancing contract, it sold 184.800 GWh, and purchased 476.017 GWh from system users whose daily natural gas quantities at entry points exceeded those at exit points (254.671 GWh first-level imbalance, 182.491 GWh second-level imbalance, and 38.855 GWh third-level imbalance).

The total volume of system users' imbalance amounted to around 2.18% of transmitted quantities. Out of the total imbalance, 57.26% of the volume accounts for the imbalance of the first level, 36.94% accounts for the second level and 5.80% for the third level.

4.4 Regulation of the distribution system operator

In early 2024, 31 distribution system operators performed natural gas distribution and distribution system operation. The license is also held by another company which has not started operating in 2024.

Natural gas distribution sector has one dominant feature, i.e. great fragmentation. For this reason, there is no economy of scale and therefore, charges for the use of these networks are higher. Generally speaking, the initiative that would lead to enlargement is not strong enough.

The Methodology for Setting Natural Gas Distribution use-of-system charge ("Official Gazette of RS", No. 105/16, 29/17, 78/22, 57/23) and Methodology for Setting Natural Gas Transmission and Distribution System Connection Costs ("Official Gazette of RS", No. 46/16 и 140/22) are applied. These two methodologies were amended by the Agency in 2022 in order to harmonise them with the Decree on Conditions for Natural Gas Delivery and Supply ("Official Gazette of RS", No. 49/22).

4.4.1 Unbundling of Distribution System Operator

Distribution companies in Serbia have their natural gas distribution activities and distribution system operation unbundled in terms of accounting from supply and other energy related and non-energy related activities. Except in accounting terms, the Distribution System Operator which is a part of a vertically integrated company has to be independent from other activities which are not related to distribution and distribution system operation in terms of legal form, organization and decision-making process.

In line with the Law (Article 257), the independence of the Distribution System Operator is ensured by having persons responsible for the Distribution System Operator management cannot participate in management bodies of vertically-integrated company which are directly or indirectly responsible for natural gas production, transport or supply in order to secure that persons responsible for the Distribution System Operator management act professionally and independently in operation. In addition, Distribution System Operator should adopt decisions independently from vertically integrated company in terms of funds necessary for operation, network maintenance and development if these are within the limits of

the approved financial plan. Also, the Distribution System Operator which is a part of a vertically-integrated company is obliged to adopt the Compliance Programme for Non-Discriminatory Behaviour which includes measures for the prevention of discriminatory behaviour, the method of monitoring the implementation of these measures and obligations of employees aiming at the achievement of set goals. In line with Article 259 of the Law, the given provisions do not apply to distribution system operators with less than 100,000 final customers connected to the system.

At the end of 2023, there were 31 distribution system operators performing distribution and distribution system operation. Apart from the distribution system operators PE *Srbijagas* and Yugorosgaz JSC, this activity was performed by 29 companies among which most of them are owned by municipalities and cities, some of them are partly owned by private and public owners and some of them are private companies. Except for PE *Srbijagas*, all distribution system operators have less than 100,000 connected final customers which is why they are also entitled to deal in supply in both regulated and open market and they are not obliged to unbundle the Distribution System Operator and supplier legally (in line with Article 259 of the Law). PE *Srbijagas* had 144,084 delivery points at the end of 2023. 142,977 of them were for public supply and the remaining 1,107 were supplied at unregulated prices.

In 2015, PE *Srbijagas* adopted a decision on the establishment of a daughter company for natural gas distribution – Distribucijagas Srbija LLC Novi Sad which did not start operating which is why natural gas distribution is still performed by PE *Srbijagas*. The Government of the Republic of Serbia, through its Conclusion of October 4, 2018, allowed JP *Srbijagas* to continue performing the public interest activity of distribution and distribution system operation either independently or through the capital company Distribucijagas Srbija d.o.o. until obtaining a license for this activity. It also recommended that Distribucijagas Srbija d.o.o. undertake all necessary actions to obtain this license as soon as possible.

4.4.2 Price regulation

4.4.2.1 System connection costs

Distribution system connection costs are set by DSO on the basis of elements from the connection application and on the Methodology for Setting Costs of Connection to Natural Gas Transmission and Distribution System (“Official Gazette of RS”, No. 42/16 and 140/22) which is adopted by the Agency. The Methodology sets types of costs: design and collection of necessary documentation, procurement of devices, equipment and material, execution of works, costs of expertise and operational tasks, as well as the method of calculation of all costs. In addition, the DSO is obliged to use market prices of goods, works and services when setting connection costs in the connection decision. The DSO is obliged to comply with the principles with publicity and non-discrimination and to give the applicant, upon his/her request, insight into the documents which serve as the basis for setting the level of connection costs and for the method of calculation of these costs.

The applicant for connection bears the costs of connection to the distribution system. Connection service costs are set by the DSO and they correspond to average costs of construction of standard connection (i.e. to true costs of construction of other types of connections) and prescribed segment of cost which was caused by the connection of an applicant’s facility to the system.

The connections on low pressure are grouped into different types in the Methodology and therefore the DSO document on the level of costs of connection of standard connections also includes the level of:

- cost of construction of standard connection for each category of standard connection;
- cost of construction of connection in case of simultaneous construction of network and standard connection for each category of standard connection;
- unit variable cost and
- cost of part of the system.

In line with the Law on amendments to the Energy Law (“Official Gazette of RS”, No. 40/21), the Agency approves the legal act of the natural gas distribution system operator which establishes the level of costs connection via standard connections in line with the Methodology. In 2024, JKP “Drugi Oktobar” Vršac, “Gas” doo Bečej, „Loznica-gas“ doo Loznica, JKP „Standard“ Ada, JP „Elgas“ Senta, JP “Vrbas-Gas” Vrbas, JKP „Toplana Šabac“ Šabac i JP „Kovin-gas“, Kovin adopted decisions on the costs of connecting a standard connection to the natural gas distribution system, which have been approved by the Agency Council.

4.4.2.2 Use-of-System Charges

Natural gas distribution use-of-system charges were not modified during 2024. Average weighted approved distribution use-of-system charge for all distribution networks in Serbia on December 31, 2024 amounted to 0.42 RSD/kWh. The variation in distribution use-of-system charges with different DSOs is the result of the size and features of the distribution systems, the structure and number of customers, the age of the distribution system and other factors.

Table 4-11: Average approved natural gas distribution use-of-system charge¹³

No.	Distribution system operator	RSD/kWh	
		31/12/2023	31/12/2024
1	7 Oktobar, Novi Kneževac	0.99	0.99
2	Beogas, Belgrade	0.69	0.69
3	Beogradske elektrane, Novi Beograd	0.55	0.55
4	Cyrus Energy, Belgrade	0.69	0.69
5	Čoka, Čoka	0.67	0.67
6	Drugi oktobar, Vršac	0.67	0.67
7	Elgas, Senta	0.71	0.71
8	Gas – Feromont, Stara Pazova	0.55	0.55
9	Gas – Ruma, Ruma	0.61	0.61
10	Gas, Bečej	1.10	1.10
11	Gas, Temerin	0.85	0.85
12	Graditelj, Srbobran	0.61	0.61
13	Ingas, Inđija	0.58	0.58
14	Interklima, Vrnjačka banja	0.69	0.69
15	Komunalac, Novi Bečej	0.70	0.70
16	Kovin – Gas, Kovin	0.47	0.47
17	Loznica – Gas, Loznica	0.88	0.88
18	Novi Gas – Gas, Novi Sad	0.60	0.60
19	Polet, Plandište	0.73	0.73
20	Resava Gas, Svilajnac	0.63	0.63
21	Sigas, Požega	1.22	1.22
22	Sombor – Gas, Sombor	0.57	0.57
23	Srbijagas, Novi Sad	0.37	0.37
24	Srem – Gas, Sremska Mitrovica	0.49	0.49
25	Standard, Ada	0.86	0.86
26	Suboticagas, Subotica	0.59	0.59
27	Toplana – Šabac, Šabac	0.63	0.63
28	Užice – gas, Užice	0.57	0.57
29	Vrbas – Gas, Vrbas	0.51	0.51
30	Yugorosgaz, Belgade	0.22	0.22
	AVERAGE	0.42	0.42

The current natural gas distribution system use-of-system charges and the chronological review of these charges are available on the Agency's website (www.aers.rs).

4.4.2.3 Prices of Non-Standard Services

The Energy Law prescribes that in addition to providing services to customers and system users which are charged via use-of-system charge or via connection costs, upon a customer's, i.e. system user's request, the transmission system operator also provides services which are not included in the above stated prices. In addition, the operator provides services when necessary in order to remove the consequences arising from a customer's or system user's acts which are contrary to regulations. Since these services are individual and occurring from occasionally upon a customer's or system user's request, they are called non-standard services. In 2024, JKP "Drugi oktobar", Vrsac, "Sigas" LLC Pozega and "Gas" LLC Becej adopted decisions on prices of non-standard services which define types of non-standard services and their prices. The Council of the Agency approved the decisions.

4.4.3 Distributed natural gas quantities

Natural gas quantities are withdrawn into the distribution systems mostly from the natural gas transmission system. Some distribution systems withdraw natural gas from another distribution system, too. Only small natural gas quantities are provided from natural gas production facilities connected to the distribution system. In 2024, only PE *Srbijagas* withdraw gas

¹³ In 2023, BOSS Construction, Stari Trstenik applies natural gas distribution use-of-system charges on the same level as of *Srbijagas*, Novi Sad.

directly from production facilities. Table 4-12 indicates natural gas quantities withdrawn into natural gas distribution systems and distributed in 2020-2024.

Table 4-12: Distributed natural gas quantities in 2020-2024

	2020 GWh	2021 GWh	2022 GWh	2023 GWh	2024. GWh	2024/2023 Index
Total distributed quantities	16,426	18,622	18,016	17,854	18,747	105,00
withdrawn from the transmission system	15,400	17,186	16,950	16,117	17,326	107,50
withdrawn from distribution systems	934	1,344	1,162	1,683	1,380	82,00
withdrawn from production facilities	92	92	54	54	41	75,93
losses	154	226	151	217	279	128,57
	0.94%	1.21%	0.83%	1.22%	1.49%	122,13

4.5 Natural gas market

In the natural gas sector, only bilateral market is developed. Market players include:

- producer (1);
- suppliers (58);
- public suppliers (31);
- final customers (360,156 using regulated supply and 1,264 in the open market);
- TSOs (3);
- DSOs (31) and
- storage operator (1).

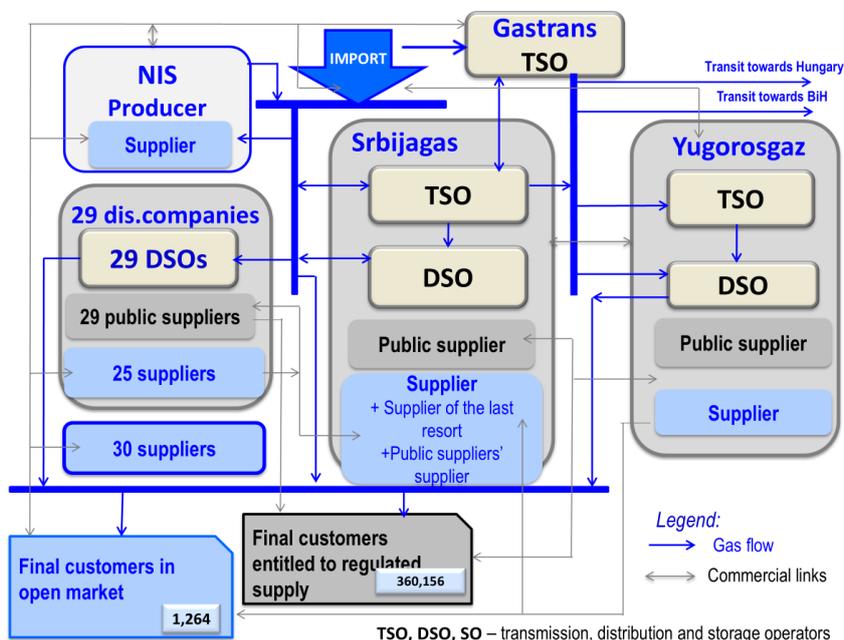


Figure 4-4: Natural gas market scheme at the end of 2024

Being a supplier in the open market, PE *Srbijagas* was also defined as the supplier of public supplier and the supplier of the last resort in line with the Law. On the wholesale market, participants traded in natural gas at free prices, while on retail market, supply was organized at free and regulated prices since all customers except households and small customers had to procure natural gas in the open market in 2024. Households and small customers had an option to select a supplier in the open market although they can always return to the public supplier.

By Decisions of December 11, 2020 and of July 2, 2021, September 3, 2021, September 16, 2022, September 28, 2023 and September 19, 2024, the Government of the Republic of Serbia appointed PE *Srbijagas* to be the supplier of natural gas public suppliers in 2024 and PE *Srbijagas* was obliged to supply all the public suppliers demanding it including the public supplier PE *Srbijagas* with natural gas under the same conditions and at the same price. The method for modification of this price was set by the Government of the Republic of Serbia. PE *Srbijagas* will have the same role until October 2025 based on the decision of the Government of the Republic of Serbia of September 19, 2024.

If one reviews each distribution system in Serbia, Table 4-13 indicates the ratio between the regulated and open market depending on the number of delivery points which are supplied either on the open market or on the regulated one.

Table 4-13 Ratio between regulated and open markets for each distribution system depending on the number of delivery points

No.	Natural gas distributor	% of delivery points in the open market	% of delivery points in the regulated market
1	<i>7. Oktobar, Novi Kneževac</i>	0,54%	99,46%
2	<i>Beogas, Belgrade (with merged Rodgas)</i>	0,47%	99,53%
3	<i>Beogradske elektrane, Novi Beograd</i>	0,00%	100,00%
4	<i>Boss construction, Trstenik</i>	0,00%	100,00%
5	<i>Čoka, Čoka</i>	0,70%	99,30%
6	<i>Drugi oktobar, Vršac</i>	0,42%	99,58%
7	<i>Elgas, Senta</i>	0,18%	99,82%
8	<i>Gas – Feromont, Stara Pazova</i>	0,09%	99,91%
9	<i>Gas – Ruma, Ruma</i>	0,42%	99,58%
10	<i>Gas, Bečej</i>	0,61%	99,39%
11	<i>Gas, Temerin</i>	0,14%	99,86%
12	<i>Graditelj, Srbobran</i>	0,33%	99,67%
13	<i>Ingas, Indija</i>	0,20%	99,80%
14	<i>Interklima, Vrnjačka banja</i>	1,47%	98,53%
15	<i>Komunalac, Novi Bečej</i>	0,18%	99,82%
16	<i>Kovin – Gas, Kovin</i>	0,53%	99,47%
17	<i>Loznica – Gas, Loznica</i>	4,95%	95,05%
18	<i>Novi Sad – Gas, Novi Sad</i>	0,47%	99,53%
19	<i>Polet, Plandište</i>	0,84%	99,16%
20	<i>Resava Gas, Svilajnac</i>	0,30%	99,70%
21	<i>Cyrus energy, Belgrade</i>	0,00%	100,00%
22	<i>Sigas, Požega</i>	0,00%	100,00%
23	<i>Sombor – Gas, Sombor</i>	0,26%	99,74%
24	<i>Srbijagas, Novi Sad</i>	0,78%	99,22%
25	<i>Srem – Gas, Sremska Mitrovica</i>	0,39%	99,61%
26	<i>Standard, Ada</i>	0,82%	99,18%
27	<i>Suboticagas, Subotica</i>	0,69%	99,31%
28	<i>Toplana - Šabac, Šabac</i>	0,00%	100,00%
29	<i>Užice-gas, Užice</i>	0,36%	99,64%
30	<i>Vrbas – Gas, Vrbas</i>	0,83%	99,17%
31	<i>Yugorosgaz, Belgrade</i>	4,79%	95,21%

According to the data on the percentage of delivery points in the open and regulated markets for each distribution system, it is evident that there is still a small number of delivery points where natural gas is delivered at free, market prices. Since households account for 95% of the total number of delivery points and since they are entitled to supply at regulated prices, such high shares of public supply on the distribution system are expected. In comparison to last year, these percentages have not changed much which contributes to the trend that there is no incentive for households to switch from public supply.

If one reviews delivered quantities, Figure 4-5 indicates the ratio between regulated and open market for each distribution system depending on the level of delivered quantities for delivery points which are supplied either in the open or regulated market.

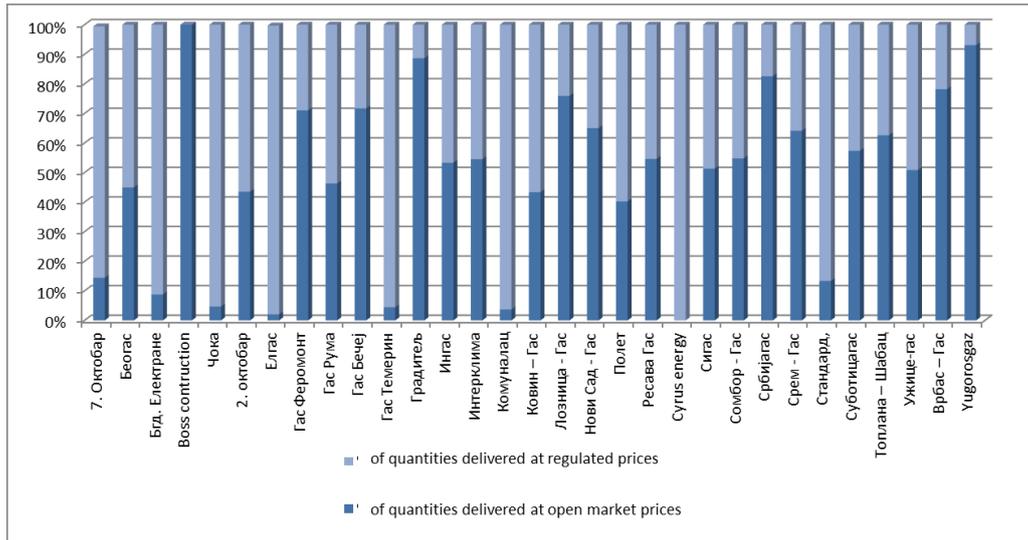


Figure 4-5: Ratio between regulated and open market for each distribution system depending on the level of delivered quantities

4.5.1 Wholesale market

In the wholesale natural gas market, purchase and sale are performed directly between market participants. In 2024, wholesale natural gas market was based on trade among natural gas suppliers and natural gas suppliers and natural gas producers. In this market, in 2024, only one supplier and NIS as the producer sold natural gas to other suppliers and only PE *Srbijagas* as the public suppliers' supplier sold natural gas to all public suppliers.

4.5.1.1 Supply of public suppliers

Except for gas purchase for public suppliers' sake, the wholesale natural gas market was based on bilateral contracts between suppliers themselves and between producers and suppliers. In 2024, there was one company and a producer in the wholesale market which sold natural gas to suppliers and to public suppliers in order to meet the final customers' demand. The average weighted wholesale price at which natural gas was sold by suppliers to other suppliers in 2024 amounted to 4.68 RSD/kWh. It is by 7.8% higher than the one last year. Out of it, average weighted wholesale price at which suppliers sold natural gas to public suppliers in 2024 amounted to 4.39 RSD/kWh. It is by 7.3% higher than the price last year.

4.5.1.2 Regional coupling

The Transmission System Operator from Hungary developed a platform for capacity allocation and booking on interconnectors and this platform is also used by the Transmission System Operators in Romania, Bulgaria and Greece for all their interconnectors, while Austria and Croatia uses it for interconnectors towards Hungary. *Gastrans* LLC is the only Transmission System Operator in Serbia which uses the platform for capacity allocation and booking on interconnectors which was developed by the Hungarian Transmission System Operator.

4.5.2 Retail market

In 2024, final customers procured and spent 25,470 GWh of natural gas in the market. In addition, NIS also spent 1,758 GWh of gas they produced and this quantity was not placed in the market. 1,264 customers procured gas in the open market, while 4 of them were also using supply of the last resort. In total, 20,634 GWh were delivered to customers in the open market (supply of the last resort covered 34.8 GWh), i.e. 81% of the total gas volume delivered to final customers. 23 suppliers were selling gas to them (PE *Srbijagas* with the greatest share – 87%). In 2024, households and small customers with annual consumption lower than 100,000 m³ and with all facilities connected to the distribution system were entitled to regulated public supply. 4,836 GWh were delivered to them.

The natural gas volumes delivered in order to provide supply in the open market and in the regulated market are presented in Table 4-14.

Table 4-14: Total natural gas consumption (in open and regulated markets)

	2023 GWh	2024. GWh	2024./2023. Index
Consumed in the open market	20,741	20,634	99,5

Consumed in the regulated market	4,703	4.836	102,8
Total in the market	25,444	25.470	100

Based on the data provided by natural gas suppliers and public suppliers, average weighted retail price in the open market in 2024, including transmission and distribution use-of-system charges amounted to 5.25 RSD/kWh. It was by 5.8% higher than the price last year. The average weighted retail price in the regulated market amounted to 4.80 RSD/kWh. It was by 11.9% higher than last year. For customers from the small consumption group which also includes households, the price amounted to 4.81 RSD/kWh and it was by 11.6% higher than last year.

PE *Srbijagas* was the supplier of the last resort selected by the Government of the Republic of Serbia in line with the Law for the supply of the last resort of final customers who are not entitled to public supply. Average realised retail price of the supply of the last resort amounted to 5.17 RSD/kWh. It was by 12.1% lower than last year.

In 2024, 7 DSOs delivered more than 300 GWh to customers, while 11 of them delivered less than 50 GWh.

The greatest share of natural gas, i.e. 19,963 GWh (78%) of total quantities was sold to customers by PE *Srbijagas* in 2024. The second greatest share was sold by *Novi Sad Gas* sold 1,000 GWh of gas, i.e. around 3.9% and *Yugorosgaz* JSC with 824 GWh, i.e. 3.2% of total consumed quantities in 2024. Individual share of other suppliers amounts to below 2% of total quantities.

Natural gas volumes sold to final customers by suppliers (excluding the gas both produced and consumed by NIS) in 2023 and 2024 are given in Table 4-15.

Table 4-15: Natural gas sale to final customers in 2023 and 2024

No.	Supplier's name	2023 (MWh)				2024 (MWh)				2024/2023			
		Households	DHCs	Industry and others	Total	Households	DHCs	Industry and others	Total	Households	DHCs	Industry and others	Total
1	7. Октобар, Нови Кнежевац	13.230	0	2.805	16.035	13.647	0	2.816	16.463	103	0	100	103
2	Беогаз, Београд	184.782	0	193.557	378.339	180.541	0	214.396	394.937	98	0	111	104
3	Београдске електране, Нови Београд	47.833	0	6.307	54.140	48.812	0	5.904	54.716	102	0	94	101
4	Босс петрол, Трстеник	0	0	34	34	0	0	29	29	0	0	87	87
5	Чока, Чока	5.323	0	2.026	7.349	5.243	0	2.005	7.248	98	0	99	99
6	Други октобар, Вршац	123.152	0	112.555	235.707	119.429	0	107.119	226.548	97	0	95	96
7	Елгас, Сента	20.863	0	5.635	26.298	20.673	0	5.500	26.173	100	0	98	100
8	Гас - Феромонт, Стара Пазова	214.227	0	174.896	389.123	218.917		140.763	359.680	102	0	80	92
9	Гас - Рума, Рума	95.530	15.008	136.779	247.317	97.998	16.028	124.459	238.485	103	107	91	96
10	Гас, Бечеј	26.082	0	19.609	45.691	26.555	0	16.716	43.271	102	0	85	95
11	Гас, Темерин	89.961	0	19.916	109.877	86.770	0	19.632	106.402	96	0	99	97
12	Градитељ, Србобран	23.119	0	4.052	27.171	22.990	0	9.844	32.834	99	0	243	121
13	Ингас, Инђија	123.143	0	209.561	332.704	122.622	0	206.769	329.391	100	0	99	99
14	Интерклима, Врњачка бања	14.463	0	18.807	33.270	14.435	0	24.030	38.465	100	0	128	116
15	Комуналац, Нови Бечеј	23.805	0	7.269	31.074	24.507	0	6.818	31.325	103	0	94	101
16	Ковин – Гас, Ковин	60.860	9.501	42.071	112.432	63.916	9.269	34.780	107.965	105	98	83	96
17	Лозница - Гас, Лозница	34.542	30.811	71.703	137.056	37.219	31.385	84.042	152.646	108	102	117	111
18	Нови Сад Гас	653.834	10.968	280.665	945.467	659.010	9.813	331.631	1.000.454	101	89	118	106
19	Полет, Планиште	28.276	0	16.816	45.092	23.400	0	22.229	45.629	83	0	132	101
20	Ресава Гас, Свилајнац	7.364	0	20.531	27.895	7.887	0	5.427	13.314	107	0	26	48
21	Сајрус енерџи	25.396	0	4.208	29.604	25.025	0	3.957	28.982	99	0	94	98
22	Сигас, Пожега	5.548	0	3.567	9.115	6.172	0	9.374	15.546	111	0	263	171
23	Сомбор - Гас, Сомбор	36.153	0	39.534	75.687	38.076	0	40.905	78.981	105	0	103	104
24	Србијагаз, Нови Сад	1.586.809	4.928.843	13.813.680	20.329.332	1.996.591	5.042.364	12.924.445	19.963.400	126	102	94	98
25	Срем - Гас, Сремска Митровица	89.337	7.699	196.126	293.162	92.427	7.321	168.951	268.699	103	95	86	92
26	Стандард, Ада	12.585	0	12.782	25.367	12.586	0	13.596	26.182	100	0	106	103
27	Суботицагаз, Суботица	131.280	0	137.767	269.047	132.082	0	149.662	281.744	101	0	109	105
28	Топлана – Шабац, Шабац	43.212	0	20.113	63.325	45.657	0	16.086	61.743	106	0	80	98
29	Ужице-гас, Ужице	43.273	48.190	22.332	113.795	45.041	47.916	23.069	116.026	104	99	103	102
30	Врбас – Гас, Врбас	28.695	0	7.601	36.296	21.320	0	7.996	29.316	74	0	105	81
31	Yugorogaz, Београд	32.129	295.115	489.025	816.269	40.384	306.927	476.600	823.911	126	104	97	101
32	Цестор Векс, Крушевац	0	22.997	89.209	112.206	0	21.172	88.140	109.312	0	92	99	97
33	King gas, Београд	0	0	68.391	68.391	0	0	107.912	107.912	0	0	158	158
34	Сербхунгас, Нови Сад	0	0	201	201	0	0	332.040	332.040	0	0	1653	1653
	Укупно:	3.824.606	5.369.132	16.250.130	25.443.868	4.249.932	5.492.195	15.727.642	25.469.769	111	102	106	100

4.5.2.1 Sale of natural gas on regulated market

In 2024, natural gas public supply prices were not modified. Average weighted approved natural gas price for all customers entitled to public supply in Serbia on 31/12/2024 amounted to 4.54 RSD/kWh while, for small consumption group which also includes households, it amounted to 4.86 RSD/kWh.

Table 0-1: Average approved natural gas public supply price¹⁴

No.	Natural gas public supplier	RSD/kWh			
		All customers		Small customers	
		31/12/2023	31/12/2024	31/12/2023	31/12/2024
1	<i>7 Oktobar, Novi Kneževac</i>	5.23	5.23	5.29	5.29
2	<i>Beogas, Belgrade</i>	5.10	5.10	5.14	5.14
3	<i>Beogradske elektrane, Novi Beograd</i>	4.69	4.69	4.75	4.75
4	<i>Cyrus Energy, Belgrade</i>	4.90	4.90	4.90	4.90
5	<i>Čoka, Čoka</i>	4.97	4.97	5.22	5.22
6	<i>Drugi oktobar, Vršac</i>	4.83	4.83	5.05	5.05
7	<i>Elgas, Senta</i>	4.92	4.92	4.94	4.94
8	<i>Gas – Feromont, Stara Pazova</i>	4.70	4.70	4.78	4.78
9	<i>Gas – Ruma, Ruma</i>	5.12	5.12	5.20	5.20
10	<i>Gas, Bečež</i>	5.50	5.50	5.53	5.53
11	<i>Gas, Temerin</i>	4.95	4.95	4.97	4.97
12	<i>Graditelj, Srbobran</i>	4.85	4.85	5.01	5.01
13	<i>Ingas, Inđija</i>	4.68	4.68	4.84	4.84
14	<i>Interklima, Vrnjačka banja</i>	4.72	4.72	4.83	4.83
15	<i>Komunalac, Novi Bečež</i>	4.90	4.90	4.97	4.97
16	<i>Kovin – Gas, Kovin</i>	4.64	4.64	4.94	4.94
17	<i>Loznica – Gas, Loznica</i>	5.30	5.30	5.30	5.30
18	<i>Novi Sad – Gas, Novi Sad</i>	4.74	4.74	4.84	4.84
19	<i>Polet, Plandište</i>	4.94	4.94	5.17	5.17
20	<i>Resava Gas, Svilajnac</i>	4.97	4.97	5.02	5.02
21	<i>Sigas, Požega</i>	5.81	5.81	5.84	5.84
22	<i>Sombor – Gas, Sombor</i>	5.02	5.02	5.06	5.06
23	<i>Srbijagas, Novi Sad</i>	4.49	4.49	4.77	4.77
24	<i>Srem – Gas, Sremska Mitrovica</i>	4.59	4.59	4.76	4.76
25	<i>Standard, Ada</i>	5.10	5.10	5.20	5.20
26	<i>Suboticagas, Subotica</i>	4.67	4.67	4.81	4.81
27	<i>Toplana – Šabac, Šabac</i>	4.73	4.73	4.74	4.74
28	<i>Užice – gas, Užice</i>	4.77	4.77	4.84	4.84
29	<i>Vrbas – Gas, Vrbas</i>	4.62	4.62	4.83	4.83
30	<i>Yugorosgaz, Belgade</i>	4.20	4.20	4.41	4.41
	AVERAGE	4.54	4.54	4.86	4.86

The current natural gas public supply prices and the chronological review of these charges are available on the Agency's website (www.aers.rs).

Figure 4-6 indicates the change of average approved natural gas price for all customers entitled to public supply and for small consumption which also includes households separately.

¹⁴ In 2024, Boss Construction, Stari Trstenik applied natural gas public supply prices on the level of those of *Srbijagas*, Novi Sad.

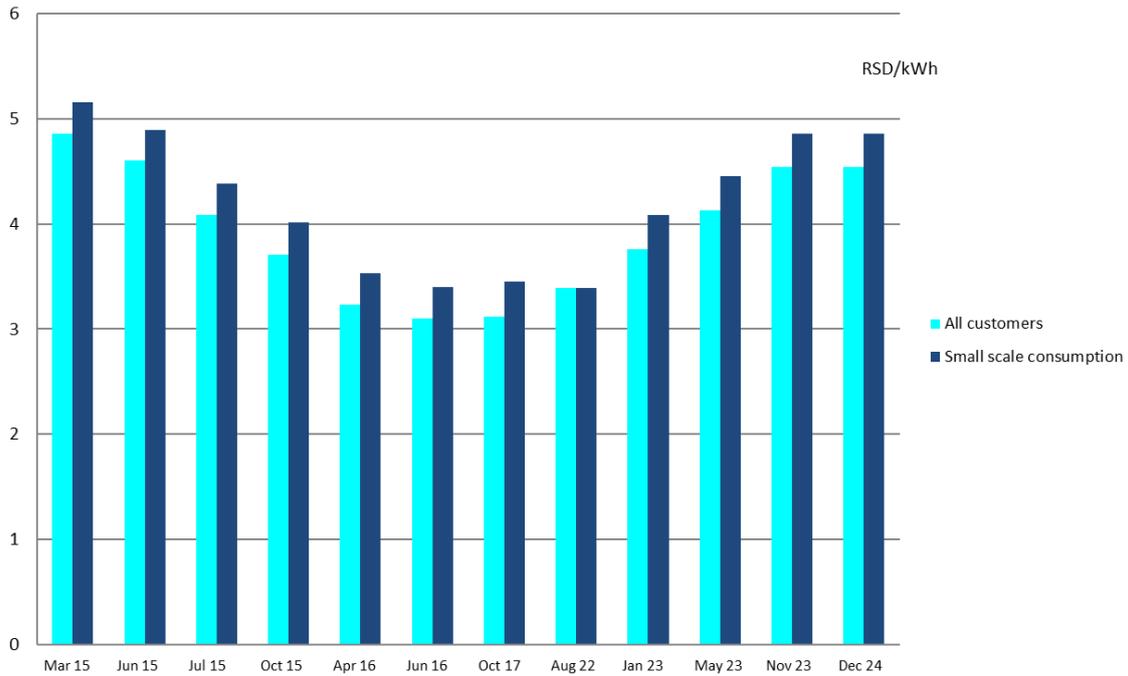


Figure 0-1: Change of average approved public supply natural gas price

The costs of natural gas purchase represent the dominant share within natural gas public supply tariff with all public suppliers. On December 31, 2024, the costs of natural gas procurement account for around 87% of the total average approved price of public suppliers. Figure 4-7 indicates the structure of average regulated natural gas public supply tariff of PE *Srbijagas* of 4.49 RSD/kWh which was applied on December 31, 2024.

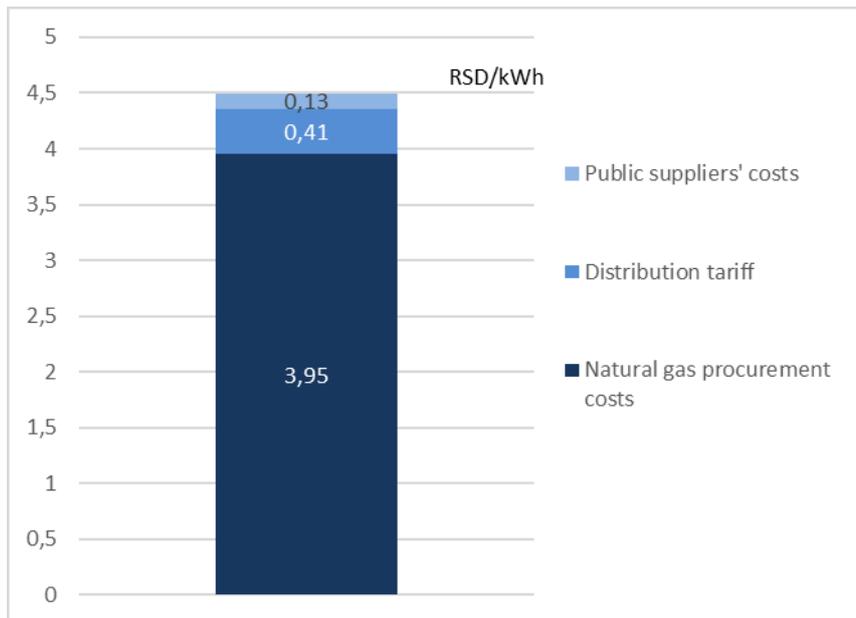


Figure 0-2: Structure of average approved natural gas public supply price of PE *Srbijagas* on 31/12/2024

Figure 4-8 indicates the comparison between natural gas prices in Serbia and in other EU countries and in the region for reference customers from the household category in the second half of 2024.

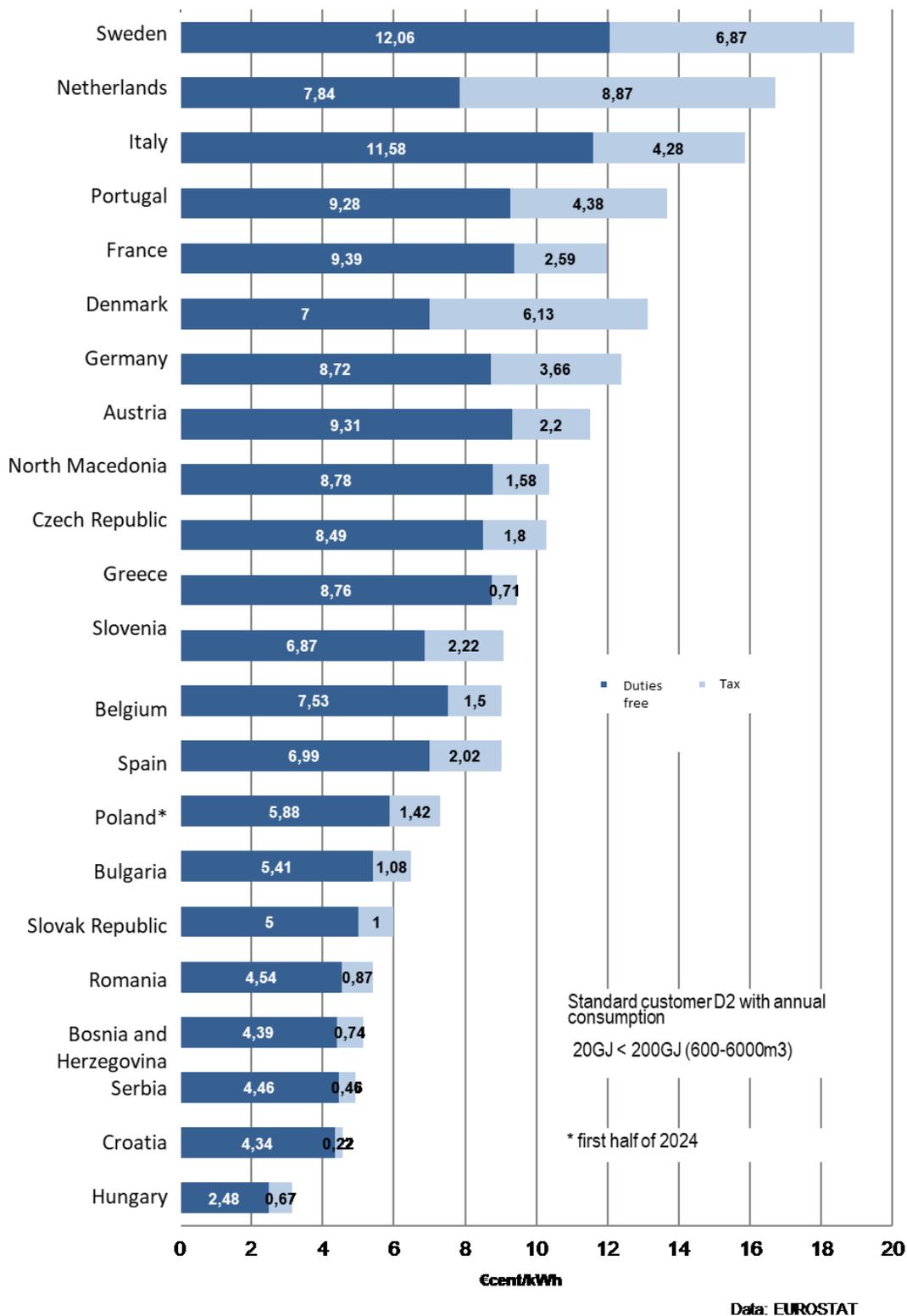


Figure 0-3: Natural gas prices for households – second half of 2024

Figure 4-9 indicates a more detailed structure of elements of the natural gas household prices in some of European capitals in December 2024.

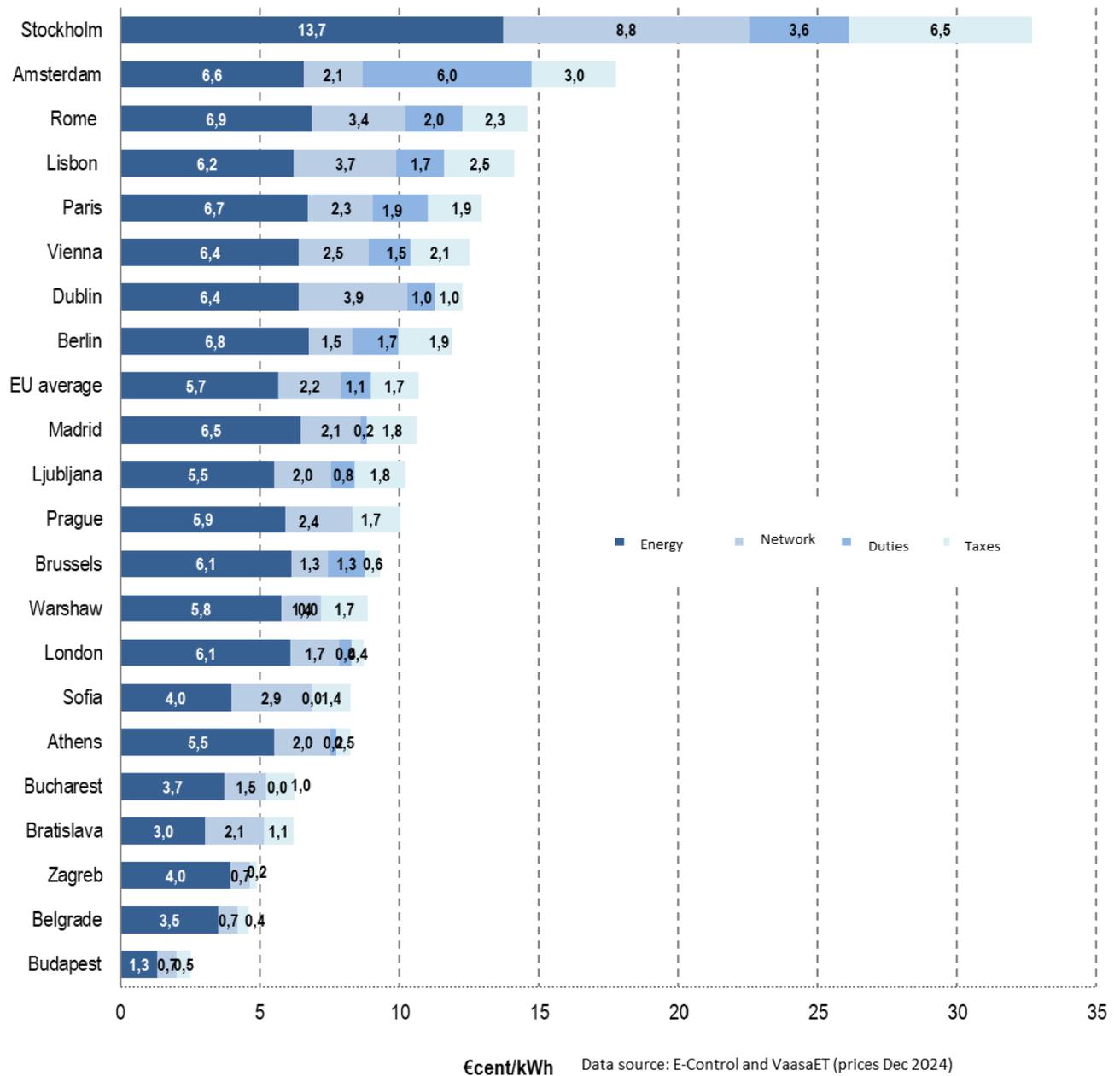


Figure 0-4: Structure of natural gas household prices in some of European capitals in December 2024

Figure 4-10 indicates the structure of the final natural gas price for households in some European capitals in December 2024 given in purchase power parity. Thereby, when comparing prices, one also took into consideration the differences in salaries, living standard and wealth between European countries. In this case, natural gas prices for households in Belgrade are slightly lower in comparison to the average price in other European capitals, which is primarily the result of a different living standard in European countries.

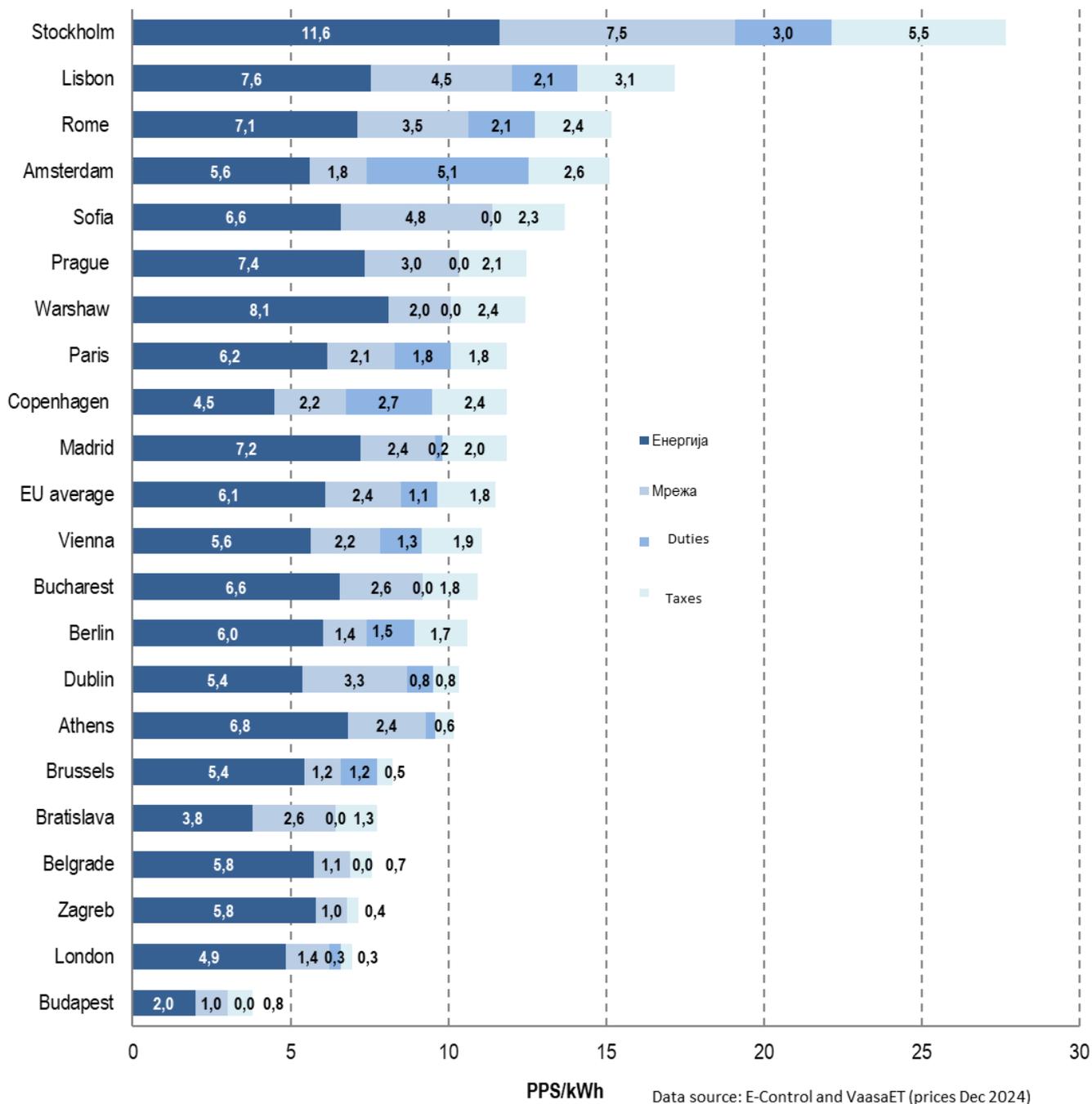


Figure 0-5: Structure of natural gas household prices in some of European capitals in December 2024 given in purchase power parity

Figure 4-11 indicates the comparison between the natural gas prices for a reference customer from the category – industry in Serbia and in other countries, either from the EU or from the region, in the second half of 2023. The variation between prices is greatly influenced by different tax policy, i.e. different duties and taxes borne by industrial consumers.

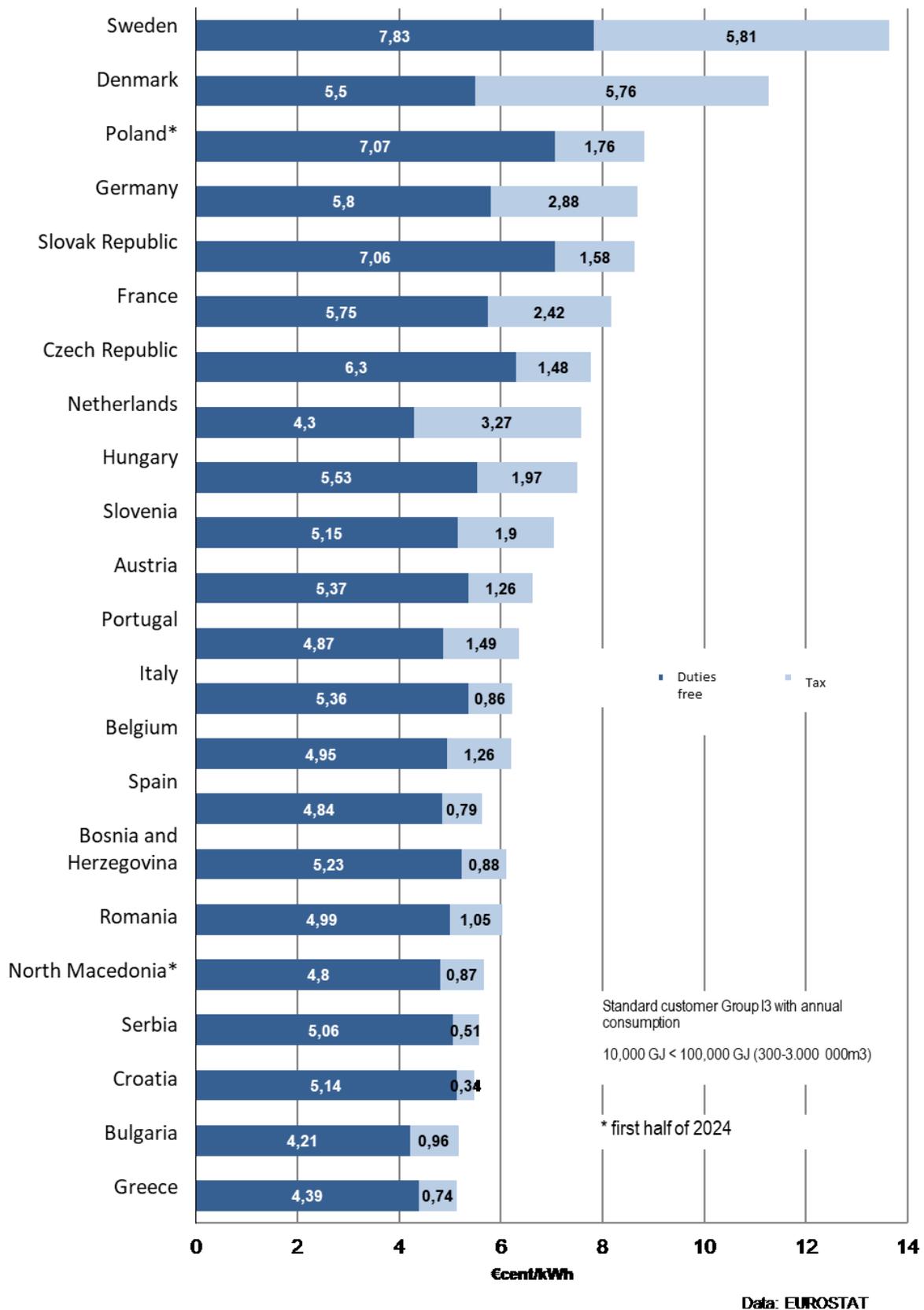


Figure 0-6: Natural gas prices for industry – second half of 2023

4.5.2.2 Supplier switching

Rules on Supplier Switching were adopted in July 2015. Based on experience in the enforcement, amendments of the Rules were prepared in 2016 and adopted in early 2017. These Rules regulate conditions and procedure for the switch of a supplier supplying final customers in line with the contract on full natural gas supply. In order to monitor this procedure, the Agency collected data on supplier switching from TSO and DSO in 2016, too and analysed difficulties suppliers and customers faced in realisation. The data on supplier switching on the transmission system relate to the metering systems which are within the system of *Transportgas Srbija* and of *Yugorosgaz-transport* LLC, since there are no final customers connected to the transmission system of *Gastrans* LLC.

Within the transmission system, out of 64 metering points for final customers, one supplier was switched on the transmission system of *Yugorosgaz-transport* LLC.

With 7 DSOs, there was supplier switch within their systems in 2024. On the distribution level, the total number of delivery points for final customers at the end of 2024 amounted to 362,983. Out of that number, suppliers were switched on 51 metering points, where 215 GWh were delivered. It amounts to 1.16% of natural gas quantities out of total 18,468 GWh delivered from distribution systems, i.e. 0.84% of 25,470 GWh of natural gas which was spent in the market (without consumption of NIS from their own production).

In total, in 2024, suppliers were switched on 52 of total 363,040 metering points for final customers within both transmission and distribution system. Out of total consumption in the market (without consumption of NIS covered from quantities from their own production which were not in the market), 0.84% of natural gas quantities were subject to gas supplier switch.

4.6 Monitoring and regulation of quality of delivery and supply

As the Law prescribes, the Agency adopts the Rules on Monitoring Technical and Commercial Indicators and on Regulating Quality of Electricity and Natural Gas Delivery and Supply. The Agency Council adopted these rules in December 2013 and they entered into force in early 2014. The Rules prescribe the method and deadlines for the collection of data from energy entities operating in the field of natural gas transmission, distribution and supply, in order to establish the system of delivery and supply quality regulation.

Reliability of system operations and natural gas quality are defined as technical indicators of quality, while timely compliance with prescribed obligations which affect the quality of natural gas delivery and supply were set as commercial indicators of quality.

These rules define that the energy entities gather the data on the indicators of natural gas delivery and supply in a systematic and the same way and inform the Agency on this once a year.

Data collection is performed on annual level. It was initiated in 2015 in order to enable the Agency to monitor the quality of delivery and supply and compare the results of energy entities which perform the same energy activity based on submitted data and reports.

4.6.1 Continuity of delivery

The continuity of natural gas delivery is set on the basis of the number and duration of interruptions in natural gas delivery and it is monitored both on the transmission and distribution system. The data on continuity of delivery on the distribution system were submitted by 31 DSOs. Based on the submitted data, annual indicators of continuity of delivery were calculated.

4.6.1.1 Continuity of delivery from transmission systems

The data on the continuity of delivery within transmission systems which are monitored are the following:

- number of planned and unplanned interruptions;
- duration of interruptions and
- time of announcement of planned interruptions.

Table 0-2: Interruptions within transmission systems indicated per different causes

TSO	Interruption causes					
	planned interruptions		unplanned interruptions		vis major	
	number of interruptions	total duration (min)	number of interruptions	total duration (min)	number of interruptions	duration
<i>Transportgas Srbija</i>	18	58.470	1	540	0	0
<i>Yugorosgaz-Transport</i>	0	0	0	0	0	0

In 2024, natural gas transmission system operators submitted data on the number and duration of planned and unplanned interruptions in line with the causes of interruptions and these data are given in Table 4-17.

Within the Transportgas Serbia transmission system, there were 18 planned interruptions, which is significantly fewer than the 28 planned interruptions in the previous year. However, in 2024 these interruptions lasted 58,470 minutes, which is more than twice as long as the 23,430 minutes that planned interruptions lasted in 2023. In accordance with the quality rules, the stated cause was planned works on the gas pipeline, which were system operator activities in all 18 cases. During 2024, one unplanned interruption occurred, caused by equipment failure on the gas pipeline. The scope of these planned maintenance works on gas pipeline facilities was significantly smaller than in the previous year, but their duration was considerably longer, whereas in the previous year there were 28 planned interruptions with a total duration of 23,430 minutes. Within the Jugorosgaz-Transport transmission system, there were no events that led to interruptions in the supply of natural gas.

4.6.1.2 Continuity of delivery from distribution systems

Natural gas distribution system operators submitted data on the number and duration of interruptions for 2024 according to the causes which led to interruptions longer than 60 minutes, and these served for the calculation of delivery continuity indicators SAIFI¹⁵ and SAIDI¹⁶ both for planned and unplanned interruptions. The data were given in total for all distribution system and maximum and minimum SAIFI and SAIDI realised in single distribution system. Summary data on the continuity of delivery from distribution system refer to 362,983 delivery points, i.e. on 100% delivery points.

Table 0-3: Summary indicators of continuity of distribution systems for unplanned interruptions

Interruption cause	Unplanned interruptions				
	Number of interruptions	SAIFI (number of interruptions/user)	SAIDI (min/user)	Maximum reached SAIFI	Maximum reached SAIDI
Delivery reduction from upstream system	5	0,00	0,34	0,01	0,78
Gas leak	51	0,02	6,76	0,06	14,88
Third party	177	0,02	8,17	0,98	1.062
Inadequate network capacity	0	0,00	0,00	0,00	0,00
Other reasons	0	0,00	0,00	0,00	0,00
Total	233	0,04	15,28	1,05	1.077,66

As it was the case previous years, the data show that there were no unplanned interruptions caused by inadequate network capacity and the greatest number of unplanned interruptions in 2024 was caused by the third party operation. In comparison to last year, the number of unplanned interruptions caused by third party increased considerably, while the number of interruptions caused by gas leak slightly increased.

Table 0-4: Summary indicators of continuity of distribution systems for planned interruptions

Interruption cause	Planned interruptions				
	Number of interruptions	SAIFI (number of interruptions/user)	SAIDI (min/user)	Maximum reached SAIFI	Maximum reached SAIDI
Cause within a system connected to it	39	0,04	14,17	1,00	1320,00
Administrative interruption	1	0,00	0,05	0,48	200,87
Operator's interruption	168	0,23	75,09	0,52	170,77
Uncategorized interruption	1	0,00	2,77	1,00	600,00
Total	209	0,27	92,09	3,00	2.291,64

When continuity indicators SAIFI and SAIDI for planned interruptions are analysed, calculated based on available data, in terms of interruption duration per user, interruptions caused by distribution system operator's activities had the biggest impact on customers followed by interruptions caused by interruptions within the connected system.

Summary data on delivery continuity within all distribution systems for which data were submitted both in terms of planned and unplanned interruptions are given in Table 4-20.

¹⁵ SAIFI (number of interruptions/delivery point) - average frequency of interruptions per each user; it is calculated as a quotient of the cumulative number of interruptions and total number of users

¹⁶ SAIDI (min/user) - average duration of interruptions in minutes per user and it is calculated as a quotient of cumulative duration of interruption and total number of users

Table 0-5: Summary continuity indicators of distribution systems

Type of interruptions	Summary continuity indicators		
	Number of interruptions	SAIFI (number of interruptions/user)	SAIDI (min/user)
Planned interruptions	209	0,04	15,28
Unplanned interruptions	233	0,27	92,09
Total	442	0,31	107,37

4.6.2 Commercial quality

Rules on monitoring quality also define the data which system operators and suppliers have to register in order to enable monitoring commercial quality.

The data which are collected are grouped in four areas which describe commercial quality:

- 1) connection, suspension and disconnection;
- 2) access to the system;
- 3) metering and charging and
- 4) customer service.

In 2024, the data on commercial quality were collected on the annual level and it still takes time for them to achieve adequate level of reliability and accuracy. Out of 31 DSOs which performed the activity in 2024, data were submitted by all distributors.

4.6.2.1 Connection, disruption and disconnection

The data related to settling applications for connection are given in total in Table 4-21. Application for connection

Table 0-6: Application for connection

Applications for connection			
Number	of filed applications		23.682
	of settled applications	approving connection	19.013
		denying connection	285
		settled otherwise	2.203
		Total	21.501
	within 15 days	11.406	
%	of settled applications in comparison to the number of filed ones		90,8
	of applications approving connection in comparison to the number of settled ones		88,4
	of settled applications within 15-day deadline		53
Average time	necessary for settling an application – days		16

Once the connection has been constructed and all conditions for connection have been met, operators have a deadline of 15 days to connect the facility to the distribution system. Data on facility connections are presented in aggregate form in Table 4-22. The data show a slight increase in the number of requests for connection compared to the previous year, but also a significant deterioration in service quality related to the processing of connection requests, as the percentage of requests resolved within the legally prescribed 15-day deadline fell from 74% to 53%. This result is largely driven by the data of the largest distributor, which also has the highest number of submitted connection requests. As for the connection itself, the percentage of facilities connected within the prescribed 15-day deadline decreased significantly from 98.06% in the previous year to 85.23% in 2024, while the average time required for connection increased from 11 to 15.5 days.

Table 0-7: Connection of facilities

Connection		
Number	of connected facilities	17.747
	of facilities connected within a 15-day deadline	15.126
%	of facilities connected within a 15-day deadline	85,23
Average time - days	Necessary for connection since the day all conditions are met	15,5

4.6.2.2 Access to the system

Since natural gas market has become open for all customers since the beginning of 2015, one could expect that customers' suppliers which entered the market will be submitting applications for the access to the systems to which the facilities of these customers are connected. Although the supplier switch is still not that common, there was not DSO appealing against an act of the system operator on the access to the system.

4.6.2.3 Metering and billing

11,111 objections were submitted against billing in 2024 which is less than 13,313 in 2023. Justified objections which were submitted against billings included the following causes: inaccurate reading 91.1%, inaccurate billing (energy section) 0.94%, inaccurate invoicing 2.27%, inaccurate metering 3.7%, and other 1.99%. In 2024, time necessary for settling objections to billing lasted between 1 and 5 days depending on the distribution system operator. As well as it was the case in previous years, one may notice that among objections against billing the greatest number of them relate to inaccurate reading while there is a significantly smaller number of inaccurate metering. There was a slightly lower percentage of objections to mistakes in invoicing in 2024. The number of other reasons for objections against billing is very low.

The total number of filed applications filed by users – final customers for extraordinary check of metering equipment in 2024 amounted to 102 and 102 checks were performed. During these checks, there were 79 noticed irregularities (77.53% of checks made) and all of 79 irregularities were removed. The number of extraordinary checks of metering equipment which were done within the prescribed deadline of 10 days amounted to 39 (38.24%). In 2024, the number of applications for extraordinary check of meters was close to the one last year and a relatively low number of irregularities was noticed, but the percentage of extraordinary controls realised within the prescribed timeframe was very low.

4.6.2.4 Call centre

Although efforts were made in order to organise data collection on this aspect of commercial quality as well, the data on call centres are still not available.

4.7 Security of natural gas supply

So as to provide long-term security of natural gas supply, it is extremely important to plan the system development adequately and this is realised by transmission system operators via the elaboration of ten-year development plans.

As transmission system operators, *Transportgas Srbija* LLC and *Yugorosgaz-transport* LLC were obliged to draft and submit ten-year transmission system development plans to the Agency for approval every year. *Gastrans* LLC is not obliged to do so, but they have to organise market test for the construction of new capacities of the upgrade of existing capacities within their gas pipeline every second year.

Transmission System Development Plans were not approved in 2024 to the transmission system operators *Transportgas Srbija* LLC and *Yugorosgaz-transport* LLC.

The initiation of the commercial operation of the gas pipeline of *Gastrans* LLC on January 1, 2021, the second supply direction became available for Serbia and this is how, the infrastructure supply standard N-1 in the Republic of Serbia was met since it increased from 33.8% to 103%.

At the beginning of 2024, the Niš–Dimitrovgrad gas pipeline entered trial operation, thereby completing the connection with the Bulgarian transmission system. The length of this pipeline within the territory of the Republic of Serbia is 109 km, and its maximum capacity is 1.8 billion m³ per year. Non-refundable funds from European Union funds in the amount of EUR 49.6 million were secured for the construction of the pipeline section in the Republic of Serbia. Trial operation of this interconnector began in December 2023, enabling diversification of supply sources and further increasing security of supply, as well as raising the value of the N-1 infrastructure standard in the Republic of Serbia to 114%. The value of the N-1 infrastructure standard would be even higher if there were no limitations resulting from the minimum inlet pressure from Bulgaria and insufficient capacities of certain sections of the transmission system in Serbia.

4.7.1 Natural gas consumption forecast

Natural gas consumption in Serbia in 2024 was 0.8% lower than in 2023, which itself was 2.7% lower than in 2022, and 6.3% lower than in 2021, the year in which consumption was the highest in the last 30 years. Higher air temperatures during the winter months in the first quarter of 2024 led to reduced natural gas consumption for heating purposes, even compared to 2023 and 2022, which also recorded above-average winter temperatures. A comparison of natural gas consumption in 2024 with 2023 shows an increase in consumption by district heating plants of 2.3%. Household consumption increased by 11.1%, while the number of delivery points increased by 6.0%. In the industrial sector, natural gas consumption in 2024 was 4.2% lower than in 2023.

Natural gas consumption forecast in the future is uncertain since there are important elements which may both lead to the increase and to the decrease in the natural gas consumption:

- natural gas consumption in existing combined heat and power plants which will be engaged bot for the production of heat for heating purposes and for power production, depending on the energy market price trend;
- uncertain work of industrial plants which represent important natural gas consumers;
- replacement of coal-fired and oil derivatives-fired boilers with natural gas-fired boilers in state institutions or connection of state institutions to district heating companies in order to reduce air pollution;
- connection of new natural gas consumers to existing distribution networks;
- gasification dynamics in Serbia via the construction of new transmission gas pipelines and distribution networks;
- energy efficiency measures which lead to the reduction of unit energy consumption both in the industry and in residential construction;
- use of renewable energy sources for heating;
- natural gas price.

4.7.2 Projects aimed at the increase of security of supply

The underground storage Banatski Dvor with maximum withdrawal capacity amounting to 5.1 million m³/day has a positive impact on the security of natural gas supply. Out of the total volume of commercial gas from the underground storage of 450 million m³, 49% belong to PE *Srbijagas*, i.e. around 220.5 million m³ which is less than 10% of the annual natural gas consumption in Serbia. The increase of the commercial gas volume to the level of around 25% of the annual consumption which is the average level in the EU countries would increase the security of natural gas supply in Serbia considerably. An investment to increase the working gas volume of the underground gas storage to 750 million m³ and to raise the withdrawal capacity to 10 million m³/day has been initiated, and it has been announced that it will be completed by the end of 2026.

To enhance security of supply, interconnection with the gas pipeline systems of other neighboring countries may also be significant, primarily with those countries that have well-developed gas infrastructure and additional options for securing natural gas supplies. Priority should be given to interconnection with the Romanian transmission system, given the lowest interconnection costs and the fact that Romania is expected to become a natural gas exporter with the start of commercial production from the Neptun Deep gas field in 2027.

5. CRUDE OIL, OIL DERIVATIVES, BIOFUELS, BIOLIQUIDS, COMPRESSED NATURAL GAS, LIQUIFIED NATURAL GAS AND HYDROGEN

5.1 Sector structure

The amendments to the Energy Law in 2021, 2023 and 2024 established the legal and institutional framework for the implementation of necessary activities aimed at adjustments and harmonization of the oil sector of the Republic of Serbia with the *acquis communautaire* of the EU in the energy field, the deficiencies of the 2014 Law were removed and the implementation of regulations became more efficient. Among other things, amendments introduced new energy activities and licences in the sector which includes production and/or trade in crude oil, oil derivatives, biofuels, bioliquids, hydrogen as well as compressed and liquefied natural gas while some existing activities, i.e. licences expanded their scope; the mandatory stock obligation was elaborated and types of oil derivatives which certain energy entities should keep were defined and thereby, preconditions were created for the upgrade of energy safety level; the jurisdiction of inspectors within inspection monitoring were defined precisely; the issue of strategic energy projects in the oil field was regulated, etc. In addition, some of the provisions of this law were harmonized with the law regulating facilities legalization, with regulations regulating planning and construction and with the law regulating sale and ports in internal water flow in the segment related to trade of fuels for watercraft.

In line with the Law, licenced energy activities in the field of oil, oil derivatives, biofuels, bioliquids, hydrogen, compressed and liquefied natural gas include:

- oil derivatives production;
- oil transport through oil pipelines;
- oil derivatives transport through product lines;
- trade in oil, oil derivatives, biofuels, bioliquids, compressed natural gas, liquefied natural gas and hydrogen;
- trade in motor fuels and other types of fuels on petrol stations;
- storage of oil, oil derivatives and biofuels;
- biofuels production;
- bioliquids production;
- trade in fuels outside petrol stations;
- filling vessels for liquid petroleum gas, compressed and liquefied natural gas;
- trade in fuels meant for vessels
- blending biofuels with fuels of oil origin
- blending bioliquids with fuels of oil origin and
- hydrogen production.

Oil transport via oil pipeline and oil derivatives transport via product line are the activities of general interest in line with a separate law and there is a regulated use-of-system charge while other licenced activities are performed in line with market principles.

5.1.1 Organisational and ownership structure of the oil sector

The Company for Exploration, Production, Processing, Distribution and Trade of Oil and Oil Derivatives *Naftna industrija Srbije* JSC (hereinafter: *NIS*) is the dominant oil and oil derivatives market player in Serbia. Vertically integrated company *NIS* has been on the stock exchange since 2010. After its privatisation, in the initial ownership structure, the Russian company “Gazprom neft” had 51%, while the Republic of Serbia had 49%. Out of the shares owned by the Republic of Serbia, shares were allocated to former workers and other citizens. In the years that followed, the Russian shareholder purchased shares from small shareholders and, thereby, until the beginning of 2022, the Russian shareholder held around 56% of the ownership shares. Due to emergency situation in international relations, there was a disruption in the crude oil of Russian origin supply in the European markets in 2022. “Gazprom neft” which used to be the major shareholder in *NIS* reduced its share in the main capital of *NIS* from 56.15% to 50% in May 2022 and by this transaction, “Gazprom” company acquired 6.15% of shares of this company. The Republic of Serbia holds slightly less than 30%, while around 14% are owned by a great number of small shareholders. The modification of ownership structure created conditions for unhindered operations of *NIS* in the market in 2023 as well as in 2024. *NIS* deals in refinery processing of crude oil, owns the greatest retail network and the greatest storage capacities for all motor fuels and crude oil. The companies with the highest share in the oil and oil derivatives market include international companies *Lukoil*, *OMV*, *MOL Serbia*, *ECO-Serbia*, *Petrol*, as well as local companies *Knez Petrol*, *Europetrol*, *Art Petrol* and *Radun AVIA*. A considerable number of these companies operated in wholesale mostly with reservoirs lent from third parties, i.e. from storage owners. In contrast to this, in the field of retail, a great number of companies either fully or mainly perform their activities on petrol stations owned by them.

Joint Stock Company for Oil Transport via Oil Pipelines and Oil Derivatives Transport via Product Lines *Transnafta* Pančevo (hereafter *Transnafta*) transports oil through oil pipelines and was awarded with the licence for the performance of this activity for the second ten-year period in 2016. In 2019, status change of the that company occurred, i.e. it ceased to be a public company and it became a closed joint stock company 100% owned by the Republic of Serbia.

In the Republic of Serbia, there is no infrastructure for public transport of oil products through product lines except in those companies which use this means of transport for their own purposes.

5.2 Production and transport capacities

5.2.1 Production of oil, oil derivatives, biofuels, bioliquids and hydrogen

Production of oil derivatives also includes all other technological processes which result in standardized products with prescribed quality apart from the process of production of oil derivatives by refining crude oil, by degasification or by separation of light liquefied hydrocarbons.

Until the end of 2024, there were six energy entities licensed for oil derivatives production: *NIS* which obtained the licence for this activity in 2016 for the second ten-year period, *Petrol LPG* from Belgrade, *VML* from Jakovo, *Euro gas* from Subotica *Hipol* from Odžaci and *Biogor Oil* from Sukovo. In addition, the Law defined biofuels production as a separate activity and, therefore, licenced activity – biofuels production now includes the processes of obtaining standardized motor fuels meant for vehicles, while the licenced activity – bio liquids production includes processes of obtaining standardized energy fuels of bio origin meant for heating and cooling.

The right to blend biofuels with fuels of oil origin is given to those energy entities owning specific energy facilities for homogenisation of these fluids and which were awarded with a licence for the performance of this activity. In the same way, amendments to the Law from 2021 introduced blending bioliquids with fuels of oil origin as an activity. Filling vessels with liquid oil gases which are used for energy purposes, such as propane, butane and propane-butane blend as well as filling vessels with compressed, i.e. liquified natural gas is also an energy activity and that licence was held by 29 energy entities by the end of 2024.

The only *Best Lubricants* from Tomislavci energy entity was licenced by the end of 2024 for the performance of biofuel production and bioliquids production. *NIS* is the only entity licensed for biofuel blending with fuels of oil origin while there are no licenced energy entities for blending bioliquids with fuels of oil origin.

The adjustment of the local legal and institutional framework with the European Union *acquis communautaire* in the energy field was also performed by the introduction of energy activity – production of hydrogen as motor fuel which may be traded further either in terms of wholesale or retail. The Rulebook on Energy Licence and Certification envisages that hydrogen can be produced by electrolysis, reforming or pyrolysis, via the use of biogas and other renewable energy sources as well as via the use of natural gas and other fossil fuels. In such a manner, the licencing of production of green, grey and blue hydrogen was enabled, and thereby, the use of hydrogen regardless of the origin and method of production was enabled until full switch to green hydrogen production and consumption solely. No licence was issued until the end of 2024 for the performance of this activity.

In line with the Law, oil derivatives, biofuels, bioliquids, compressed natural gas, liquefied natural gas and hydrogen which are placed in the market have to comply with conditions defined by regulations on quality, regulations on environment protection, regulations on protection from fire and explosion as well as technical regulations and other regulations which refer to motor and energy fuels trade. Crude oil production, import and refinery processing in Serbia are performed exclusively by *NIS*. Oil exploitation is performed on 67 oil fields with 866 wells. In addition to these, additional 52 development wells and 5 exploratory wells were drilled in 2024.

In 2024, the total consumption of crude oil and semi-finished products from domestic production, imports, and stocks was 3.620 million tons, which is 11% less than in 2023. Serbia produced about 0.801 million tons of crude oil (22.13% of total consumption) in 2024, while 2.819 million tons (77.87% of total consumption) were supplied through imports. Unlike in 2021, when the share of Russian crude oil in total imports was 23%, and 47% in 2022, in 2023, for the first time in the history of the Serbian oil industry, there was no import of Russian crude oil with the same trend in 2024 as well. This is a result of the introduction of the sixth package of sanctions against the Russian Federation in May 2022, which included a ban on using European infrastructure for the transport and processing of Russian crude oil after December 5, 2022. These political measures led to greater diversification in the origin and types of crude oils imported as of 2023, with imports coming from Azerbaijan (Azeri), Iraq (Basrah medium), Kazakhstan (CPC, KEBCO), Norway (Johan Sverdrup), Nigeria (Bonga, Bonny light), Egypt (Qarun), and Libya (Al Jurf and Es Sider).

Crude oil processing is performed in the oil refinery in Pančevo where modernisation began in 2009 and the first cycle of modernisation was completed in 2013 (light hydrocracking and hydro processing modules and production of motor fuels with "Euro 5" quality exclusively). In November 2020, the deep processing plant with delayed coking was commissioned. The construction of the plant began in 2018. The successful completion of this project enables *NIS* to have an increased production of fuels which are highly valorised in the market – diesel, petrol and liquid oil gas

well as to start producing oil coke. In addition, energy efficiency of the refinery was improved and local oil coke started to be produced. The Deep Processing Project also created ecological benefits, first of all the cease of production of heating oil (mazoute) with a high content of sulphur. In such a manner, the quality of all produced motor and energy fuels is harmonised with the EP Directive 2016/802 which is how conditions were created for amendments in the local legislation and, in 2020, a new Rulebook on Technical Requirements and Other Requirements for Liquid Fuels of Oil Origin ("Official Gazette of RS", No. 150/20) was adopted and it included as an annex the Rulebook which is harmonised with amendments in the local legislation in 2021 and 2022 ("Official Gazette of RS", No. 127/2021 and 128/2022). In addition, the emission of sulphur and nitrogen oxides as well as powder particles were reduced largely which improves the ecological sphere additionally. In 2021, the reconstruction of the facility for catalytic cracking, i.e. FCC (Fluid Catalytic Cracking) Facility commenced as well as the construction of a new facility for high oktane petrol components high-octane petrol components (ETBE). Works on the reconstruction of FCC and on the construction of the ETBE facility were continued in 2024. Following the completion of works, the reconstructed FCC will have greater flexibility and optimization of technological process, i.e. a possibility of operation in petrol and polypropylene regime depending on market demand as well as it will have significant ecological benefits. In addition to the reconstruction of the listed facilities, a major overhaul of the Pančevo Oil Refinery was carried out in 2024. In terms of scope and complexity, it was the largest in the refinery's history, significantly increasing the efficiency and reliability of its operations.

After 2020 which was affected by the crisis caused by pandemia, 2021 was a year of stabilization and, in 2022, there was a significant growth in motor fuels consumption of 7.9% in comparison to last year. In 2023, there was a slight decline in consumption of 1.1% while in 2024 consumption increased by 1.8% compared to the previous year, representing a natural market fluctuation.

Despite a 2.2% decrease in the average price of Brent crude oil compared to 2023, with an average price of USD 80.8/bbl, 2024 recorded an 11% decline in processing volume (3.620 million tonnes) compared to 2023, as shown in Figure 5-1. The decrease in processing volume is a result of the major overhaul carried out in 2024.

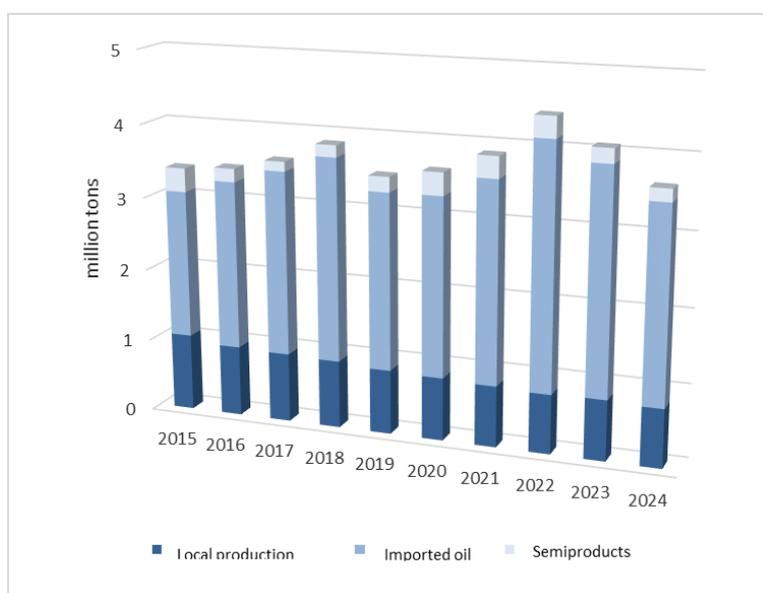


Figure 5-1: Crude oil refinery processing in Serbia in 2015 - 2024

Domestic crude oil production reached its peak in 2013. Compared to that year, crude oil production in 2024 was approximately 35% lower. Domestic crude oil production in 2024 was about 2% lower than in the previous year. In addition, imports of crude oil and semi-finished products in 2024 were approximately 4.2% lower than in the previous year. The share of domestic crude oil in total refinery processing was 18.6% in 2008, about 49.5% in 2012, and 22.13% in 2024, which is around 0.77% higher than in the previous year.

In Serbia, apart from production in Pančevo refinery, oil derivatives in the specific part of production and liquid oil gases are produced in N/S factory for stabilization, i.e. preparation of natural gas for transport in Elemir (propane and gas condensate) as well as in the facilities of the energy entity Hipol (propane as well as pentane-hexane fraction, i.e.), where imported gas condensate, a wide light hydrocarbons fraction is used as raw material. The production of propane-butane blend and autogas, based on blending components is performed by Petrol LPG in their plant in Smederevo, by company VML in their plant in Jakovo and by company Euro gas in their plant in Subotica.

Petroleum products, as final products, are supplied not only from refinery processing but also through imports and inventories. In 2024, approximately 1.025 million tonnes of petroleum products were imported, which is about 13.9% more than in 2023, also as a result of the major overhaul of the Pančevo Oil Refinery. In 2024, 0.572 million tonnes of petroleum products were exported, which is at a similar level to the previous year.

Retail sales of petroleum products increased by about 1.5% compared to 2023. The growth in retail sales in 2024 was driven by intensified infrastructure works and increased transport activity and consumption in the mining sector. On the other hand, seasonal transit traffic had a lower impact on retail sales due to higher motor fuel prices compared to the markets of neighboring countries.

Total motor fuel consumption in 2024 amounted to approximately 2.84 million tonnes, which is about 1.9% higher than in the previous year. In the structure of total motor fuel consumption, gasoline accounted for 18.1%, gas oils for 78.1%, and LPG (autogas) for 4.7%. Total gasoline consumption increased by 4.9% compared to 2023, while consumption of Euro diesel gas oil increased by 1.5%. At the same time, consumption of extra-light Euro L gas oil decreased significantly by 12.2% (in 2023 it was already 14.1% lower than in 2022), while total consumption of liquefied petroleum gases, including autogas, declined by 2.4%.

This is the twelfth year in a row with autogas consumption drop, which is a consequence of abandonment trend of use of this alternative fuel in vehicles, due to relatively high price of this fuel in comparison to other fuels as well as due to higher costs of the issuance of certification of validity of the vehicle machinery using autogas - every five years. The use of this fuel is cost-reflective only for vehicles which are driven for a large number of kilometres annually. The consumption of compressed natural gas for running vehicles is growing but there are no precise statistical data on this. The number of public stations for supplying vehicles with compressed natural gas has increased to 43, but not all of these stations have yet been recorded in the licenses. Since no registry has a record of this, the number of internal stations used for supplying vehicles with compressed natural gas for internal purposes is not known. Small quantities of liquefied natural gas which can be used as energy fuel or as motor fuel and for the drive of vehicles were imported in 2024 with the trend of growth in imports and consumption of this energy source compared to the previous year being significant. There is one vehicles supply station for this energy carrier in the Republic of Serbia.

According to the data available to the public, there are 3,159 million vehicles registered in the Republic of Serbia. 2.8 million Vehicles which use petrol, eurodiesel, LNG-autogas, compressed natural gas as drive fuel or are electricity-fuelled which represents a 4.5% growth in comparison to 2023. The total number of electricity-fuelled vehicles or hybrid-fuelled vehicles is still small which is why it does not affect the structure of the total motor fuel consumption largely but the relative increase of the number of such vehicles which are registered is big on the annual level and it amounts to around 65%. A similar conclusion is made with vehicles using compressed natural gas – the number of those vehicles which were registered increased by 22% in comparison to last year. The drop of the number of vehicles using autogas which were registered kept dropping by 4.4% in comparison to 2023, i.e. by 27.5% in comparison to 2015 and this is followed by resulting drop of consumption of this energy carrier for the given reasons.

Requirements in terms of quality of oil derivatives which are in the market, as well as the procedure for assessment of harmonisation of quality with the prescribed one are regulated in the Rules on Technical Requirements and Other Requirements for Liquid Fuels of Oil Origin ("Official Gazette of RS", No. 150/20, 127/21 and 129/2022 in force until 23/11/2023 and 104/2023, 21/2024, 94/2024 and 106/2024), i.e. in the Rules on Technical Requirements and Other Requirements for Liquid Petroleum Gas ("Official Gazette of RS", No. 97/10, 123/12 and 63/13). These Rules also define labelling of installations used for oil derivatives trade.

The Decree on Oil Derivatives Authentication ("Official Gazette of RS", No.51/15, 5/17 and 115/2022) closely prescribes the conditions, methods and procedure of authentication of oil derivatives which are traded within the market. Amendments to this Decree from 2022 introduced authentication of heating oil which is now among oil derivatives which have been authenticated until then such as lead-free petrol, gas oil EURO DIESEL, diesel fuel GAS OIL 0.1 and liquid oil gas.

5.2.2 Oil and oil derivatives transport

Oil is transported mainly through the oil pipeline between the Adriatic Sea port Omisalj through Sotin in the Republic of Croatia. The connection point of the pipeline in Serbia is in Bačko Novo Selo on the River Danube and it goes to the refinery in Pančevo through Novi Sad. Oil pipeline from Omišalj to Pančevo was commissioned as a unique functional whole in 1979. A part of it in the Republic of Croatia is operated by the company Janaf, while a part of it in the Republic of Serbia is operated by Transnafta. In addition to the branch Backo Novo Selo-Novu Sad with nominal transport capacity of 9 million tons annually and the branch Novi Sad- Pančevo with nominal transport capacity of 6 million tons of crude oil annually. Novi Sad terminal is also an integral part of this system, equipped with the pump and metering station and with technological tanks which are used as crude oil storage, primarily with a purpose of storing mandatory reserves.

Transnafta is the company licensed for oil transport through oil pipelines which is a regulated energy activity. A smaller scale of imported crude oil is transported by barges by the River Danube, while the local oil is also transported by road tankers from the exploitation fields to oil refineries (these types of transport are not licensed energy activities).

Since 2005, when PE *Transnafta* was established, until the end of 2024, around 57 million tons of oil was transported in total. Transport of imported oil was lower during the period of the first refinery modernisation cycle in 2011 and 2012. In 2024, 0.709 million tons of local oil and 2.677 million tons of imported oil were transported. It represents a decrease of local oil transport of 6.95% and a decrease of imported oil transport by 12% in comparison to last year. The highest local oil transport was recorded in 2013 when it was by around 39.35% higher than in 2024. The lowest imported oil transport was recorded in 2012 when it was by around 57.39% lower than in 2024.

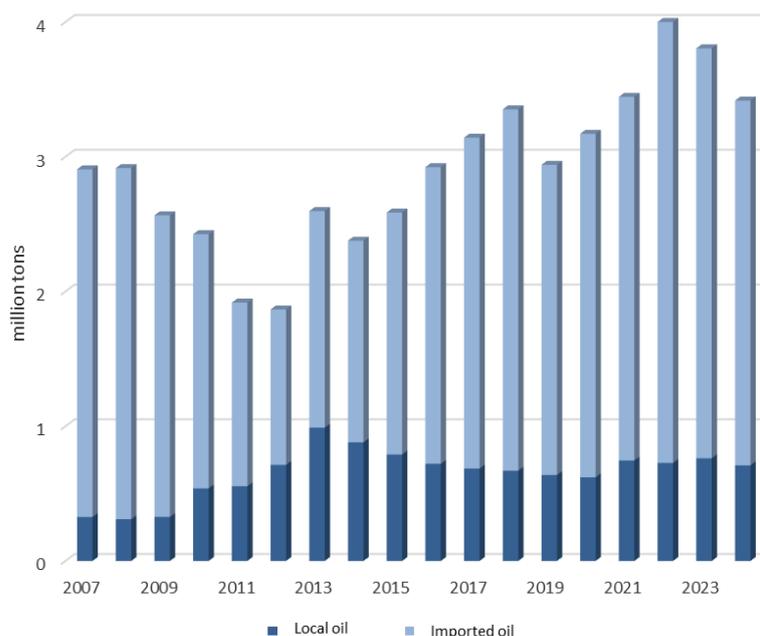


Figure 5-2: Crude oil quantities transported by oil pipeline of “Transnafta” in the period 2007 – 2024

In 2024, approximately 10% less crude oil was transported than in the previous year, primarily as a result of reduced processing due to the major overhaul of the Pančevo Oil Refinery and the consequently higher imports of petroleum products. Observing the period since regulation of this activity was introduced (Figure 5-2), it can be seen that compared to 2012, when transport volumes were at their lowest, crude oil pipeline transport in 2024 was about 83% higher, while compared to 2022, when volumes were at their highest, crude oil transport in 2024 was about 15.6% lower.

5.3 Regulation of energy entity for transport of oil and oil derivatives

5.3.1 Unbundling of energy entity for transport of oil and oil derivatives

Transport of oil via oil pipelines as regulated activity of general interest is performed by *Transnafta* at regulated prices and under prescribed and publicly announced conditions in line with principles of non-discrimination, separately from other energy-related and non-energy-related activities.

Legal unbundling is not legally binding in case of pipeline transport of oil. In case of *Transnafta*, there was unbundling in terms of accounting between crude oil transport and other activities for which this energy entity is licensed (activity -trade in oil, oil derivatives, biofuels, bioliquids, compressed natural gas, liquefied natural gas and hydrogen and activity – storing oil, oil derivatives and biofuels).

5.3.2 Access to the system for oil and oil derivatives transport

The access to the system for oil pipeline transport is prescribed by the Law. The rights and obligations of the entity performing oil transport via oil pipeline as well as the rights and obligations of system users are regulated in more detail by the Oil Transport Network Code. The same code also prescribed physical-chemical characteristics of crude oil which may be transported via pipeline system, technical conditions for safe system functioning; payment security instruments, rules of procedure in case of emergency; metering method, functional requests and meter accuracy classes. In 2010, with the approval of the Agency, *Transnafta* adopted Oil Transport Network Code for the first time. Due to the change of the legal form of *Transnafta* which transformed from the public entity into joint stock company, to amendments to the Energy Law as well as to regulations in the field of pipeline transport, environment protection, fire protection, meteorology and other regulations regulating this field, with the approval of the Agency, *Transnafta* adopted an amended version (ver.2.0) of the Oil Transport Network Code which entered into force on 20/05/2023 but

its enforcement started as of 01/01/2024. Since there are still no product lines publicly used, the conditions were not created for the adoption of the relevant code.

In line with the Law, energy entities performing oil transport via oil pipelines or oil derivatives transport via product lines are obliged to set the dynamics of construction of new transport capacities and of reconstruction of existing ones, the sources of funds and other conditions for the development of the system for oil transport via oil pipelines within the development plan. In addition, they should set the programmes and measures for the reduction of losses within this system and they are responsible for the realization of the development plan. On 23 May 2024, the Agency granted Transnafta approval of the Development Plan for the crude oil pipeline transportation system for the period 2024–2028, together with the Investment Plan for the period 2024–2026.

5.3.3 Use-of-system charge

In 2024, the Agency Council approved decision on oil transport use-of-system charge of *Transnafta* JSC which was applied as of 04/10/2024.

Table 5-1: Use-of-system charges

<i>Transnafta</i>	Oil pipeline branch	31/12/2023	31/12/2024
Tariff "energy source" (RSD/t/100 km)	Dunav – Novi Sad	149.69	193,73
	Novi Sad – Pančevo	125.11	154,10

The current charges and chronological review of oil pipeline use-of-system charges are available on the website of the Agency (www.aers.rs).

5.4 Oil, oil derivatives, biofuels, bioliquids, compressed natural gas, liquefied natural gas and hydrogen market

Energy trading activities in the field of oil derivatives and biofuels were primarily regulated by the regulations in the field of trade and in the field of energy. Apart from traditional trade in motor fuels and other fuels on petrol stations, the Energy Law recognises trade in fuels out of petrol station as retail in fuels, i.e. fuels which are not used for vehicles, except for sport planes. In such a way, the supply of sport planes with jet fuels and direct supply of final customers with fuels for heating and cooling, such as heating oil, heating bio oil, propane, butane, propane butane blend, hydrogen, etc. is also defined as retail trade. The same regulations regulate the trade in oil, oil derivatives, biofuels, bioliquids, compressed natural gas, liquefied natural gas and hydrogen as a traditional wholesale activity which, in case of some fuels, except for general qualitative conditions prescribed, also has quantifying conditions defined, i.e. certain storage capacities which are used in order to trade in these fuels. Energy entities holding his licence are entitled to perform trade on the local and foreign level and they complied with minimum technical conditions for this. The trade in fuels meant for vessels is defined as specific wholesale category and it is regulated also by regulations in the field of fire protection as well as in the field of trade. The status of an energy entity which performs this activity can be awarded to companies which were awarded with the status of an operator of port activities exclusively in line with the regulations which regulate port activities and sale in national waters (considerable amendments to the Law on Sale and Ports in National Waters entered into force in 2018 while additional amendments were also made in 2019, 2020 and 2021). Thereby, the supply of big ships for local cruise and technical vessels in ports and water flows in the Republic of Serbia was regulated by the law.

In the regulations in the field of trade, the storage of oil, oil derivatives and biofuels are not recognised as trade services, but they are still licensed activities. Energy entities holding this licence are entitled to offer the service of storing fuels owned by traders, final customers, the Energy Reserves Authority – appointed to establish mandatory oil and oil derivatives reserves. They store fuels in adequate tanks.

The Law defines the competences of the energy inspector who, among other things, has a task to check if energy entities which perform energy activities comply with prescribed conditions for the performance of these activities upon the award of the licence, i.e. the inspector has a task to monitor energy activities performance in line with the Law and to monitor facilities for oil, oil derivatives and biofuels storage and consumption. Energy inspection was established and started working in mid-2021.

There is free import of oil derivatives, biofuels and bioliquids and the volume, as well as the necessary structure of storage capacities for each of oil derivatives and biofuels type which are imported or traded within the Serbian market by traders are defined by regulations which arise from the law regulating trade (Rulebook on Minimum Technical Conditions for Oil Derivatives and Biofuels Trade ("Official Gazette of RS", No. 68/13 and 81/15). These regulations also regulate minimum technical conditions for the trade in motor fuels and other fuels on petrol stations (stations for the supply of vehicles, trade in fuels meant for vessels and trade in fuels out of petrol stations).

There is full liberalisation of all energy activities in Serbia but due to the emergency situation in international relations starting from 2022, the Government of the Republic of Serbia adopted a set of measures by which they led to the mitigation of the impact of price growth in the global market and, at the same time, although there was an increased demand, they provided for full supply of the local market with oil derivatives at acceptable prices. One of the first measure which was implemented by the Government based on regulation regulating the trade was the adoption of a Decree on Oil Derivatives Price Limit which regulated the method of establishment of retail oil derivatives price for Euro diesel and Euro Premium BMB 95 except for registered agricultural households for which a fixed price is established. Retail prices of the given derivatives are related to average wholesale prices. A fixed margin is established in correlation with the wholesale price and the dynamics of retail price modification is established. In the beginning, the Decree was being modified for a period of one month time. Therefore, there were more amendments due to the extension of the validity period. New Decrees were adopted after the termination of a six-month period due to its harmonisation with the Law on Trade. In this way, the limitation on the retail price was extended throughout the entire year of 2024: decrees, or amendments to the decree, were published three times ("Official Gazette of the RS", Nos. 6/2024, 26/2024, and 63/2024). Thereby, retail price limit was extended during the whole 2023. Fixed fee for the highest retail price in comparison to the average wholesale price was amended only once in March from RSD 13 to 16. In 2024, in line with the Decree on Oil Derivatives Price Limit, the ministry in charge of energy issues adopted the Rulebook on Calculation of Average Wholesale Oil Derivatives Price – Euro diesel and Euro premium BMB 95 ("Off. Gazette of RS", No. 7/2024). This act established average wholesale price of the given oil derivatives on defined parity with calculated all dependant costs.

Another measure implemented by the Government was the adoption of a Decision on Temporary Reduction of the Level of Excise Duty for Oil Derivatives from Article 9, paragraph 1, item 1),2) and 3) of the Law on Excise Duty ("Off. Gazette of RS", No. 33/2022) as of 11/03/2022. Due to the growth of the crude oil price in the global market which has a negative effect on the macroeconomic stability of the country, the Government reduced the level of excise duties for petrols and gas oils temporarily by this decision. The Decision was amended during 2023 as well in order to extend the duration of its validity period, i.e. it was replaced by a new one when the level of excise duty was changed. The latest amendment to the Decision was published in the "Official Gazette of RS, No. 25/2023" and was valid until April 30, 2023. To increase budget revenues, while simultaneously enhancing reliefs for economic entities entitled to excise tax refunds and introducing refunds in the field of agricultural production, the Law on Amendments and Supplements to the Excise Law ("Official Gazette of RS, No. 75/2023") was adopted in October 2023. Amendments related to the introduction of the right to a refund of excise duty paid on motor fuel used for agricultural purposes have been applicable since January 1, 2024.

The development of oil and oil derivatives market was greatly influenced by the new Law on Commodity Reserves ("Official Gazette of RS", No. 104/13, 145/14 and 95/2018) and enabled the implementation of the Directive 2009/119/EP in the local legislation. This Directive refers to the provision of minimum mandatory oil and oil derivatives reserves. Based on this Law, the Government of the Republic of Serbia adopted a Decree on Setting Programme of Measures in Case of Endangered Security of Energy and Energy Sources Supply – Crisis Plan ("Official Gazette of RS", No. 63/2019). Crisis Plan includes procedures and criteria for the definition of disturbances in the supply and procedures for normalization of market supply in the Republic of Serbia. The Programme defines the proceedings in case a decision on the release of mandatory reserves into the market is adopted on the international level. In mid-2021, the Government adopted a Decree on Amendments to Decree on Plan and Criteria for Establishment of Mandatory Oil and Oil Derivatives Stock ("Official Gazette of RS", No. 48/2021) which defines that crude oil is purchased for the purpose of mandatory stock with the quality with parameters complying with conditions set by Rules on Operation of System for Oil Transport via Oil Pipeline which is adopted by Transnafta and approved by the Agency. The Decree also defines that mandatory stock may be refilled by replacement, sale and procurement. A Rulebook on Establishment of Annual Programme for Mandatory Oil Stock Establishment and Keeping used to be adopted for each year starting from 2015. The Rulebook on the Establishment of Annual Programme for Establishment and Keeping Mandatory Stock of Oil and Oil Derivatives for 2024 was published in the Official Gazette of RS, No. 75/2024.

The Directive (EP) 2009/28, i.e. (EP) 2018/2001 which refers to renewable energy sources aiming at the reduction of greenhouse gases, in its segment related to the mandatory content of biofuels in motor fuels were implemented in the local legislation as of 2019 since the following documents were adopted: Decree on Biofuel Market Share ("Official Gazette of RS", No. 71/2019) and Rulebook on Technical and Other Requirements for Biofuels and Bioliquids ("Official Gazette of RS", No. 73/2019). A Rulebook on Calculation of Renewable Energy Sources Share ("Official Gazette of RS", No. 37/2020) was adopted in 2020. Among other things, the Rulebook prescribes in more detail the energy content of fuel in transport sector and the manner of calculation of the impact of biofuels and bioliquids and their comparable fossil fuels on the emission of greenhouse gases. By the Action Plan for Construction of New Renewable Energy Sources – Based Capacities, the obligation to reach 10% of biofuels share in motor fuels until 2020 was assumed but the biofuel share in the oil derivatives market in 2024 was still negligible. The Law on Use of Renewable Energy Sources ("Official Gazette of RS", No. 40/21, 35/2023 and 94/2024 – another law) was adopted in 2021. Among other things, the Law transposed certain provisions from the existing Energy Law which regulate the use of biofuels and expanded them. At the same time, the Law envisaged the adoption of relevant bylaws which will regulate this area in more detail. In 2023, the Regulation on Sustainability Criteria for Biofuels, Bioliquids, and Biomass Fuels ("Official Gazette of RS" No. 96/2023) and the Rulebook on the Calculation of the Share of Renewable Energy

Sources ("Official Gazette of RS" No. 2/2023) were adopted. Among other things, these regulations specify the energy content of fuels in transportation and the method for calculating the impact of biofuels, bioliquids, and their comparable fossil fuels on greenhouse gas emissions.

In 2023, the Rulebook on Immobile Tanks ("Official Gazette of RS", No. 50/2019 and 85/2023) was amended and it, among other things, sets technical requirements and method of labelling of these facilities, equipment characteristics and the compliance with these requirements as well as the conditions for immobile tanks verification.

5.4.1 Wholesale market

Until and including 2024, the licence for trade in oil, oil derivatives, biofuels, bioliquids, compressed natural gas, liquefied natural gas and hydrogen was held by 63 energy entities, i.e. the same as last year as it is indicated in figure 5-3. In the period after 2014, the main reasons for the reduction of the number of licenced energy entities for this energy were stricter regulations in the field of trade which regulate the minimum technical requirements for this activity in 2011 and in 2013, as well as the full implementation of these regulations in 2014, when licenses were withdrawn most often for these reasons upon the proposal of market inspectors. In the second phase which includes 2015 and 2016, there was a follow-up of slight annual trend of reduction of number of licenced entities for trade and then there was a slight growth from 2017 until 2024 which is a result of natural fluctuation of the number of wholesale traders present in the oil, oil derivatives, biofuels, bioliquids, compressed natural gas, liquefied natural gas and hydrogen market under set conditions. Since 2015, the number of market participants is relatively stable. In the period from the adoption of the previous Energy Law in 2014, after the adoption of the amendments to Law in 2021, 2023 and in 2024, 213 licences for the performance of this activity were permanently revoked which is a relevant indicator of market consolidation. The reduction of the number of wholesalers facilitates monitoring and control both of market players and of quality of motor and energy fuels which are placed on that market.

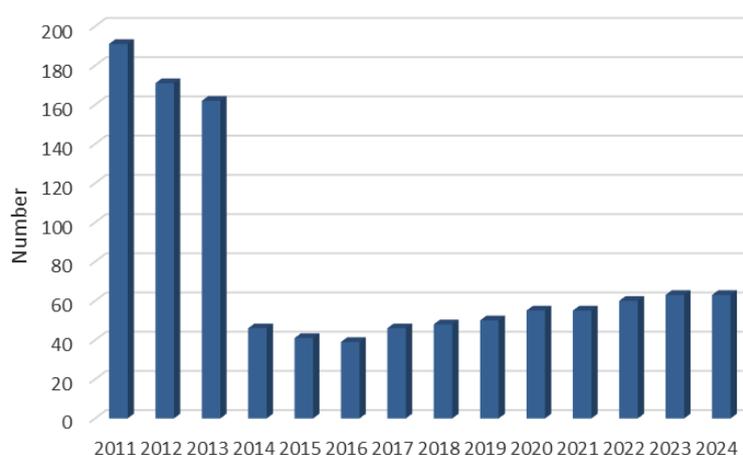


Figure 5-3: Number of active licenses for trade in oil, oil derivatives, biofuels, bioliquids, CNG, LNG and hydrogen in 2010-2024

In 2024, the same as in 2023, 63 energy entities held a licence for trade in oil, oil derivatives, biofuels, bioliquids, compressed natural gas, liquefied natural gas and hydrogen. Table 5-2 indicates the number of energy entities hold a licence for wholesale in different energy sources in 2024.

Table 5-2: Number of energy entities holding licence for different energy sources in 2024

Type of energy source	Number of energy entities	Type of energy source	Number of energy entities
Crude oil	2	Lead-free motor fuels (BMB)	5
LNG - autogas	11	Airplane fuels	1
LPG – propan-butan blend (PBS)	6	Jet fuels	1
LPG - propan	6	Gas oil Euro diesel	19
LPG - butan	3	Gas oil extra light Euro EL	5

Compressed natural gas (CNG)	27	Heating oils	19
Liquefied natural gas (LNG)	5	Biofuels	0
Hydrogen	0	Bioliquids	0

From the data given in the table, one may conclude that the biggest competitiveness potential in the trade in the local market in recent years has been present in the wholesale in compressed natural gas, heating oils and gas oils. There is also a solid competitiveness potential in the trade in liquid oil gases and lead-free motor petrols. In addition, it is indicated that biofuels, bioliquids, hydrogen, airplane fuels and jet fuels market practically did not exist in Serbia in 2024, too. For the trade in motor fuel gas oil 0.1 which is used for running machines and tractors, prescribed minimum technical conditions were only complied by NIS for years in the past. At the end of 2020, upon NIS request the licence was amended and from that moment no energy entity complies with necessary requirements for the wholesale of this type of motor fuel in the market of the Republic of Serbia.

The Law on Sail and Ports within Local Waters (“Official Gazette of RS”, No. 73/10, 121/12, 18/15, 96/15 – other law, 92/16, 104/16 – other law, 41/18, 95/18 – other law and 37/19 – other law, 9/2020 and 52/2021) envisages that shippers, port operators and Directorate for Water Flows should harmonise their activities with the provisions of that Law until December 31, 2018 at the latest. Until the end of 2022, most companies storing oil derivatives in tanks within river terminals harmonised their activities with ruling regulations in an adequate manner. The licence for trade in oil for watercrafts was held by the company *Siber Invest* from Požarevac and by NIS. NIS has bunker stations in Prahovo and in Veliko Gradište on the River Danube where *Siber Invest* also has a station for vessels fuel supply.

The number of energy entities licensed for the storage of oil, oil derivatives and biofuels amounted to 24 until 2021 and including 2043. NIS has the largest storage capacities out of 25 licence holders. The second, third and fourth largest storage holders include *Transnafta*, *EPS JSC*, *Mitan oil*, *MOL Serbia*, *Naftachem*, *VML Energy* and *EURO KB RENT*.

5.4.2 Retail market

The amendments to the Energy Law in 2021 implied that apart from oil derivatives, the fuels such as biofuels, gas oils, vessel fuels, compressed natural gas, liquefied natural gas and hydrogen are considered to be motor fuels. The sale of heating oils on petrol stations is forbidden as of early 2015. The Rulebook on technical norms for the security against fire and explosion in fuel stations for vehicles, small watercrafts, small agricultural and sport planes (“Official Gazette of RS”, No. 54/2017, 34/2019 and 92/2021) defined technical norms for safe instalment as well as for the security against fire and explosion for the construction of new facilities and for upgrade, adaptation, reconstruction and sanitation of existing stations for the supply in fuels of vehicles, in road transportation, small watercrafts, small agricultural and sports planes. It also defined procedures and technical norms for devices, installation and equipment for safe fuel storing and cross-feed on these stations. There were 370 energy entities licensed for retail by the end of 2011. The highest number of them was recorded at the end of 2016 – 470 of them, while there were 418 of them holding that licence at the end of 2024 which is 4 licences less than in 2023. The increase in the number entities licensed for the performance of this activity in the period 2011 - 2016 is to a small extent the result of construction of new petrol stations as well as to sporadic transformation of internal stations into public stations, and to a larger extent due to follow-up of a several-year trend of the lease of a greater number of petrol stations from NIS and Lukoil system to leaseholders. Thereby, the number of market players was increased by using practically the same number of petrol stations, i.e. slightly higher number of petrol stations, as well as due to intensified activities of the ministry’s control department which is authorized for trade. As a result of an intensified inspection, most of participants in this market applied for the license, even those who used to operate illegally. On the other hand, the dominant reason affecting the reduction of the number of participants in retail market is the revocation of licences from companies performing this activity on one station or on a small number of stations for vehicle supply upon their request due to lack of cost-effectiveness. Following the change of legal basis of their use, in most cases, energy entities performing this activity on a larger number of stations continued performing this activity on these stations. Therefore, operational cost optimization is the cause of market consolidation. It is confirmed by the fact that the number of licenced entities dropped by around 4% in the period 2016-2021. A considerable decrease in the number of licensed energy entities—by 4.7% in 2022, 1.9% in 2023, and 0.95% in 2024—is the result of the introduction of maximum retail prices for petroleum products due to the energy crisis. This led to a reduction in fixed margins in this sector, which were increased in 2024 but not sufficiently to offset the accumulated losses. As a result, a number of small traders, primarily those operating motor fuel supply stations under lease arrangements, withdrew from the market.

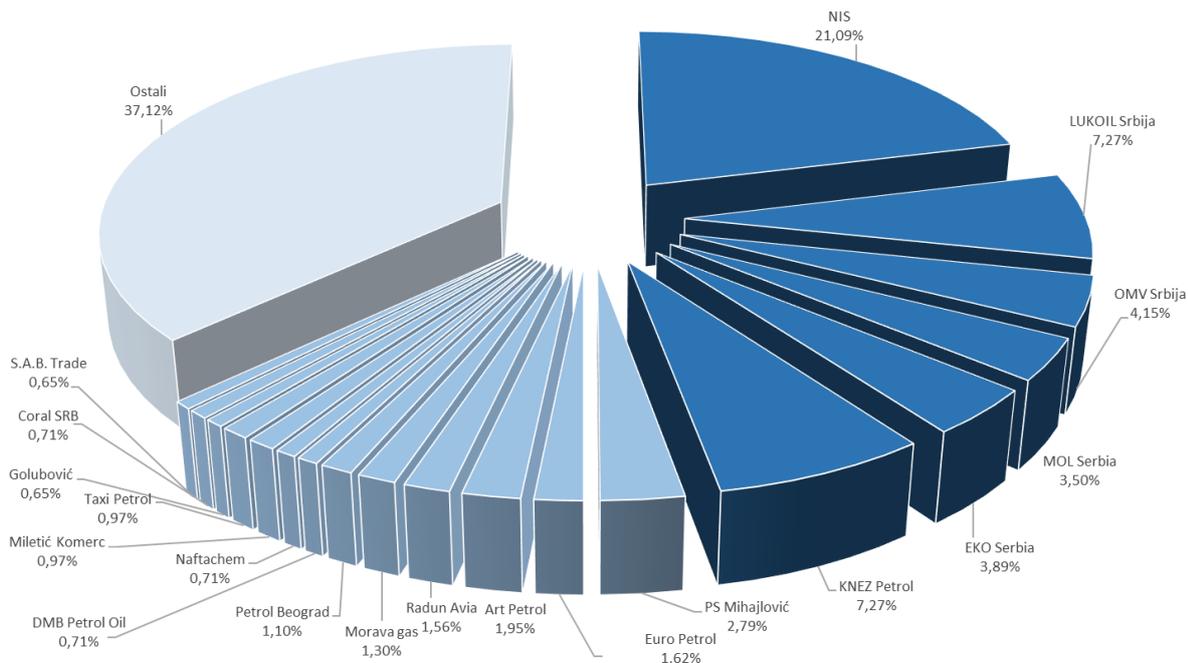


Figure 5-4: Share of companies in retail motor fuel market according to the number of stations in 2024

Figure 5-4 indicates the share of the biggest companies in retail motor fuel market in 2024. The given data do not refer to the motor fuel quantities placed on the market of the Republic of Serbia but to the relative share that oil companies hold in the market according to the number of petrol stations they use either as owners or as tenants, excluding the stations of other licenced entities using franchise trademark of these companies. In addition, the diagram has incorporated brands operating within the same business group (e.g. stations operating under brand NIS Petrol and Gazprom are incorporated in NIS section etc.) while the section “Other” includes all companies operating with than ten stations. Average number of stations per energy entity in the Republic of Serbia amounts to 3.6. However, if we exclude business group NIS performing this activity on more than 300 stations from the statistical data, this factor drops to 2.9. If we also exclude Lukoil and Knez Petrol using more than 100 stations each, the average level drops to 2.3. In the end, if we exclude all 19 energy entities which operate with ten and more than ten stations from the analysis as it is indicated in Figure 5-4, the average number of stations per energy entity amounts to 1.43. This average refers to 95.45% of all licenced energy entities engaged in the trade of motor fuels at approximately 37.12% of the 1,520 public retail outlets in the Republic of Serbia in 2023. These traders are shown in Figure 5-4 under the aggregated category “Others,” and their share in the total number of stations decreased by approximately 1.5% in 2022, by 1.84% in 2023, and by a further 0.53% in 2024, which confirms the trend toward consolidation of the domestic market. The total number of stations engaged in the trade of motor fuels and other fuels nominally declined by 11 in 2022, by 25 stations in 2023, and by an additional 10 stations in 2024, as shown in Figure 5-5.

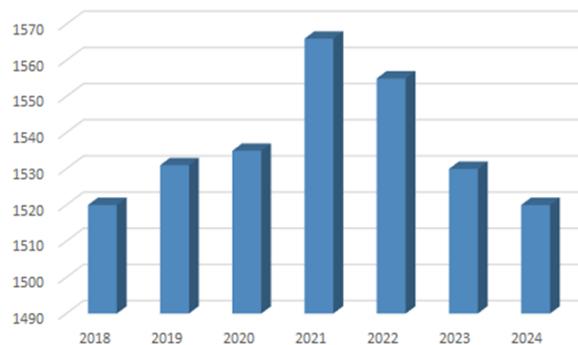


Figure 5-5: Number of motor vehicles supply stations in the Republic of Serbia in 2018 - 2024

The cumulative decrease in the number of energy entities engaged in this activity from 2022 to 2024—by 33 entities—and the reduction in the number of active motor fuel supply stations by 46, i.e. by approximately 3% of the total number of stations in the Republic of Serbia over the same period, are, inter alia, the result of the application of regulations limiting retail prices of petroleum products and fixed margins. These measures were introduced in order to mitigate the effects of the global energy crisis. When assessing the data on the reduction in the number of stations operating in the Republic of Serbia, it should be taken into account that a certain number of new stations are constructed each year; therefore, the actual number of older stations that have ceased operations is effectively higher by the number of newly built stations.

The increase in the number of compressed natural gas (CNG) traders as well as of the number of petrol stations is an indicator of expansion of use of this energy source which substitutes other types of motor fuels. Until 2023 and including 2024, 20 licences were issued for retail in CNG, which is two more than at the end of last year and thereby the supply in CNG was performed on 30 stations in total which were registered in these licences which is four more than last year. The supply of motor vehicles by CNG was performed in three ways: from the transmission or distribution gas pipeline network, from mobile storages or from liquefied natural gas. The retail market for this energy source is characterized by a lack of regulations and defined inspector authorities, as well as the inability to monitor the consumption of CNG as a motor fuel (part of the CNG sold at stations is used for industrial purposes). In 2022, the first license for the retail trade of liquefied natural gas at a transport refuelling station was issued. The Law on Amendments and Supplements to the Excise Law ("Official Gazette of RS, No. 75/2023") stipulates the introduction of an excise duty on natural gas for end consumption used as fuel for motor vehicles starting from January 1, 2025.

There are six energy entities licensed for trade in fuels outside petrol stations as it was the case last three years and they deal in trade in gaseous energy fuels primarily. They also trade in gas oil extra light type Euro EL.

There is still no energy entity dealing in the trade in motor fuels for sport airplanes and trade in hydrogen for motor vehicles supply.

6. ACTIVITIES OF GENERAL INTEREST AND CUSTOMERS PROTECTION

6.1 Activities of general interest

Legal framework for the performance of activities of general interest, i.e. for the provision of public service in the energy sector of Serbia is set by two laws: Energy Law and Law on Public Enterprises.

The Law on Public Enterprises ("Official Gazette of RS" No. 15/2016 and 88/2019) regulates the activities of general interest in several branches of economy, energy being one of them. On the other hand, definition of an activity of general interest in the energy field and the supply of electricity (guaranteed supply) and natural gas (public supply) is regulated by the Energy Law. Electricity production is not an activity of general interest. Guaranteed electricity supply is not a specific activity, but a public service offered by a supplier appointed by the Government of the Republic of Serbia in line with the Energy Law. The Law on Public Enterprises defines that an activity of general interest can be performed by a public enterprise. It can also be performed by corporations with a public enterprise, Republic of Serbia, autonomous province or local self-government unit as the only owner. A daughter company with such corporation as the only owner of it may also perform these activities. In addition, in line with specific laws, these activities may be performed by other corporations or entrepreneurs appointed by the competent body.

The main objective of the establishment and operation of public enterprises is to secure continuous performance and development in performance of activities of general interest and regular compliance with the demand of customers in terms of products and services, secure technical and economic harmonisation of the system and its harmonisation of its development, with adequate profit and gaining any other interest prescribed by the law.

The 2014 Energy Law defines 29 energy activities with 26 energy activities including 8 of them defined as the activities of general interest for which the Agency issues licences. In the field of electricity, they include the following: electricity transmission and transmission system operation, electricity distribution and distribution system operation. In the field of natural gas, they include: natural gas transmission and transmission system operation, natural gas storage and natural gas storage operation, natural gas distribution and distribution system operation and natural gas public supply. In the oil field, they include: oil transport by oil pipelines and oil derivatives transport by product lines.

Via the adoption of the Law on Amendments to the Energy Law ("Official Gazette of RS", No. 40/21) from April 2021, the scope of energy activities was expanded to energy activities – wholesale natural gas supply, electricity storage and hydrogen production while the title of the existing activity – trade in oil, oil derivatives, biofuels and compressed natural gas was modified, i.e. this activity was expanded and it also encompasses trade in liquefied natural gas, bioliquids and hydrogen. The given amendments to the Law, 33 energy activities were defined in the energy sector in 2021. Out of them, there are 29 energy activities for which the Agency issues licences including 8 of them which are activities of general interest.

On November 1, 2023, the Law on Amendments and Supplements to the Energy Law ("Official Gazette of RS", No. 62/23) came into effect. This law established the Republic Commission for Energy Networks as an autonomous and independent body of the Republic of Serbia, responsible for the oversight of the electricity transmission system operator and the natural gas transmission system operator, both of which are owned by the Republic of Serbia. The Commission oversees the transmission and management of the electricity transmission system and the transportation and management of the natural gas transmission system as activities of general interest. With the enactment of this law, the ministry responsible for economic affairs ceased to perform state administration tasks related to the supervision and preparation of proposals for the appointment and dismissal of management bodies and capital representatives in these enterprises.

By the Law on Amendments and Supplements to the Energy Law ("Official Gazette of the Republic of Serbia," No. 94/24) of November 2024, the scope of energy activities subject to licensing was expanded once again through the addition of the following activities: aggregation and biomethane production. As a result, by the end of 2024, a total of 35 energy activities were defined within the energy sector, of which the Agency issues licenses for 31 activities (including 8 activities of general interest).

6.2 Customer protection

The protection of electricity and natural gas customers who use the services of general economic interest is provided more generally by the Law on Customer Protection ("Official Gazette of RS", No. 88/2021) which provides protection of customers who are natural persons. In more detail, the protection of all customers is also provided by the Energy Law and bylaws adopted on the basis of this Law which regulate in more detail: general conditions for electricity and natural gas delivery and supply, regulation of price of electricity transmission and distribution, natural gas transmission and distribution and price of regulated supply of households and small customers (guaranteed electricity supply and public natural gas supply), as well as the provision of administration-legal protection of customers with administrative procedures related to the connection of facilities to the system and administrative procedure related to the approval of access to the system.

Monitoring enforcement of documents adopted by the Agency

In line with the jurisdiction set by the Energy Law, in 2024, the Agency estimated the regularity of enforcement of methodologies adopted by the Agency and the regularity of setting regulated use-of-system charges and regulated electricity and natural gas prices. It is a precondition for the Agency approval of a legal act on use-of-system charges and legal acts on prices of guaranteed and public supply. When giving approval, the Agency provided for the adoption of prices set by energy entities in line with the Energy Law within the timeframe prescribed by the law regulating customer protection and the Energy Law. Except for the implementation of general mechanisms for final customers protection, the Agency analysed the regularity of implementation of prescribed tariffs and acted upon complaints of customers and system users. In their files submitted to the Agency, they denied the regularity of stating prescribed tariffs or their amount indicated in suppliers' or system operators' bills, denied also the regularity of classifying customers in groups and categories of customers prescribed by methodologies adopted by the Agency, etc.

6.2.1 Regulation of price of supply of households and small-scale customers

One of the measures of protection of households and small-scale customers in electricity and natural gas markets is set by the Energy Law, i.e. the supplier to whom such final customers may return (universal service) is provided and the price of such supply is regulated. Electricity and natural gas market in the Republic of Serbia was opened in several stages and only households and small electricity and natural gas customers are entitled to regulated guaranteed/public supply as of 01/01/2015. Guaranteed/public supplier is appointed by the Government of RS in a manner, within a procedure and within deadlines set by the Law.

EPS JSC is the guaranteed electricity supplier for the whole territory of Serbia. By mid-2016, guaranteed supply was provided by "EPS Snabdevanje" LLC Belgrade as a daughter company established by PE EPS (now EPS JSC) in March 2013. In June 2015, by the change of status, the company was merged with PE EPS. From that moment, PE EPS continues supplying households and small-scale customers at regulated prices. PE EPS has rights and obligations of the guaranteed supplier until a guaranteed supplier is appointed by the Government of the Republic of Serbia. The change of status was registered on June 1, 2016 in the Registry of economic entities. By the Decision on Amendments and Supplements to the Founding Act of JP EPS, adopted by the Government of the Republic of Serbia on 6 April 2023, the legal form of this company was changed from a public enterprise to a joint-stock company. Since that date, it has operated under the name Elektroprivreda Srbije Joint-Stock Company, Belgrade (EPS JSC).

In the second half of 2012, the statute of PE *Srbijagas* was amended and a contract on the transfer of activity of natural gas public supply was signed with several companies and enterprises. This enabled the Government of RS to appoint energy entities which may perform this activity. In total, 33 energy entities complied with the conditions at the end of 2012 and in early 2013 and were licensed by the agency for the performance of natural gas public supply. However, in 2018, this number reduced to 32 public suppliers due to a merger of two energy entities. The number of public suppliers in natural gas remained the same in 2023 as well. In 2024, the energy activity of public supply of natural gas was performed by 31 suppliers.

The prices of guaranteed and public supply are approved by the Agency in line with the Law. The content of the bill issued to final customers is prescribed in more detail by bylaws by which the Government of RS prescribed in more detail conditions of electricity, i.e. natural gas delivery and supply.

6.2.2 Rights of final customer to access to data on one's own consumption

Following market opening, a final electricity and natural gas consumer becomes interested in obtaining full data on their consumption since without these data a potential supplier with whom a customer negotiates cannot make a precise price offer. In line with the Law, a final customer is entitled to ask directly or to authorize their potential supplier to ask for and obtain all necessary data from the system operator on customer's consumption on the delivery point which the system operator is obliged to indicate in an unambiguous and timely manner. The Law prescribes that a customer may authorize any supplier (not only the current one) to ask for and obtain the data on their consumption from the operator.

The decision on the procedure for the exercise of the right of final customer to have access to the data on one's own electricity and natural gas consumption was adopted by the Agency in July 2016 in line with its jurisdiction arising from the Energy Law. A part of this decision includes the templates for indicating data on a final customer's consumption so as interested suppliers could have the same data indicated and in the same way, too.

The operator is obliged to indicate the requested data free of charge within the defined deadline using the same template, in line with the defined template and submit them to the customer and a potential supplier if the customer appoints him as a data addressee. Final customers are thus enabled to receive comparable offers from potential suppliers which are established on the basis of reliable data on the customer's consumption in the long-run (for the last 24 months). The types of data are standardized as well as their template.

This procedure is expected to be more efficient after broader implementation of advanced metering systems. Direct access to the data will be available with relevant codes for authorized persons. This is already in function with the electricity Transmission System Operator.

6.2.3 Supplier switch

The Rules on Supplier Switching (“Official Gazette of RS”, No. 65/15) which were adopted in 2015 regulate conditions and procedure for supplier switching in case a final customer has a contract on full supply concluded. Acting upon complaints filed with this Agency during 2016 and 2017 directly by customers who failed to switch supplier or filed via a new supplier, the Agency asked for declarations and gave instructions in order to provide for regular implementation of these rules in each concrete case. In 2016, the Agency organized consultations with energy entities twice and based on the results of these consultations, the Agency prepared amendments to the Rules which entered into force in early 2017. In line with the jurisdiction set by the Law, the Agency also drafted templates with instructions both for customers on how to launch the procedure and for other participants in order to provide regular implementation of the Rules and more efficient procedure realization. New amendments of these Rules enabled the launch and completion of the supplier switching procedure upon a request of a customer losing their supplier even in less than 21 day. Thereby, procedure participants are urged to act urgently in settling a certain number of cases in order to reduce the number of customers who would otherwise be exposed to higher costs of supply of the last resort which is limited to 60 days at most. The adoption of a Decision on Amendments to Rules on Supplier Switching (“Official Gazette of RS”, No. 10/17) enabled considerable progress in registration and organization of data bases of system operators on final customers metering points.

The Law on Amendments and Supplements to the Energy Law (“Official Gazette of the Republic of Serbia,” No. 94/24) of November 2024 prescribes a period of six months from the entry into force of this Law for the adoption of new Rules on the change and collective change of supplier and aggregator, as well as the obligation that, as of 1 January 2026, the supplier switching process shall take 24 hours.

6.2.4 General terms and quality of delivery and supply

The Decree for Conditions of Electricity Delivery and Supply (“Official Gazette of RS”, No. 84/23) and the Decree on Conditions for Natural Gas Delivery and Supply (“Official Gazette of RS”, No. 49/22, 31/23 and 97/23) which are adopted by the Government of the Republic of Serbia on the basis of the Energy Law serve to define: general conditions of delivery and supply as well as conditions for the issuance of connection approval, content of the supply contract, rights and obligations of market players, content of delivery bill and supply bill, depending on supply conditions, conditions under which some customers cannot be disconnected from the network in case of unsettled liabilities for the withdrawn as well as other elements prescribed by the Law.

The Agency monitors the quality of delivery and supply and the quality of electricity and natural gas in line with the Rules on Monitoring Technical and Commercial Indicators and Regulating Quality of Electricity and Natural Gas Delivery and Supply which was adopted in the beginning of 2014. The Agency collects the relevant data, analyses relevant indicators, works on the upgrade of data quality with energy entities and prepares periodical reports in line with the Law. Achieved indicators are referred to in more detail in subsections 3.7 and 4.6.

6.2.5 Settling complaints and assistance in mediation procedure

The Agency also performs entrusted activities of administrative and legal protection of final customers. In 2024, as the second-instance body, the Agency adopted decisions against appeals filed by customers against acts of system operators on denial of system connection application. In most cases, appeals were filed due to a failure of a competent energy entity to adopt decisions in the first instance within the timeframe prescribed by the Law (the so-called “administrative silence”) but also due to contesting set technical requirements and costs of connection service. In 2024, final customers filed appeals mainly against acts of electricity distribution system operator’s acts while there were only 2 appeals filed against natural gas distribution system operator’s acts.

In addressing submitted complaints, the Agency in 2024 mostly annulled first-instance decisions of system operators made in response to connection requests to the distribution system, most often due to identified violations of procedural law as well as breaches of substantive regulations. Considering that the number of complaints in 2024 decreased significantly compared to the previous year, despite the continued trend of annulment of a considerable number of first-instance decisions due to significant procedural violations, it is noted that the training of professional staff responsible for administrative-legal tasks related to the connection of facilities to the system—particularly regarding the application of the new Law on General Administrative Procedure—had positive effects in 2024.

In addition to being authorised to receive appeals in the field of administrative affairs related to system connections, the Agency is also authorised to settle complaints of system users filed against acts of system operator by which they adopted decisions on system access for the purpose of using the service of electricity and natural gas transmission or distribution.

Customers and system users are also entitled to have administrative-court protection against second-instance administrative decisions of the Agency regardless of the fact whether they were adopted within an appeal procedure where the Agency settles complaints against acts on denial of connection or within an appeal procedure where the Agency settles a complaint filed against an act by which a system operator denied an application and denied access to the system.

The number of complaints to the Constitutional Court of RS filed within the second instance procedure against decisions of the Agency decreased in 2024 in comparison to last year.

Even in 2024, as well as in the previous years, in line with the jurisdiction, the Agency offered all necessary clarifications and issued opinions on the enforcement of the regulations adopted by the Agency. The Agency acted upon complaints of customers who deny the regularity of actions undertaken by energy entities when complying with obligations prescribed by the Energy Law. The Agency also acted upon other customers' and system users' files, regardless of the fact whether natural or legal persons file them.

In addition, in case of dispute between energy entities or between an energy entity and a system user, which is settled pursuant to the law regulating mediation, the Agency offers expertise to dispute parties as well as the available data so as necessary documentation is prepared for the mediation procedure.

In 2024, there were no mediation procedures where the Agency participated upon request of any of the parties.

6.2.6 Special modes of protection of most energy-wise vulnerable customers

The Law defines who qualifies as energy-vulnerable customers and the conditions that households must meet to obtain the status of energy-vulnerable customer. It also defines the manner in which special types of protection are provided to energy-vulnerable customers in the household category, i.e., the conditions for reducing the monthly financial obligation for end customers in this category.

The same Law also stipulates that the Government of the Republic of Serbia shall further prescribe the criteria and conditions for acquiring the status of energy-vulnerable customer, the content of the application for obtaining this status, the method of determining whether the conditions for acquiring this status have been met, the issuance of a decision granting this status, the manner of issuing and content of the decision, the validity period of the decision, the scope and content of rights to reduce monthly payment obligations, the acquisition of energy-vulnerable status due to health conditions, the manner of keeping records of energy-vulnerable customers, the method of securing funds for their protection, penalty provisions, and other matters necessary for determining this status.

By the Regulation on Energy-Vulnerable Customers, adopted by the Government of the Republic of Serbia, the manner of maintaining records of energy-vulnerable customers is prescribed, as well as the obligation of the Ministry to publish, on its website, aggregated data from the records of energy-vulnerable customers and funds disbursed for these purposes no later than April of the current year for the previous year, with a month-by-month overview.

In accordance with the powers prescribed by the Energy Law, the Agency has no authority over energy-vulnerable customers.

ANNUAL AND FINANCIAL
REPORT

7. AGENCY ANNUAL REPORT

7.1 Basic data about the Agency

7.1.1 Establishment of and the scope of work of the Agency

The Energy Agency of the Republic of Serbia (Agency) was established pursuant to the 2004 Energy Law, which provided for the harmonisation of our legislation with the EU regulations at that time.

The Agency was registered at the Commercial Court in Belgrade on June 16, 2005 and started working on August 1, 2005.

Pursuant to the 2011 and 2014 Energy Law, the Agency continued its work of a regulatory body, established so as to improve and guide energy and natural gas market development based on principles of non-discrimination and efficient competition, through the establishment of a stable regulatory framework, as well as so as to perform other activities stipulated by the law.

By the adoption of the 2014 Energy Law, legal norms in the energy field were harmonized with the Third energy package of regulations on internal energy market and the *acquis* of the EU. The role of the Agency was strengthened significantly and its jurisdiction was expanded.

Via the adoption of a set of energy regulations in April 2021 (Law on Amendments to the Energy Law, Law on Use of Renewable Energy Sources, Law on Energy Efficiency and Rational Use of Energy) aimed at further adjustment and harmonization with the EU *acquis communautaire* in the energy field, the jurisdiction of the Agency was further regulated and expanded. However, the amendments to the Law on the Use of Renewable Energy Sources in 2023 abolished the Agency's authority in this area and transferred it to the ministry responsible for energy.

The amendments and supplements to the Energy Law of 2023, and especially those of 2024, significantly expanded the powers of the Energy Agency in order to align with the EU Integrated Electricity Package.

The most important Energy Agency jurisdiction areas in 2024 divided in groups include the following:

Certification and licencing

- certification of the transmission/transport system operator and
- licence issuance and withdrawal, keeping a licence registry and adoption of a regulation on the level of costs of licence issuance.

Price regulation

- adoption of methodologies for setting:
 - energy network use-of-system charges;
 - prices of regulated electricity and natural gas supply;
 - prices connection to network systems;
 - methodologies for billing electricity which was consumed without authorisation;
 - methodologies for setting price of non-frequency ancillary services;
 - methodologies for setting costs, method of compensation and cost allocation between NEMO and the transmission system operator;
 - methodologies for assessment of investments in risks and strategic infrastructure projects in the field of electricity, natural gas and oil
- approval of regulated prices;
- approval of the agreement concluded between the transmission system operator and NEMO regarding the reimbursement of costs or part of the costs of market coupling;
- determination of the procurement prices of non-frequency ancillary services.
- monitoring the enforcement of methodologies and approved regulated prices;
- monitoring the implementation of methodologies and approved regulated prices;
- conducting periodic consultations on the methodology for determining access prices to the natural gas transmission system in accordance with network rules;
- adopting decisions on joint access prices to natural gas transmission systems considered as a whole, in accordance with network rules on harmonized natural gas tariffs;
- determining the amount of compensation to the system user based on the degree of deviation from the prescribed quality of electricity and natural gas supply;
- developing an application for comparing electricity prices on the electricity market;
- monitoring risks and effects arising from contracts with variable electricity prices and preparing reports on these contracts

- drafting a report:
 - on the need for further regulation of electricity prices for guaranteed supply;
 - on the need for further regulation of the procurement price of non-frequency ancillary services;
 - on the continued necessity of maintaining reserve supply;
- preparation of a report on the use of congestion revenues and submission thereof to the Regulatory Board of the Energy Community;
- identification of regulations and measures that may contribute to indirect price limitations in the wholesale electricity market, proposing measures for their removal, and submitting a report to the Secretariat of the Energy Community.

Energy market monitoring

- adoption of rules and other documents:
 - collective supplier switching and aggregator switching rules;
 - rules on prevention of abuse in electricity and natural gas markets;
 - registration of electricity and natural gas wholesale market players and keeping registry in wholesale market;
 - rules on monitoring technical and commercial indicators and regulating the quality of electricity and natural gas delivery and supply.
 - act on manner, procedure and deadlines for keeping bookkeeping registries for regulation purposes and for the purpose of implementation of account unbundling for different energy activities;
 - regulation on the level of costs of energy licence issuance;
 - regulation on the method of procedure for imposing measures; keeping a registry of imposed measures;
 - methodologies for determining the amount of monetary fines;
 - an act on special procedures for receiving reports of illegalities and irregularities, and on communication channels for submitting such reports;
 - an act on the protection of the identity and personal data of persons who have reported illegalities or irregularities, as well as of the natural person to whom the report relates;
 - an act regulating the manner and procedure for granting consent, and the deadlines for submitting data and documentation necessary for the work of the Agency.
 - regulation on exemption for new interconnector overhead lines and gas infrastructure;
 - procedure of customers' entitlement to access the data on one's own consumption;
 - instructions, recommendations and guidelines for the enforcement of the regulations within the Agency jurisdiction;
- approval of rules:
 - electricity transmission and distribution network code;
 - natural gas transmission and distribution network code and natural gas storage code;
 - electricity market rules;
 - on connection of facilities to the transmission system;
 - for suspension and reinitiation of market activities;
 - on capacity allocation between bidding zones;
 - on publication of key market data;
- approval of other regulations:
 - multi-year development plans of transmission system, distribution system and oil derivatives transport system via product lines;
 - investment plans of system operators;
 - bilateral contracts for cross-border transmission capacity allocation;
 - procedure for the connection to the transmission system;
 - harmonisation programmes for non-discriminatory behaviour of the system operator; acts on conditions for appointment, duration of term of office and dismissal of the compliance officer for the programmes for non-discriminatory behaviour and prior approval of the appointment of a candidate nominated as the compliance officer for the programmes for non-discriminatory behaviour;
 - plans for the transfer of metering devices to distribution system operators;
 - regulation of a transmission system operator on the level of fee for the guarantee of origin;
 - regulation of the system operator on the non-standard service prices;
 - methodology adopted by the entity entitled with exemption from regulated transmission and natural gas storage use-of-system charges;
 - legal act of the natural gas distribution system operator defining the level of connection costs via standard connections;

- an act stipulating that the system operator may own, develop, or operate electricity storage facilities.
- giving opinion on plans for implementation of smart metering systems;
- Designation of one or more NEMOs for the trading zone in the Republic of Serbia.;
- drafting opinion with background on the Annual Report of the Non-Discriminatory Behaviour Programme Officer;
- approval of operational limitations within the transmission system connection procedure;
- Approval of the terms of the tender procedure conducted by the system operator for the selection of entities that may own, develop, or operate electricity storage facilities;
- Approval of products and procurement procedures for non-frequency ancillary services;
- Monitoring and assessment of the performance of the system operator in the electricity sector with regard to the development of advanced metering systems that promote energy efficiency and the integration of energy from renewable energy sources (RES), as well as the preparation and publication of related reports.
- deciding on the criteria for granting exemptions for connecting customers' facilities and production units to the network.
- deciding upon request for derogation within the electricity transmission connection procedure and keeping registry of all derogations;
- monitoring compliance of licenced energy entities with obligations and monitoring market functioning and
- Monitoring compliance of data exchange processes for the most important market processes in the region;
- Monitoring and assessing results in the development of advanced metering systems, and preparing and publishing related reports;
- Participation in consultations, granting consents, exemptions, approvals, and opinions on methodologies, provisions, conditions, and the approval of other acts and requests in accordance with network rules;
- Determining whether the procurement of flexibility services is economically justified or whether such procurement would lead to serious market distortions or congestion;
- Performing tasks related to Projects of Energy Community Interest (PECI);
- Proposing reliability standards for the purpose of preparing the report on security of supply by the competent ministry;
- Submitting redispatching reports to the Secretariat of the Energy Community;
- Approving bidding zones upon proposal of the transmission system operator and deciding on the need to amend bidding zones;
- Granting consent to the action plan of the transmission system operator aimed at reducing structural congestion, where it is determined that such an action plan is more effective than amending the bidding zone;
- Approving exemptions from the application of the minimum percentage of transmission capacity to be made available for trade between bidding zones;
- Approving exemptions from the issuance of long-term transmission rights between bidding zones;
- Approving exemptions related to: 1) for the settlement period in the electricity balancing market; 2) for the procurement of balancing capacity on the ancillary services market; 3) for the procurement of balancing capacity separately for upward regulation and separately for downward regulation; and 4) for the timing of conclusion and the duration of balancing capacity reservation contracts;
- Approving the extension of contracted reserved balancing capacity;
- Providing data to the competent ministry on the share of balancing capacity reserved under contracts with a duration longer than one day;
- Granting, in cooperation with other regulatory authorities in the region, approvals or consents to regional provisions, conditions, and methodologies in the case of electricity market coupling;
- Adopting individual decisions whereby the Agency, in accordance with regulations governing network rules in the field of natural gas, designates interconnection points that are not interconnectors at which the calculation and allocation of natural gas transmission capacity shall be performed; adopting decisions designating the operator responsible for estimating daily off-take at delivery points without daily metering; adopting decisions on requests for consent to reports on the implementation of temporary measures for balancing the transmission system, and other related decisions.

Deciding upon appeals and customer protection

- deciding upon appeals:
 - against denial of the access to the system and
 - against a decision of the system operator upon a connection application or against failure to adopt a decision on it;
- considering files submitted against the system operators', suppliers' and aggregators' failure to comply with obligations;

- providing professional support and data to applicants who settle their disputes via mediation;
- imposing measures and sanctions, including monetary fines and the temporary or permanent prohibition of performing managerial functions in an energy undertaking, as well as maintaining a register of imposed measures;
- launching offence procedures and economic offence procedures;
- examining circumstances and launching procedures with competent bodies in case of competition offence and market limitation offence and
- Cooperation with suppliers and the distribution system operator so as to make the list of practical data on their rights available to system users and customers.

International cooperation

- The Agency cooperates with regulatory authorities from other countries, as well as with other international bodies and organisations in line with the law and ratified international agreements and the decisions of the Council aiming at:
 - development of the regional and Pan-European electricity and natural gas market;
 - encouraging operational agreements ensuring optimal network operation;
 - achievement of equal conditions for all market participants;
 - promoting coupling of organised electricity markets;
 - common transmission capacity allocation between bidding zones;
 - Cooperation with other regulatory authorities in the region in relation to the operation of regional coordination centers
 - creating conditions for an adequate level of cross-border capacities in the region and among regions;
 - coordinated implementation of network codes and congestion management rules;
 - contribution to the compatibility of data exchange procedures and
 - improvement of its operations in line with positive international experience and standards.

The Agency provides non-discriminatory access to the systems through effective competition and efficient operations of electricity and natural gas markets.

Within its scope of work, the Agency monitors:

- efficient accounts unbundling in licenced energy entities;
- existence of cross-subsidising among energy entities which deal in different energy activities within the same energy entity;
- compliance with energy entities' obligations prescribed in line with the Law;
- Nominated Market Operator;
- application of the rules for transmission capacity allocation between bidding zones in cooperation with regulatory bodies from other states;
- application of the rules for transport capacity allocation between bidding zones in cooperation with regulatory bodies from other states;
- publishing the data on cross-border transmission capacities and on system use by transmission and transport system operator;
- enforcement of mechanisms for the removal of congestions in the transmission or transport system;
- conditions and costs for the connection of new electricity producers to the transmission or distribution system, so as objectivity, transparency and non-discrimination could be guaranteed, in particular having in mind the costs and benefits from different technologies for electricity generation from renewable energy sources and combined electricity and heat energy production;
- the time necessary for system operators to connect a facility to the system, i.e. the time necessary to remove breakdown in case of delivery disruption;
- the way reserves are used within the system;
- transparency and competition level, in cooperation with the bodies authorised for competition issues;
- functioning of an organised electricity market as well as the organised market operator's compliance with the principles of transparency and non-discrimination;
- the level of market openness and its efficiency and competence in wholesale (among suppliers) and retail (final customers supply) including the organized electricity market, household prices including subscription-based payment systems, the impact of contracts with variable electricity prices and the use of advanced metering systems, the relationship between wholesale prices and household prices, the percentage of supplier switching, disconnections and supply interruptions, performance and fees for maintenance services, and changes in tariffs and network usage charges;

- The occurrence of restrictive contractual practices, including exclusivity clauses that may prevent customers from concluding contracts simultaneously with more than one supplier or limit their ability to do so, which is reported to the competent competition authority;
- Investments in electricity generation and storage facilities in relation to security of supply.
- the conditions for access to the storage, linepack and use of other ancillary services in the natural gas sector;
- justifiability of costs and checks whether methodologies for setting use-of-system charges for which exemption was approved by the Agency are applied properly;
- Compliance of data exchange processes for the most important market processes at the regional level;
- Unjustified barriers and restrictions in the development of electricity generation for self-consumption and citizen energy communities.
- compliance with customer protection measures defined by this law and
- Realisation of development plans and investment plans of system operators which the Agency approved.

7.1.2 Organisation of the Agency

The Energy Agency of the Republic of Serbia is independent in performing organisational activities and other activities which enable the performance of the activities stipulated by the law. Pursuant to the Law, the Council of the Energy Agency (hereafter: the Council) adopts all the decisions on the issues under the jurisdiction of the Agency by majority of votes among Council members, except if it is otherwise stipulated by this law or Statute.

Within the Council, there is the President and four members. The Council President stands on behalf of the Agency and represents it, decides on the issues within the scope of work of the Agency as defined in Article 54 of the Law, organises the activities of the Agency and manages the activities of the Agency, proposes decisions and other acts adopted by the Council and monitors their implementation, has the director's authority in activities related to exercising rights and obligations of the personnel and performs other activities in line with the law, Statute and Council authorisation.

The Council adopts the Statute which regulated internal Agency organisation and procedures, Rules of Procedure and other general acts pursuant to the law. Agency Statute is approved by the National Assembly of the Republic of Serbia.

Organisational structure of the Agency was established based on elaborate made by the consulting house KPMG and approved by the Ministry of Mining and Energy. Organisation of the Agency is set so as to comply with the requirements in terms of efficiency and rationality in its work. To that end, Agency operates through four departments with a defined scope of work, with necessary level of coordination during the performance of complex duties for which more than one department is responsible.

Basic organisational units include:

- Energy and Technical Department;
- Economics and Finance Department;
- Legal Department and
- Organisational and General Affairs Department.

7.1.3 Independence and responsibility

In the performance of its activities, the Agency is an autonomous legal entity and it is independent from the executive authorities, other state bodies and organisations and legal and natural persons dealing in energy activities. The independence of the Agency does not prejudice its cooperation between the Agency and other national bodies, the implementation of the general policy adopted by the Government of the Republic of Serbia in issues which are not related to the jurisdiction and responsibilities of the Agency.

The Council President and members are responsible for their work to the National Assembly. At least once a year, they submit the financial report and the report on the energy sector to the Assembly. The annual report includes the data on the Agency's work during the previous year, its financial operations and the situation in the energy sector of the Republic of Serbia which is within the Agency's competence.

The independence of the Agency from the executive authorities is also reflected in the fact that, in line with the Law, the president and members of the Council of the Agency are selected by the National Assembly based on a public invitation and the fact that they are selected from a group of prominent experts in the energy field. The president and members of the Council may only be persons who are citizens of the Republic of Serbia, with university degree in technical, legal or economic area and with at least 10 years of working experience in the energy field. The following list of persons shall not be selected as the president and member of the Council: MPs of the National Assembly, MPs of the Assembly of the Autonomous Province, elected members of city councils, other elected and appointed persons, as well as political party officials; owners or co-owners of energy entities, as well as persons whose spouses, children or relatives in straight line regardless of the degree of kinship, or relatives in lateral line ending with the second degree

of kinship, are persons lawfully convicted for criminal offences against official duty, corruption, fraud or other criminal offences making them unfit to perform the functions they are elected.

The election of the Chairperson and members of the Agency's Council, for the first time in accordance with the provisions of the new Law, which began in 2017, was completed in March 2018. Accordingly, the new members of the Agency's Council commenced their mandate in March 2018. Following the expiration of the mandate of two Council members, and in accordance with the prescribed legal procedure, two new members of the Agency's Council were elected, who commenced their mandate at the end of 2024.

The Agency has its own financing sources, defined by the Law, separate from the state budget.

The Agency is financed from the revenue arising on the basis of regulation activities from the part of regulated revenues from the system access set by the methodologies adopted by the Agency, on the basis of energy license issuance, as well as from other revenues from the activities within its jurisdiction in line with the law. The Agency may also raise funds from grants, except from the grants from energy entities or persons connected to those entities.

Pursuant to the Article 61 of the Law, the Agency adopts a Financial Plan defining total revenue and expenditure, including contingency funds and elements for full insight into the compensation and employment policy which provide adequate professional personnel. The financial plan is approved by the National Assembly. The financial plan is submitted to the National Assembly at the latest by the end of October of the current year for the following year. Upon the approval of the National Assembly, it is published in the "Official Gazette of the Republic of Serbia". The Agency submits annual Financial Plan to the National Assembly regularly and within the prescribed deadline to the National Assembly.

The Agency 2024 Financial Plan was adopted by Agency Council within the prescribed timeframe on October 19, 2023 and it was submitted to the National Assembly for adoption purpose on the same day. On July 31, 2024, the National Assembly adopted a decision on the approval to the 2024 Financial Plan of the Energy Agency of the Republic of Serbia. The adoption of the Financial Plan of the Agency created conditions for further improvement of the Agency work and of its organizational structure and the number of employees. The Decision of the National Assembly of RS on the Approval of the AERS 2024 Financial Plan was published in the Official Gazette No. 62/24 of July 31, 2024.

Annual calculations of revenue and expenditure of the Agency are audited by an authorised auditor. The auditor's report is also submitted to the National Assembly. If one determines that the annual revenue of the Agency exceeds total expenditure, the deviation amount is transferred into the financial plan as revenue for the following year. However, the sources and the amount of revenue for the following year are harmonised with realistic expenditure of the Agency for that year approved by the National Assembly.

INDICATORS OF INDEPENDENCE OF ENERGY REGULATORY AUTHORITIES

The reasons for the transfer of some of jurisdiction related to economic regulation in the electricity and natural gas sectors from state bodies to independent regulatory authorities may differ, but the common idea behind this is to strive to remove the risks arising from market imperfections (natural and/or factual monopoly in the sector), to remove noted weaknesses of the centralized (state) management of the energy sector (stimulating competition) and to strengthen the credibility of the sector in the eyes of potential investors. Therefore, the objective of most energy regulators is to protect customers and investors, while the main mechanisms to achieve that is to regulate prices, prescribe rules and monitor the actions market participants.

There is mutual link between Agency goals, functions and activities with those of the EU electricity and natural gas regulatory authorities since the EU *acquis communautaire* (directives and regulations) have been implemented in the energy sector. The 2014 Energy Law also transposed the provisions strictly prescribing the regulator's independence into the legal system of the Republic of Serbia, i.e.:

- functional independence;
- personal independence and
- financial independence.

Functional independence

An independent regulatory body has to be free in the selection of instruments used to perform the duties in its jurisdiction. The regulator is not allowed to accept instructions from state institutions or energy entities (companies) and regulator's decisions cannot be subject to approval or annulment by executive authorities.

Personal independence

Personal independence of a regulatory authority is provided by:

- setting strict criteria for the appointment (expertise, lack of conflict of interest) and dismissal (e.g. legally-binding conviction for criminal act, offence against rules on the conflict of interest) of management body members (in Serbia: Council of the Agency);
- establishment of rotation between management body members, by not having all management members' mandate ending at the same time, thus providing the separation between processes of the selection of regulator's management and election cycles on political level and
- autonomy in the human resources recruiting - issues related to organisation and human resources have to be within exclusive jurisdiction of the regulator. Regulatory authority has to have autonomy in making decisions on the engagement and dismissal of employees, as well as on the number of them.

Financial independence

Financial independence of the regulatory authority is provided by:

- full independence from the state budget (as prescribed by the Energy Law) or clear independence of the regulator's budget from other budget beneficiaries within the state budget;
- autonomy in the allocation of approved funds. It implies that the regulatory authority has the exclusive right to make decisions on how the approved budget will be spent, i.e. the regulator may neither ask nor accept instructions on its budget. Namely, procedure prescribed in the Energy Law implying that the National Assembly approves the Financial Plan of the Agency does not contradict the principles of regulatory authority independence. In the opinion of the European Commission expert departments, the role of the legislature authorities (parliament) is to approve general financial allocation (not individual budgetary items) in order to enable the regulatory authority to perform the duties entrusted to it by the law in an efficient and effective way.

Full independence of the regulatory authority is also one of obligations on the accession of the Republic of Serbia to the European Union and it is subject to the European Commission in the process of accession to the European Union. Criteria of independence of the Energy Agency as regards compliance with obligations arising from the Treaty establishing the Energy Community ("Official Gazette of RS", No. 62/06), Berlin Process and CESEC Initiative is also monitored by the Energy Community Secretariat. The position and the role of the Energy Agency within the legal system of the Republic of Serbia are defined by the Energy Law which also transposes the provisions of the European energy law (the so-called Third Package of regulations on internal EU energy market) which regulate functional, personal and financial independence of the regulatory authority.

7.2 Activities of the Agency in 2024

In 2024, the Agency Council which manages the Agency held 49 sessions (47 regular ones and 2 extraordinary ones) during which decisions, approvals, certificates and other acts in the fields of: price regulation, issuance of energy licences, electricity and natural gas market monitoring establishment and implementation, internal organisation of the Agency and other issues within the jurisdiction of the Council were adopted.

7.2.1 Licensing energy entities

Activities which the Agency performs as entrusted ones, related to the issuance of licences of energy entities for energy activities are administrative-legal procedures which include:

- issuing licences for energy activities;
- amendments to issued licences;
- withdrawal, revoking and adoption of decision on withdrawal of the licence by virtue of law;

- monitoring the fulfilment of prescribed requirement by energy entities during the validity period of the licence and
- keeping registry of issued and withdrawn licences.

Requirements for issuance and withdrawal of licenses and keeping registry of issued licenses are prescribed by the Energy Law and the Rulebook on Energy Licence and Certification (“Official Gazette of RS”, No. 87/15, 44/18 – other law and 83/21) regulating the conditions for issuing licenses for energy entities and certification and which are adopted by the ministry in charge of energy issues. These are the main regulations the Agency implements within the licence issuance procedure. The rulebook on energy licence and certification is available with prescribed forms and proofs which are necessary to be submitted along with the application for energy license on the Agency website.

The registry of issued licenses is a public document and it is both available in the written form and kept in the Agency registry and in the electronic form available on the website of the Agency (www.aers.rs).

In order to perform these duties, in line with its legal jurisdiction, the Agency adopts a regulation on the level of costs for the issuance of energy licences. The act is approved by the Ministry of Finance and published in the “Official Gazette of RS”. The act defines the cost of the Agency related to the provision of this public service which implies the establishment of the compliance with the conditions for the performance of energy activities for each energy activity separately which is borne by licence applicants. The Decision on Harmonisation of the Level of Costs for Energy Licence Issuance (“Official Gazette of RS”, No. 24/23 and 29/24) which was in force in 2024 is published on the Agency website.

The Council of the Agency adopts a decision on the issuance of a licence for the performance of an energy activity within the administrative procedure. Once the decision enters into force, the Agency includes that licence in the registry of licences.

In 2024, the Agency Council issued licences for 9 energy activities out of 31 energy activities for which they are competent to issue licences.

In 2024, the Agency received 83 licence applications. Along with 2,650 applications received in 2006-2024, it amounts to 2,733 applications in total.

In 2024, the processing of incomplete applications from the previous year, as well as applications received during the year, continued. By the end of the year, the Agency’s Council had adopted decisions to issue 72 new licenses, while in 6 cases the procedure was concluded by rejection of the application, in 3 cases the application was denied, and in 2 cases the procedure was suspended. During 2024, the Agency also adopted 2 decisions on the temporary, and subsequently permanent, revocation of licenses. Additionally, in 11 cases, license issuance decisions were revoked at the request of energy entities, and two licenses expired by virtue of law. Since numerous licences were issued in the past and since licenced energy entities did not apply for the extension of their validity even after their validity period expiration, these licences were erased from the public Registry of Issued Licences which is kept by the Agency *ex officio*. At the end of 2024, there were 934 ruling licences registered.

In certain cases, the applications filed with the Agency did not include all the necessary documents and therefore, they were amended in line with the law regulating administrative procedure by energy entities upon the Agency’s request. After noticed inadequacies were removed and application files completed, applications were reassessed in order to check if the conditions for licence issuance are met.

As of 2008, there was a great number of applications for the amendments of the decisions on issuance of energy licenses, especially in the oil sector – for the activity: trade in motor fuels and other types of fuels on petrol stations and trade in oil, oil derivatives, biofuels, bioliquids, compressed natural gas, liquefied natural gas and hydrogen. Most applications were submitted due to the change of facilities where energy activity is performed. In 2024, the Agency adopted 46 decisions on amendments on decisions mostly for the issuance of license for activities in the oil sector.

The Agency is not responsible for energy entities that did not comply with the conditions for issuing licence. In 2024, not one report of a competent inspector was submitted to the Agency that could be the ground for filing an economic offence against a legal person performing energy activity without a licence.

The number of submitted applications and of licences issued in 2024 (some applications are from 2015 and licences issued in 2024) for each activity are given in Table 7-1.

Table 7-1: Submitted applications and approved licenses in 2024 per each activity

No.	Activity	No. of applications	No. of approved licences
1	Power production	6	5
2	Combined power and heat production	0	0
3	Electricity transmission and transmission system operation	0	0

4	Electricity distribution and distribution system operation	0	0
5	Electricity distribution and closed system operation	0	0
6	Electricity supply	5	5
7	Aggregating	0	0
8	Electricity wholesale supply	12	11
9	Organised electricity market operation	0	0
10	Electricity storage	0	0
11	Natural gas transmission and transmission system operation	0	0
12	Natural gas storage and storage operation	0	0
13	Natural gas distribution and distribution system operation	0	0
14	Natural gas supply	13	14
15	Natural gas wholesale supply	6	6
16	Natural gas public supply	1	0
17	Oil derivatives production	0	0
18	Oil transport through oil pipelines	0	0
19	Oil derivatives transport through product lines	0	0
20	Storage of oil, oil derivatives and biofuels	1	1
21	Trade in oil, oil derivatives, biofuels, bioliquids, compressed natural gas, liquefied natural gas and hydrogen	5	4
22	Trade in fuels outside petrol stations	0	0
23	Filling vessels for liquid petroleum gas, compressed and liquefied natural gas	3	3
24	Trade in motor fuels and other fuels on petrol stations	31	24
25	Trade in fuels meant for vessels	0	0
26	Biofuels production	0	0
27	Biomethane production		
28	Bio liquids production	0	0
29	Blending biofuels with fuels of oil origin	0	0
30	Blending bioliquids with fuels of oil origin	0	0
31	Hydrogen production	0	0
	Total	83	72

The updated register of licensed energy entities for each energy activity is available on the Agency's website (www.aers.rs).

7.2.2 Price regulation

In the field of price regulation, in August 2024 the Agency's Council amended the Methodology for Determining the Transmission System Access Price for electricity, and in December 2024, it amended both the Methodology for Determining the Distribution System Access Price for electricity and the Methodology for Determining the Electricity Price for Guaranteed Supply.

Additionally, in August 2024 the Council amended the methodologies that, in accordance with the Law, determine the formation of regulated prices for energy entities in the natural gas sector, namely: the Methodology for Determining the Natural Gas Transmission System Access Price and the Methodology for Determining the Natural Gas Storage Access Price.

During 2024, the Agency prepared a Draft of the new Methodology for Determining the Transmission System Access Price in order to align it with the Regulation on Network Rules on Harmonized Natural Gas Tariffs ("Official Gazette of the RS," No. 112/22), conducted public consultations on the proposed methodology, and, following the positive opinion of the Energy Community Regulatory Board, adopted the Methodology for Determining the Transmission System Access Price for Natural Gas in January 2025 ("Official Gazette of the RS," No. 12/25).

Acting within its powers established by the Law, the Agency's Council also amended the Methodology for Calculating Unauthorized Electricity Consumption in August 2024. This methodology defines the calculation method for all cases of unauthorized consumption as defined by the Law. According to the Law, the distribution system operator calculates

the unauthorized consumption of electricity in accordance with this methodology and issues and delivers a bill to the person who has consumed electricity without authorization.

In January 2022, the Council of the Agency adopted a Methodology for Setting Prices of Ancillary Services and Prices of Capacity Reserve for System Services of Secondary and Tertiary Control. Upon this, in line with the Methodology, in February 2022, the Council adopted decision on prices of system and ancillary services within the power system for 2022. In addition, in December 2023, based on the given Methodology, the Agency Council adopted a decision on prices of system and ancillary services in the power system for 2024. In November 2024, the Council adopted a decision on the price of system and ancillary services in the power system for 2025. By these decisions, the Agency set the prices of capacity reservation for system services of secondary and tertiary control which are necessary so as to secure safe, reliable and stable operation of the power system, i.e. for the ability to regulate frequency and exchange capacity. The Agency also set the prices of ancillary services related to voltage regulation, i.e. reactive power and prices of unit running from black start.

In 2024, the Council of the Agency approved the following decisions on prices:

- In the field of oil and oil derivatives:
 - Decision on the access price to the oil transportation system of Transnafta a.d., in September 2024.
- In the field of natural gas:
 - Consent to the decision on the level of connection costs of the following distribution system operators:
 - Gas d.o.o. Bečej, in January 2024;
 - JKP Toplana Šabac, in March 2024;
 - JP Vrbas-Gas Vrbas, Loznica Gas d.o.o. Loznica, and JP Elgas Senta, in April 2024;
 - JKP Drugi oktobar Vršac, JKP Standard Ada, and JP Kovin Gas Kovin, in May 2024.
 - Consent to decisions on the prices of non-standard services of the following system operators:
 - Gas Bečej d.o.o. Bečej, in January 2024;
 - Sigas d.o.o. Požega, in February 2024;
 - JKP Drugi oktobar Vršac, in November 2024.

In line with the jurisdiction, in July 2024, the Council of the Agency adopted a legal act confirming that charges for long-term capacity and initial prices of capacity products of Gastrans LLC were set in line with the act on exemption and the Tariff Methodology for Setting Tariffs for Natural Gas Transmission Service of Gastrans LLC as well as the decision granting consent to the amendment of the Tariff Methodology for the calculation of tariffs for the natural gas transportation service of Gastrans LLC in August 2024.

In April 2021, the Council of the Agency adopted a Decision on Method, Procedure and Deadline for Keeping Bookkeeping Registry for the purpose of regulation and realization of unbundling accounts for different activities.

This Decision defines in more detail the method, procedure and deadlines for keeping business books as bookkeeping registries for the purpose of regulation, of the realization of unbundling accounts of energy entities for different activities and it sets the type of data and documentation necessary for the work and for the observation of efficiency of accounts unbundling by the Agency, in line with the Law.

Permanent activities of the Agency related to price regulation include:

- Provision of professional assistance to energy entities as regards the enforcement of methodologies for setting prices and monitoring their adequate implementation;
- Monitoring the enforcement of methodologies for setting costs of connection to electricity transmission and distribution system, i.e. to natural gas transmission and distribution and deciding upon customers' appeals which provides adequate level of customer protection and directly contributes to appropriate implementation of methodologies in practice;
- Provision of professional support to energy entities as regards unbundling their funds and costs into different activities, as well as the control over unbundling;
- Monitoring and analysis of data submitted by energy entities as regards realised costs and regulated prices;
- Half-yearly monitoring and comparison of actual electricity and natural gas prices in the region and in Europe and
- Analysis of solutions and solution proposals as regards price regulation and drafting amendments and improvement of existing legislation.

7.2.3 Monitoring electricity and natural gas market

So as to create conditions for proper market functioning, the Law stipulates the adoption, i.e. harmonisation with the new Law of all the rules prescribed by the Law. In 2012, the Agency Council adopted Rules on Supplier Switching ("Official Gazette of RS", No. 93/12). In 2015, the Council adopted new Rules in order to harmonised them with the 2014 Law and the Rules were amended in 2017 ("Official Gazette of RS", No. 65/15 and 10/17). The rules on supplier and aggregator switching, including collective switching, will be aligned with the amendments to the Law from November 2024 and other subordinate legislation within the statutory deadline.

In late 2013, the Agency Council adopted the Rules for Monitoring Technical and Commercial Indicators and Regulation of Quality of Electricity Supply (“Official Gazette of RS”, No. 2/14). In 2024, the Council took care of their implementation.

In March 2016, the Council adopted the Rulebook on Method of Procedure and Imposing Measures and Keeping Registry of Imposed Measures which is applied to those market players who do not comply with their obligations prescribed by the Law.

In July 2016, the Agency Council adopted a Decision on Procedure of Exercising Right of Final Customer to Access Data on One’s Own Electricity and Natural Gas Consumption.

Acting in line with the jurisdiction prescribed by the Law on Amendments to Energy Law from April 2021 (“Official Gazette of RS”, No. 40/21), within the legal deadline, in June 2021, the Council of the Agency adopted 8 instructions for drafting network codes in the fields of electricity (3) and natural gas (5). These instructions provide guidelines to system operators for the preparation of bases for drafting “network codes” which regulate the connection to the electricity transmission and distribution system in the electricity field and capacity allocation, congestion management, interoperability, setting transmission use-of-system charges structure and transmission system balancing in the field of natural gas, i.e.:

- Instruction for drafting network code related to connection of production units to the network;
- Instruction for drafting network code related to connection of customers’ facilities to the network;
- Instruction for drafting network code for connection of high voltage direct current systems to the network;
- Instruction for drafting network code on harmonised natural gas transmission use-of-system charges;
- Instruction for drafting network code on natural gas transmission capacity calculation and allocation;
- Instruction for drafting network code on procedure for congestion management and publication of technical data and other data and pieces of information for the access to the natural gas transmission system;
- Instruction for drafting network code on cooperation between operators of connected transmission systems and rules on data exchange;
- Instruction for drafting network code on rules for natural gas balancing in transmission.

In August and September 2021, the Council of the Agency approved the text of all eight network codes which were prepared by system operators in line with given instructions which confirmed the compliance of the Adapted Texts of Electricity and Natural Gas Network Codes for the purpose of adoption of legal acts of network codes which are adopted by the Government upon the proposal of the Ministry of Mining and Energy in line with the Law. In September and October 2022, the Government of the Republic of Serbia adopted all eight network codes in the fields of electricity and natural gas from Article 93a of the Law.

Acting in accordance with the new authorities established by the network codes related to connection, the Agency’s Council issued decisions in December 2023 on determining the criteria for granting exemptions from the application of these rules for connecting production units to the network, as well as for connecting customers’ facilities. Both decisions, and the established criteria, were published on the Agency’s website in accordance with the network rules regulations.

In October 2021, the Council of the Agency adopted Rules on Prevention of Abuse in Electricity and Natural Gas Markets (REMIT Rules). These rules specify conditions for the registration of wholesale electricity and natural gas markets participants in line with obligations of the Republic of Serbia assumed by ratified international treaties and the law regulating the energy field (the so-called light REMIT). In March 2022, the Agency Council adopted Instruction for Registration Procedure, Keeping Registry and Wholesale Market Players Monitoring.

In line with REMIT rules and this Instruction, as of April 1, 2022, the Agency initiated the registration of wholesale electricity and natural gas market players. Acting upon submitted registration applications of players intending to perform wholesale transactions by placing trading orders, by the end of 2024, the Agency registered 76 electricity and natural gas wholesale market players in Serbia. The registry of all wholesale market players who applied is available on the website of the Agency as well as all necessary information relevant for monitoring their behaviour in the market as well as formats which are used by players for filing the application, format for notification of misuse in the market and the notification on the delay in the publication of insider information which are published in line with the commitments arising from ratified international treaties (Law on Establishing Energy Community).

The remaining rules are adopted by energy companies, upon the Agency’s approval.

In November 2024, the Council of the Agency approved the following rules:

- Rules for the allocation of transmission capacities between bidding zones of the Republic of Serbia and Hungary - Harmonized Allocation Rules for the distribution of long-term transmission rights, Rules for the explicit allocation of daily transmission capacities at the border between the trading zones of Hungary and Serbia, and Rules for the allocation of intraday transmission capacities at the border between the MAVIR ZRT (MAVIR) trading zone and EMS AD Belgrade for the year 2025;

- Rules for Transmission Capacity Allocation between Trading Zones of the Republic of Serbia and Romania (Rules for Annual and Monthly Transmission Capacity Allocation on Border between Trading Zones *C.N.T.E.E. TRANSELECTRICA S.A.* and *EMS JSC Belgrade* for 2025; Rules for Daily Auctions for Interzonal Capacity Allocation on Border between Trading Zones of *EMS JSC Belgrade* and *C.N.T.E.E. TRANSELECTRICA S.A.* for 2022 and Rules for Intraday Transmission Capacity Allocation on Border between Trading Zones *C.N.T.E.E. TRANSELECTRICA S.A.* and *EMS JSC Belgrade* for 2025);
- Rules for Transmission Capacity Allocation between Trading Zones of the Republic of Serbia and the Republic of North Macedonia (Rules for Annual and Monthly Auctions for Transmission Capacity Allocation on Border between Trading Zones of *EMS JSC Belgrade* and *AD MEPSO* for 2025; Rules for Daily Auctions for Transmission Capacity Allocation on Border between Trading Zone of *EMS JSC Belgrade* and *AD MEPSO* for 2022 and Rules for Intraday Transmission Capacity Allocation on Border between Trading Zones of *EMS JSC Belgrade* and *AD MEPSO* for 2025)
- Rules for the allocation of transmission capacities between the trading zones of the Republic of Serbia and Montenegro (Rules for annual and monthly auctions for the allocation of transmission capacities at the border between the trading zone of *EMS AD Belgrade ("EMS")* and the Montenegrin Transmission System *AD Podgorica ("CGES")*);
- Rules for the allocation of transmission capacities between the trading zones of the Republic of Serbia and Croatia (Harmonized Allocation Rules for long-term transmission rights; Rules for the explicit allocation of daily transmission capacities at the border between the trading zones of Croatia and Serbia; and Rules for the allocation of intraday transmission capacities at the border between the trading zones of the Croatian Transmission System Operator ("*HOPS*") and *EMS AD Belgrade ("EMS")*);
- Rules for the allocation of transmission capacities between the trading zones of the Republic of Serbia and Bulgaria (Rules for the explicit allocation of daily transmission capacities between the trading zones of Bulgaria and Serbia; and Rules for the allocation of intraday transmission capacities at the border between the trading zones of *ELECTROENERGY SYSTEM OPERATOR EAD* and *EMS AD Belgrade*);
- Rules for the allocation of transmission capacities between the trading zones of the Republic of Serbia and Bosnia and Herzegovina (Rules for annual and monthly auctions for the allocation of transmission capacities at the border between the trading zones of *EMS AD Belgrade* and the Independent System Operator in Bosnia and Herzegovina ("*NOSBiH*"); Rules for daily auctions for the allocation of transmission capacities at the border between the trading zones of *EMS AD Belgrade* and the Independent System Operator in Bosnia and Herzegovina ("*NOSBiH*"); and Rules for the allocation of intraday transmission capacities at the border between the trading zones of *EMS AD Belgrade* and the Independent System Operator in Bosnia and Herzegovina ("*NOSBiH*").

In June 2022, the Agency Council adopted the Report on the Assessment of Compliance with Prescribed Conditions for Nomination of SEEPEX JSC as an independent organized electricity market operator in the Republic of Serbia (NEMO) which is a condition for NEMO appointment by the Government of RS in line with the Law.

In 2024 the Agency monitored the enforcement of formerly adopted rules by analysing needs and initiatives for amendments of these rules also by participating in the work of commissions appointed to monitor their enforcement. In all established commissions, a representative of the Agency also participates as an observer.

During 2024, the Agency's Council also granted consent to the following acts:

- Rules on amendments to the Market Rules of AD EMS, in December 2024;
- Rules on amendments to the Rules for Connection of Facilities to the Transmission System of AD EMS, in March 2024;
- Rules for the suspension and resumption of market activities of EMS AD Belgrade, in January 2024;
- Transmission System Development Plan of the Republic of Serbia for the period 2023–2032, EMS AD Belgrade, in March 2024;
- Transmission System Investment Plan of EMS AD Belgrade for the period 2023–2025, in March 2024;
- Transmission System Investment Plan of EMS AD Belgrade for the period 2024–2026, in December 2024;
- Decision establishing maximum power thresholds for generation modules of types B, C, and D, EMS AD Belgrade, in February 2024;
- Decisions of EMS AD Belgrade approving operational limits for connecting facilities to the transmission system (consent to 48 decisions in April 2024 and 22 decisions in December 2024);
- Distribution System Development Plan for the period 2023–2032, Elektrodistribucija Srbije d.o.o. Belgrade, in July 2024;
- Distribution System Investment Plan for the period 2023–2025, Elektrodistribucija Srbije d.o.o. Belgrade;
- Rules on amendments to the Rules on the Operation of the Gas Distribution System, JP Srbijagas;
- Oil Pipeline Transport System Development Plan for the period 2024–2028, with the Investment Plan for 2024–2026, Transnafta AD Pančevo, in May 2024;
- Distribution System Development Plan of Jugorosgaz AD Belgrade for the period 2024–2028, with the investment plan, in October 2024;

- Natural Gas Distribution System Development Plan with Investment Plan for the period 2024–2087, JKP “Standard,” Ada, in October 2024.

As an observer, one representative of the Agency participates in all the commissions which have been established so far.

In 2023, the Agency Council approved the following acts:

- Transmission System Code of EMS AD in November 2023;
- Rules for connecting facilities to the transmission system of EMS AD in November 2023;
- Procedure for connecting facilities to the transmission system and part of the distribution system managed by the transmission system operator EMS AD in November 2023;
- Oil Transport System Code of Transnafta Ltd. Pančevo in April 2023;
- Transmission System Development Plan of Yugorosgaz-Transport LLC Niš for the period 2023-2032 in October 2023;
- Transmission System Development Plan of Transportgas Serbia LLC Novi Sad for the period 2022-2031 in December 2023;
- Natural Gas Distribution System Development Plan with an Investment Plan for the period 2023-2027 by RESAVA-GAS Svilajnac in December 2023;
- Natural Gas Distribution System Development Plan with an Investment Plan for the period 2023-2027 by GAS BEČEJ LLC Bečej in December 2023;
- Natural Gas Distribution System Development Plan with an Investment Plan for the period 2023-2027 by JKP 7. Oktobar Novi Kneževac in February 2023;
- Natural Gas Distribution System Development Plan with an Investment Plan for the period 2024-2028 by JKP 7. Oktobar Novi Kneževac in December 2023;
- Natural Gas Distribution System Development Plan with an Investment Plan for the period 2023-2027 by SIGAS LLC Požega in December 2023;
- Natural Gas Distribution System Development Plan with an Investment Plan for the period 2023-2027 by Sombor Gas LLC Sombor in August 2023;
- Natural Gas Distribution System Development Plan with an Investment Plan for the period 2023-2027 by JKP “Standard”, Ada in January 2023;
- Natural Gas Distribution System Development Plan of Yugorosgaz AD Belgrade for the period 2023-2027 in December 2023.

Programmes for non-discriminatory treatment, which, in line with the law, distribution system operators which are a part of a vertically integrated company are supposed to adopt are important for energy market monitoring. These programmes are approved by the Agency. In June 2016, the Council of the Agency approved the Compliance Programme for Non-Discriminatory Behaviour of Distribution System *EPS Distribucija* LLC Belgrade. The Council also approved conditions for the appointment and duration of term of the distribution system operator compliance officer. In July 2017, the Agency Council approved the Annual Report on Implementation of Compliance Programme for Non-Discrimination Behaviour for 2016 which was submitted by the compliance officer. By the decision of September 2019, the Agency Council did not approve the Annual Report on Implementation of Compliance Programme for Non-Discrimination Behaviour for 2018. At the end of 2020, the Government of the Republic of Serbia started activities in order to perform adequate unbundling of the distribution system operator from the vertically integrated company PE *EPS* (separation of *Elektrodistribucija Srbija d.o.o. Belgrade*) which was finalized in early 2021. In January 2021, the Council of the Agency adopted a decision on the disapproval of the Annual Report on Non-Discriminatory Compliance Programme for 2019. In October 2021, the Council adopted a Justified Opinion on Annual Report on Compliance Program Implementation for 2020 where the deficiencies in terms of unbundling within the given period were indicated, too.

In February 2022, the Agency Council approved the new Compliance Programme for Provision of Non-Discriminatory Behaviour of the Electricity Distribution System Operator which was adopted by “Elektrodistribucija Srbije” LLC Beograd following the completion of reorganization. In addition, in June 2022, the Agency Council approved the conditions for the appointment of the Compliance Officers. The Agency also gave prior consent to the appointment of the Compliance Officer within the “Elektrodistribucija Srbije” LLC Beograd.

Due to the change of the person responsible for monitoring compliance, in February 2023 the Agency’s Council granted consent to the conditions for the appointment and the term of office of the new Compliance Officer of the electricity distribution system operator “Elektrodistribucija Srbije” d.o.o. Belgrade. In September 2023, the Council issued a Reasoned Opinion on the Annual Report of this Officer on the implementation of the Compliance Program for 2021.

In June 2024, the Council issued a Reasoned Opinion on the Annual Report on the implementation of the Compliance Program for 2022, which the Compliance Officer submitted to the Agency in May 2024, and in December 2024 it

issued a Reasoned Opinion on the Annual Report on the implementation of the Compliance Program for 2023, submitted in October of the same year.

In carrying out the prescribed obligations established in the regulations governing network rules in the field of natural gas, in 2024 the Agency:

- Adopted a Decision on the designation of interconnection points that are not interconnectors, at which the calculation and allocation of natural gas transmission capacity is carried out;
- Conducted public consultations on the Draft Decision designating Transportgas Serbia d.o.o. Novi Sad as the party responsible for estimating off-takes of natural gas at delivery points without daily metering (the Agency adopted this decision in January 2025);
- Upon request of Transportgas Serbia d.o.o. Novi Sad, carried out the prescribed consultations with neighboring regulatory authorities in the procedure for granting the requested consent to the Report on the determination and application of temporary measures for balancing (the Agency adopted the consent decision for this report in January 2025);
- Evaluated the results of the public consultation and proposed solutions in the Draft Rules for the operation of the natural gas transmission system prepared by Transportgas Serbia d.o.o., after which, in January 2025, it adopted a Decision granting consent to the Rules for the operation of the transmission system issued by Transportgas Serbia d.o.o.

In order to fulfill the prescribed conditions for non-discriminatory and independent operation of the transmission system operator, in 2024 the Agency also adopted:

- A Decision granting consent to the Non-Discriminatory Conduct Program of Transportgas Serbia d.o.o. dated 9 May 2024, a Decision on the conditions for the appointment of the Person Responsible for Monitoring the Non-Discriminatory Conduct Program, dated 9 May 2024, and a Decision granting prior consent to the Draft Decision on the appointment of the Person Responsible for Monitoring the implementation of the Non-Discriminatory Conduct Program at Transportgas Serbia d.o.o.;
- A preliminary Decision on issuing a certificate at the request of Transportgas Serbia d.o.o. Novi Sad, which was certified according to the independent system operator model. This decision was forwarded by the Agency to the opinion of the Energy Community Secretariat, and upon receipt of this opinion on 21 November 2024, the Agency is obliged to adopt a final certification decision within four months.

Upon the request of the company *GASTRANS LLC* Novi Sad in March 2019, the Agency Council adopted a Final Decision on New Natural Gas Interconnector Exemption which enabled exemption to the company *GASTRANS LLC* from the obligation of ownership unbundling, third party access rules and application of regulated natural gas transmission prices for 20 years. In March 2019, the Agency also approved the following legal acts of this company in order to implement the mandatory long-term transmission capacity allocation:

- Tariff Methodology for Calculation of Natural gas Transmission Use-of-System Charges;
- Model of long-term contract on natural gas transmission which is concluded between *GASTRANS LLC* and participants of mandatory phase of long-term capacity allocation for which there is an exemption from third party access approved;
- Non-Discrimination Behaviour Compliance Programme of *GASTRANS LLC*;
- Decision on Conditions for Appointment of the Non-Discrimination Behaviour Compliance Programme Officer and
- Act on Appointment of Non-Discrimination Behaviour Compliance Programme Officer.

Following this, as early as in February 2020, the Agency certified *Gastrans d.o.o.* as a project company since at that moment the construction of the gas interconnector was ongoing. An obligation was prescribed to *Gastrans* to submit evidence on the compliance of all the requirements for independent and non-discriminatory performance of natural gas transmission to the Agency following the expiration of the prescribed deadline and once the commercial operation begins. Within the deadline set in the certification act, *Gastrans* submitted evidence to the Agency based on which the Agency adopted a decision in 2022 on confirming that *Gastrans LLC* complied with all the conditions set by the Agency within the certification act which was adopted in February 2020. During 2024, *ex officio*, the Agency monitored compliance with the conditions affecting the validity of the certificate issued to *Gastrans d.o.o.*

In May 2020, the Agency approved Transmission Network Code of *Gastrans d.o.o.*

In December 2020, the Agency issued a license to *Gastrans Ltd.* for the activities of natural gas transportation and management of the natural gas transport system. In the same month, the Agency issued a decision confirming the formation of tariffs and initial prices for access to the transport system at the request of *Gastrans Ltd.*

The Agency assessed the correctness of the tariffs for long-term capacity and initial prices for access to the transport system established by *Gastrans Ltd.* by reviewing the requests submitted by *Gastrans Ltd.* to the Agency in 2021, 2022, 2023 and 2024.

Throughout 2021, 2022, 2023 and 2024, the Agency monitored the performance of transportation activities by *Gastrans* Ltd., as well as the reporting by the person responsible for overseeing the implementation of the Non-Discriminatory Behavior Program at *Gastrans* Ltd. and the actions of *Gastrans* Ltd in line with the Program Compliance Officer's recommendations.

7.2.4 Deciding upon appeals

Pursuant to the Law, deciding upon appeals (second instance administrative procedure) which is performed as entrusted activities includes deciding upon the following appeals against:

- operator's acts which represents a decision upon an application for connection to the system, i.e. upon appeals filed when the system operator does not adopt a decision upon application for connection to the system in line with the timeframe prescribed by the Law;
- operator's acts on dismissal of access to the system, i.e. appeals filed due to failure to act upon filed request for access to the system within the timeframe prescribed by the Law and
- acts of energy entities dealing in oil transport through oil pipelines or energy entity dealing in oil derivatives transport through product lines on dismissal of access to the system as well as appeals filed due to failure to settle a request for access to the system within the timeframe prescribed by the Law.

Within the procedure of deciding upon appeals of customers, i.e. system users, the Agency tends to provide the protection of their rights via the provision of legality of decisions adopted by system operators.

In 2024, there were 341 files submitted and they mainly dealt with the activities and behaviour of energy entities in different areas of their operations. 142 of them are appeals settled by the Agency in the administrative procedure as entrusted activities, while 199 of them are different petitions and complaints submitted by natural and legal persons or requests related to the issuance of opinion on the enforcement of regulations within the competence of the Agency.

The Agency processed all the submitted complaints and submitted responses to the applicants while forwarding the issues to responsible state bodies for further procedure, when necessary.

As far as the appeals for which the Agency is responsible within the second instance procedure are concerned, all 142 appeals submitted for reasons stipulated by the Law were processed in 2024. The appeals were submitted:

- against failure of a responsible energy entity within the first instance procedure upon application on connection of the facility of the customer or producer to electricity or natural gas distribution system (the so called "administrative silence");
- against decision of electricity or natural gas distribution system operator dismissing application on connection to the system and
- against electricity distribution system operator's decision approving connection to the system, but customers complain against connection costs, technical conditions for connection, or against procedural decision of energy entities dealing in electricity distribution on suspension of procedure or dismissal of application.

In total, 140 appeals were filed against decisions of electricity distribution system operators, while there were 2 appeals filed against a decision adopted by natural gas distribution system operator.

So as to reduce the number of appeals and harmonise the practice of electricity distribution system operator in procedures implying applications on connection of facilities of both legal and natural persons to the power grid, the Agency made an analysis of all appeals submitted to it and of the most common reasons for annulment of decisions on connection within the procedure related to the appeal. In 2024, so as to reduce the number of unlawful decisions adopted by electricity distribution company, the Agency indicated the most common breaches of procedural and material regulations which lead to adoption of unlawful decisions and stressed legally binding commitments of energy entities within connection procedure. In 2024, there were 142 appeals which is considerably fewer than in 2023 (368) which means that the intensive cooperation in the past period with experts employed with electricity and natural gas distribution operators and who decide on applications on connection to the system yielded results.

Since the establishment of the Agency, with 2024 inclusive, there were 116 appeals to the Administrative Court of the Republic of Serbia against the decisions of the Agency within the second-instance procedure (Table 7-2):

Table 7-2: Number of appeals submitted to the Supreme/Administrative Court of RS against the Agency's decisions adopted within the second-instance procedure 2008-2024

Year	2008 – 2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Number	46	7	6	11	5	14	7	5	8	6	1	116

In 2021, a dispute was initiated at the Trade Court in Belgrade against the Agency as the Defendant 2 (Defendant 1 is the Ministry of Mining and Energy) upon a complaint for indemnity due to licence withdrawal which ended at the end of 2024 in favour of the Agency with the claim for damages being dismissed.

7.2.5 International activities

Pursuant to the Energy Law, ratified international agreements and Council decisions, the Energy Agency of the Republic of Serbia cooperates with regulatory authorities from other countries, as well as with other international bodies and organisations.

7.2.5.1 The Athens process and the Energy Community Regulatory Board (ECRB)

Signing and ratifying the "Treaty establishing the Energy Community" on October 25, 2005 in Athens which entered into force on 01/07/2006, the Southeast Europe countries (and UNMIK for APKM) and the EU initiated the process of creation of the Energy Community aiming at the expansion of the common EU energy market to the Southeast Europe region. By the decision of the Ministerial Council dated December 14, 2023, the "Energy Community Treaty" has been extended for 10 years, until 2036. In addition, based on Ministerial Council decisions, via the implementation of the Third Energy Package in the Energy Law, certain competences of the Energy Community Secretariat were introduced in the regulation of the national energy sector.

The Treaty establishing the Energy Community also defined the institutional framework for Energy Community functioning: Ministerial Council, Permanent High Level Group, Energy Community Regulatory Board, Energy Community Secretariat, Electricity Forum and Gas Forum. Subsequently, Oil Forum (2008), Legal Forum (2017), Sustainable Development Forum (2017) and Dispute Settlement Forum (2018) were founded.



Figure 7-1: Energy Community institutions

Pursuant to the commitments arising from the Treaty establishing the Energy Community, the Energy Agency of the Republic of Serbia participates actively in the work of Energy Community institutions¹⁷, at the same time taking into account customer interests protection, as well as the position and goals of both power and gas economy of the Republic of Serbia. Cooperation is developed in coordination with state bodies within the competence of the Energy Agency of the Republic of Serbia defined by the Law. The Energy Agency of the Republic of Serbia participates in the work of the Energy Community Regulatory Board (which is an advisory body to the Energy Community Ministerial Council with possible executive functions), as well as of the Electricity Forum and Gas Forum.

The Energy Agency of the Republic of Serbia has considerably contributed to the development of organisation and procedures for the functioning of regional and Pan-European electricity and natural gas markets through an active participation in the work of Energy Community institutions and their expert teams. A representative of the Energy Agency of the Republic of Serbia was the chairman of the Energy Community Regulatory Board Working Group for Electricity (ECRB EWG) 2007-2018, while several representatives of the Energy Agency of the Republic of Serbia chair some ECRB sub-groups. The efficiency of the work of these bodies could be improved by more prompt preparation and more timely submission of material for their sessions.

In 2024, the Energy Agency of the Republic of Serbia participated in the following activities of the Energy Community Regulatory Board (ECRB):

Strategic and joint activities

- Issuance of opinion on Preliminary Decisions on Transmission System Operators Certification in line with Article 9 of the Energy Community Ministerial Council Decision D/2011/02/MC-EnC on Implementation of Third Energy Package of Regulations on Internal Energy Market in the European Union;
- cooperation with associations of regulatory bodies in the energy field - Agency for Cooperation of Energy Regulators - ACER, Council of European Energy Regulators - CEER, Energy Regulators Regional Association – ERRA and Mediterranean Regulators – MedReg.

Electricity (Electricity Working Group)

The ECRB Electricity Working Group monitors activities on integration of electricity market in southeastern Europe and its functional integration into Pan-European electricity market. An integral part of this activity includes: regular monitoring of current affairs and processes related to electricity market integration in the EU; common workshops for ACER And ECRB on the EU CACM and FCA Regulation; harmonised regulatory survey of rules of the Coordinated Auction Office for Cross-Border Transmission Capacity Allocation on Interconnectors (SEE CAO) and preparation of

¹⁷ Costs of participation of Agency representatives within the Energy Community institutions are compensated by the Energy Community Secretariat

joint draft rules for the adoption within ECRB; method of appointment of Nominated Electricity Market Operator in Contracting Parties as Precondition for Electricity Market Coupling of Contracting Parties with the EU Markets – SDAC (Single Day-Ahead Coupling) within “early” implementation of the EU Regulation 1222/2015 in the Energy Community Contracting Parties which were drafted by the Energy Community Secretariat with cooperation with the European Commission and ACER.

- During 2024, the ECRB Electricity Working Group monitored the Secretariat of the Energy Community's activities concerning the implementation of adapted EU Directives and Regulations in the electricity sector, as adopted by the Energy Community Ministerial Council decisions at the end of 2022. This included regulations that represent so-called network codes essential for the functioning of the electricity market and the operational work of the Energy Community's electricity systems. These codes aim to create conditions for faster integration of the electricity market in the Western Balkans into the single pan-European electricity market of the European Union, as well as the harmonization of procedures in operational system management and balancing. Faced with the obligation of the Contracting Parties to the Energy Community to transpose these regulations into their national legislation by the end of 2023, and the fact that they are delayed and that, in the meantime, activities have been launched to reconfigure the South East Europe coordinated capacity calculation region (CCR SEE), the Energy Community Secretariat organized several virtual meetings related to these issues, as follows:
 - on 25 January 2024, a meeting with the regulatory authorities of the Contracting Parties on the implementation of the EIP – Electricity Integration Package;
 - on 29 July 2024 and 18 October 2024, meetings of the regulatory authorities and TSOs of the Energy Community on the status of the operationalization of the CCR, aimed at continuously informing the regulatory authorities of the Contracting Parties on these matters, with the participation of representatives of ACER and the European Commission;
 - on 11 April 2024, a workshop on market coupling (EU CACM Regulation);
 - on 22 March 2024, the sixth joint ACER and ENTSO-E workshop on long-term allocations based on flow-based capacity calculation;
 - on 22 April 2024, a workshop on regional TCMs under the CACM Regulation: implementation practice in the South East Europe capacity calculation region.
- During 2024, the Energy Community Secretariat continued the practice of holding working group meetings physically only once per year (together with the Athens Forum), while the remaining two meetings were held virtually. Workshops during 2024 were also organized virtually by the Energy Community Secretariat. The Chairs of the ECRB working groups initiated action against this decision, taking into account the increasing complexity of processes, the expansion of regulatory competences of the ECRB, and the need for live discussions and a higher number of meetings, but without success.
- Organized by the Energy Community Secretariat, the 29th Electricity Forum was held in Athens on 4 and 5 June 2024, through panel discussions covering the following key topics and issues: electricity market design – implementation of reforms; the way forward for delivering the transition; investments in renewable energy: analysis of CfDs (Contracts for Difference), PPAs (Power Purchase Arrangements), traders' revenues, and energy storage solutions; market coupling – entering the game; enhancement of inter-zonal electricity trade; unblocking grid connection requests and achieving a more efficient connection queue.
- Within the working subgroup dealing with the integration of renewable energy sources and flexibility, a report on the development of the regulatory framework for renewables and flexibility was finalized during 2024 and subsequently approved by the ECRB.
- Within the working subgroup dealing with the assessment of the status of implementation of the System Operation Guideline (SOGL), emergency situations and restoration in the Contracting Parties of the Energy Community, discussions were held during 2024 on whether this task should be performed by the ECRB working group or the Energy Community Secretariat, given that it was established that this is not an ENTSO-E task but rather an ACER responsibility.
- Within the wholesale market integration working group, a report assessing the day-ahead and intraday electricity markets, including cross-border balancing, was prepared at the end of 2024, based on questionnaires completed by the Contracting Parties.
- Within the working subgroup for monitoring cross-border electricity trade in South East Europe, in accordance with the ECRB Guidelines for Market Monitoring in South East Europe and using the market monitoring database and platform web interface (SEEAMMS), working group members entered data previously prepared by the TSOs. Problems were identified related to data entry on the platform, data sensitivity, lack of data protection, and the inability to update data. Due to the identified issues, it was not possible to prepare the annual market monitoring report. Discussions were held on the future of this project, in terms of verifying the application of indicators against ACER practice and adding indicators related to the application of the 70% capacity availability requirement.
- Instead of preparing a report on the compliance of the Contracting Parties with the requirements of EU Transparency Regulation 543/2013, the ECRB Electricity Working Group monitored during 2024 the achieved level of transparency of the Energy Community Contracting Parties via the Energy Community

- Secretariat's website, with continuous updates of data related to publication on the ENTSO-E Transparency Platform (EMFIP).
- The Electricity Working Group participated in the preparation of an annex within the Wholesale Electricity Market Monitoring Report in line with EU practice (using ACER indicators for assessing the state of the wholesale electricity market) for 2024. The format and content of the annex were aligned with the new visual approach of ACER reports.
 - The Electricity Working Group monitored the work of the Joint Experts Team for Market Coupling (JET EnC – Joint Experts Team Energy Community), which operates through virtual meetings and consists of representatives of transmission system operators and power exchanges (NEMOs). From 2024 onwards, in addition to the Chair of the working group, all representatives of regulatory authorities who are members of the ECRB EWG joined the work of the group. Representatives of ACER and the European Commission also participate in this joint expert team. During 2024, the focus of this team's work was the preparation of a preliminary opinion (shadow opinion) of the regulatory authorities of the Contracting Parties on the draft Market Coupling Operator Integration Plan (MCO IP), while ACER also prepared its own preliminary opinion. The regulatory authorities of the Contracting Parties did not agree for ACER's preliminary opinion to be a joint opinion with the ECRB, resulting in two separate opinions being issued. Due to delays in submitting the final version of the MCO IP to ACER and the risk of significantly prolonging the market coupling process in the Energy Community, and given the fact that no NEMO in the Contracting Parties has yet been designated in accordance with the transposed legislative package and therefore cannot submit the MCO IP to ACER, it was decided that only EU NEMOs would submit the MCO IP to ACER, which they did at the end of December 2024. The common interest of all Energy Community Contracting Parties is to couple their markets with SDAC by the end of 2025 in order to be exempted from the application of CBAM.

Natural gas (Natural Gas Working Group)

- Within the regular activities of the working group on wholesale market monitoring, carried out in accordance with the 2024 Work Programme, data were collected on the monitoring of the natural gas wholesale market in the Energy Community for 2023. The collected data on wholesale markets in the Energy Community relate to annual consumption, which in general showed a moderate downward trend in all Contracting Parties except North Macedonia compared to the previous year, as well as to sources of supply and the number of suppliers active at interconnection points. Data on natural gas wholesale prices were also analyzed, and a slight decline and stabilization of price levels during 2023 were observed;
- With regard to monitoring the implementation of network codes, data were collected and reports on the implementation of the Network Code on Harmonised Transmission Tariffs and the Network Code on Capacity Allocation and Congestion Management were prepared and adopted;
- In accordance with Article 27 of the Network Code on Harmonised Transmission Tariffs (NC TAR), the ECRB analyses the consultation document prepared by the competent regulatory authority for the purpose of public consultation during the adoption of the Methodology for setting natural gas transmission tariffs. During 2024, the Energy Agency of the Republic of Serbia and the regulatory authority of Moldova submitted the documentation required to conduct a public consultation, in line with the NC TAR, to the ECRB for its opinion. The working group analyzed the consultation documents of the Serbian and Moldovan regulators in accordance with the NC TAR in order to form the ECRB opinion. The ECRB opinion on the documentation submitted by AERS was positive;
- It was established that at certain, but not all, interconnection points, capacity allocation was in line with the Capacity Allocation Network Code. The Gas Working Group Report for 2023 concluded that it is necessary for all transmission system operators to allocate capacity at all interconnection points in accordance with the Capacity Allocation Network Code;
- The Gas Working Group Report for 2023 concluded that there was no congestion within the meaning of the Congestion Management Network Code. Therefore, there was no need to apply congestion management measures;
- During 2024, the working group also worked on recommendations for capacity bundling at interconnection points in the Energy Community;
- The regulatory framework for the application of biogas in the Energy Community was examined, and a report on the development of the biogas market and potential pathways for its development was adopted. The report covered topics such as biogas production in Energy Community members, the regulatory framework for biomethane production, the competences of regulators in this area, experience with biogas in EU countries, and national biogas strategies;
- Organized by the Energy Community Secretariat, the 19th Gas Forum was held in Vienna on 16 and 17 September 2024. Panel discussions addressed the following key topics and issues for the gas sector: strengthening security of gas supply, decarbonization of the gas market, new supply routes and sources

in Central and South East Europe with increased transparency, the state of the natural gas market, and regulatory issues related to ongoing developments in the EU and Energy Community Contracting Parties, with a particular focus on the effects of changes in transmission tariffs on future natural gas flows;

- Participation in the work of the EU Gas Regional Initiative South–South East (GRI SSE), where the most important topics were diversification of natural gas supply sources and routes and decarbonization. The Work Plan for 2024–2025 was adopted, defining three new topics: the decarbonization package, analysis of LNG reception terminals and underground gas storage facilities in the region, and changes in natural gas quality in the region due to new sources.

Retail Electricity and Natural Gas Market and Customers Protection Working Group

- Preparation of a report on the functioning of retail electricity and natural gas markets in the Energy Community;
- In 2024, cooperation continued among the ECRB, CEER and MedReg working groups on retail markets and consumer protection through the organization of a joint workshop. The workshop addressed topics related to the current state of electricity and natural gas markets in the prevailing political context following the European elections and their implications for the Euro-Mediterranean region as a whole, including the need for changes in electricity consumption patterns in order to reduce the overall costs of the energy transition driven by renewable energy generation, as well as rules ensuring effective consumer protection and efficient communication with consumers for timely and clear information provision;
- Activities continued in 2024 on collecting the data necessary for the preparation of the Report on the Status of Implementation of Consumer Protection Rules stemming from the adapted Electricity Directive 2009/944 in the Contracting Parties; and
- Background materials were prepared for a report presenting the legislative framework on active customers established in the Energy Community Contracting Parties.

REMIT Working Group (EC Regulation on Energy Market Integrity and Transparency)

In 2019, under the auspices of the Energy Community Regulatory Board, a REMIT Working Group was established and it monitors the implementation of the adapted EC Regulation on Energy Market Integrity and Transparency 1227/2011 (hereafter: Regulation). The Group members include the representatives of national regulatory authorities of the Energy Community Contracting Parties. The aim of this Working Group is to give recommendations and monitor the implementation of the adapted Regulation “REMIT” which was adopted by the Ministerial Council Decision on November 29, 2018. The Energy Community Regulatory Board adopted the Procedural Act on the work of the REMIT Working Group on August 7, 2020 where a method of cooperation and coordination of activities of Contracting Parties regulatory authorities within REMIT Regulation implementation was regulated. This Procedural Act established: 1) basis for coordination of Contracting Parties national regulatory authorities in performing their tasks in line with REMIT Regulation; 2) cooperation within the Energy Community Regulatory Board (ECRB) and REMIT Working Group; 3) format used by regulations within the procedure of registration of market participants and registry keeping; 4) basis for activities taken by the ECRB in the REMIT Regulation implementation and 5) obligation to protect the confidentiality of data and information exchanged between national regulatory authorities.

In accordance with the ECRB Decision on the establishment of the REMIT Working Group and the Work Programme of this Working Group for 2024, the Working Group organized the implementation of this Programme through seven working subgroups:

- Subgroup “Regulatory guidance on REMIT” – Work continued on defining additional clarifications on the application of the adapted REMIT Regulation in the Energy Community, as well as on identifying relevant parts of the revised Guidelines on the application of the REMIT Regulation adopted by the Agency for the Cooperation of Energy Regulators (ACER), to be used, where possible, within the Energy Community. The subgroup also worked on formulating guidance for the purposes of full implementation of the adapted REMIT Regulation in the Contracting Parties.
- Subgroup “Cybersecurity and data protection” – Within this subgroup, the scope of implementation of cybersecurity and data protection standards in the Energy Community Contracting Parties was assessed, taking into account the standards established by ACER for data protection within the EU (data transmission and encryption protocols, access control, data classification and management, etc.). The objective of the report prepared by this subgroup is to identify shortcomings in the Energy Community and to provide recommendations for developing the missing solutions necessary for the proper implementation of REMIT 2.0, which is applied in the EU and whose transposition into the Energy Community is planned in the near future.
- Subgroup “Data Collection and Reporting Processes in Contracting Parties” – This subgroup collected information on the methods of data collection and the types of market data gathered by the regulatory authorities of the Contracting Parties, as well as identified best practices for the purposes of full

implementation of REMIT 2.0. The planned framework foresees regular collection and processing of data submitted by wholesale market participants to the regulatory authorities in the Contracting Parties.

- Subgroup “Implementation of REMIT and Inside Information Platform” – This subgroup monitored the implementation of the REMIT Regulation with regard to the obligation to establish and operate a dedicated platform for the publication of inside information, as well as regulatory changes in the Contracting Parties aimed at enabling the establishment and functioning of such a platform. The inside information platform is a centralized platform on which wholesale market participants are required to publish inside information in a timely and effective manner, as well as other messages that may affect the proper functioning of electricity and natural gas markets. During 2024, data on the implementation of REMIT in this area were collected and, accordingly, a Report on the implementation of the obligation to designate an Inside Information Platform was prepared. It was noted that existing regulations in the Republic of Serbia need to be amended to designate the competent entities responsible for operating this platform (system operators, market operators, or others), thereby fulfilling the obligation to enable market participants to monitor published inside and other information relevant to wholesale market transparency in a single place.
- Subgroup “REMIT Procedures in the Energy Community” – Within this subgroup, representatives of the Contracting Parties exchanged experiences related to the implementation of the adapted REMIT Regulation and regularly reported to the Energy Community Regulatory Board on activities undertaken during 2024 to ensure its full implementation. Representatives of some national regulatory authorities also reported on proceedings initiated by those authorities. The subgroup discussed possible coordination mechanisms among national regulatory authorities in cases of market abuse with cross-border effects, with the aim of assessing the need for amendments to the Procedural Act governing the work of the Energy Community Regulatory Board.
- Subgroup “Knowledge building of NRAs” – This subgroup aims to assess training needs in order to ensure adequate expert capacity for the full implementation of REMIT 2.0, including workshops and seminars with the participation of ACER and representatives of regulatory authorities from EU Member States.
- Subgroup “Coordination of investigations” – This subgroup examined cases of breaches of the REMIT Regulation and exchanged experiences on handling specific cases with cross-border effects on one or more neighboring electricity and natural gas markets. In this context, the Procedural Act governing the work of the Energy Community Regulatory Board provides the legal framework for action and cooperation among the regulatory authorities of the Contracting Parties, enabling interested Contracting Parties to jointly coordinate investigations where breaches of the REMIT Regulation have cross-border effects.

During 2024, a total of four meetings of the REMIT Working Group were held.

Energy Community Coordination Group for Cyber Security and Critical Infrastructure (CyberCG Coordination Group)

Energy Community Coordination Group for Cybersecurity and Critical Infrastructure has an aim to support and facilitate the cooperation between Energy Community Contracting Parties in the provision of safety during data exchange, i.e. in reaching a high level of security of information systems which serve for data exchange. In line with this, the main task of Cyber CG is to define “critical infrastructure” which represents information infrastructure which is most liable to cyber-attacks. In addition, a sum of most important data which are exchanged and which are of great importance for the energy sector will be defined within this coordination group. The aim is to protect these data.

Within Cyber CG, it is envisaged to work on the following activities:

- Identification of all energy entities which exchange data (transmission system operator, distribution system operator, suppliers, producers, national regulatory authorities, ministries in charge of energy...), identification of data and of critical infrastructure, etc.;
- Definition of strategic guidelines and giving instructions for data protection;
- Exchange of experience between Energy Community Contracting Parties and other interested parties related to data protection during the exchange of them;
- Provision of assistance to Energy Community Contracting Parties in capacity building in terms of provision of data safety and critical infrastructure protection etc.;

Each Energy Community Contracting Party has their representatives within Cyber CG. CyberCG members include: representatives of the ministries in charge of energy and national regulatory bodies of Contracting Parties, of the Energy Community Secretariat, European Commission, European Union Agency for Network and Information Security – ENISA), etc.

In 2024, there were no meetings of CyberCG Coordination Group.

Infrastructure

The representatives of the Energy Agency of the Republic of Serbia participate in the activities of working groups for Project of Common Interest for the Energy Community (PECI groups for electricity, natural gas and oil) which are established in line with provisions of the decision of the Energy Community Ministerial Council on the adoption of the EU Regulation on Trans-European Energy Networks¹⁸ (Regulation 347/2013 and 869/2022– the so-called TEN-E Regulation) which is aimed at drafting the list of priority gas and power infrastructure projects (the so-called PECI list). This list is drafted every second year. The procedure is executed by the Energy Community Secretariat. Following the adoption of the list by the Ministerial Council, these projects are qualified for benefits in terms of permit issuance, as well as for regulatory and financial incentives (to the extent to which TEN-E Regulation are transposed into local legislation). The members of the working groups for electricity, natural gas and oil are the representatives of the Energy Community Contracting Parties, representatives of ministries in charge of energy, representatives of the regulatory authorities of the Energy Community Contracting Parties and project promoters (electricity transmission system operators, natural gas transmission systems operators, natural gas storage operators, oil transport systems operators and representatives of smart grid projects).

During 2023, the procedure for preparing the PECI list was not carried out; accordingly, meetings of these working groups were held during 2024.

The result of the work of the PECI Electricity Working Group is the PECI list for 2024. The list includes five projects. All projects are high-voltage transmission lines to be located in the following countries: Bosnia and Herzegovina, Montenegro, Albania, Ukraine, and Moldova. No projects from the Republic of Serbia were nominated for the 2024 PECI list.

Due to amendments introduced by the new TEN-E Regulation, which defines new categories of energy infrastructure in the gas sector—where projects related to natural gas and oil no longer exist and have been replaced by hydrogen, electrolyser projects, and projects using low-carbon gases—there were no suitable infrastructure projects, and consequently no meetings of the PECI Gas Working Group were held.

7.2.5.2 Berlin Process – initiative “Western Balkans 6” (WB6)

Activities related to the energy sector regarding financing priority regional infrastructure projects through IPA multi-beneficiary program, as well as the implementation of reform measures (so-called “soft measures”) which stimulate the development of the regional electricity market represent a constituent part of the so-called Berlin Process, initiated on the Western Balkans Summit in August 2014. The most important reform targets of this initiative is the integration of daily (spot) electricity markets (the so-called “market coupling”), integration of balancing markets and maximization of benefits of the existing coordinated auction office (transmission capacities on interconnectors) of the southeastern Europe.

Within its jurisdiction, the Energy Agency of the Republic of Serbia contributes to the realization of the activities defined by this initiative such as: functional unbundling of the distribution system operators, certification of transmission system operators, cooperation with the Agency for Cooperation of Energy Regulators (ACER), coupling daily (spot) electricity markets (“market coupling”) with neighbouring markets, etc.

7.2.5.3 CESEC (Central and South Eastern Europe Gas Connectivity) Initiative

CESEC Initiative was launched by a Memorandum of Understanding between signatories from the Western Balkans, Black Sea region and the EU so as to coordinate support to cross-border trans-European gas infrastructure projects (which provide for the diversification of the natural gas supply in the region) and for the harmonisation of the relevant legislation. Since 2017, the field of operation of CESEC initiative was also extended to the field of electricity, energy efficiency and renewable energy sources.

The activities of CESEC are steered by CESEC High Level Group, HLG, which aims at the acceleration of the completion of the projects on the construction of interconnection lines which are facing difficulties in realization, identification and support to the construction of a limited number of infrastructure projects in central and southeastern Europe, identification of obstacles in the realization of these projects (e.g. obstacles of regulatory nature, permit issuance regime, technical and financial obstacles) as well as the realization of the action plan which includes project-specific technical, financial and regulatory measures in order to remove those obstacles.

Within its competence, the Energy Agency of the Republic of Serbia contributes to the realization of the activities defined within this initiative such as: certification of transmission system operator, operationalisation of mechanisms for capacity allocation on interconnection points and congestion management mechanisms, cooperation with the Agency for Cooperation of Energy Regulators (ACER), regional gas market integration, etc.

¹⁸ Decision No. D/2023/02/MC-EnC of 14/12/2023

7.2.5.4 Participation in energy regulators' associations

The Energy Agency of the Republic of Serbia is a member of the Council of European Energy Regulators – CEER – a body with a mission to contribute to the establishment of a unique, competitive and efficient energy market in the European Union via the cooperation between independent energy regulators. The CEER General Assembly accepted the Energy Agency of the Republic of Serbia as an Observer within this body on the session held on December 12, 2018 in Brussels.

The Energy Agency of the Republic of Serbia is a full member of ERRA (Energy Regulators Regional Association), an expert association of regulators aiming at the improvement of cooperation, exchange of experience and capacity building in member states. ERRA links the regulators from Southeast and East Europe, from former USSR, NARUC – USA regulators association, as well as the regulators of certain countries in Asia and Africa. So as to build capacity and exchange experience with other national regulatory bodies in several fields of regulation theory and practice (price regulation, competition and energy market, licensing, etc.) and to have insight into options for their implementation in Serbia. In 2023, the representatives of the Energy Agency of the Republic of Serbia participated in the activities of ERRA Chairmen Committee, Natural Gas Market and Economic Regulation Committee, Electricity Market and Economic Regulation Committee and Renewable Energy Committee.

The Energy Agency of the Republic of Serbia is a member and one of founders of the Permanent Advisory Forum of National Regulatory Authorities of Balkans Countries (Advisory BAF Forum). The Advisory BAF Forum which includes the Energy and Water Regulatory Commission of the Republic of Bulgaria (EWRC), the Regulatory Authority for Energy of the Republic of Greece (RAE), the Energy Agency of the Republic of Serbia (AERS), the Energy Regulatory Commission of Macedonia (ERC), the Energy Regulatory Agency of Montenegro (REGAGEN), the Albanian Energy Regulatory Authority (ERE) and the Energy Regulatory Commission of the Republic of Srpska (RERS) will via the Board of Regulators or via ad hoc groups, within their jurisdiction, provide a framework for discussions, exchange of experience, and, when possible, for the drafting of common positions and recommendations on regulatory issues in the field of electricity, natural gas, water and waste water markets in the region. In 2024, the electricity working group within BAF was not active.

In 2024, the BAF Working Group for natural gas market liberalization was not active.

Upon the initiative of the Italian regulatory authority ARERA, on December 16, 2022, the Balkan Energy School (BES) was formally established under their leadership. The members of the School are regulatory authorities from the Western Balkans. The Energy Agency of the Republic of Serbia took the status of an observer and actively participated as an observer in 2024, attending seminars and workshops organized as part of the "Balkan Energy School" with its representatives at no cost.

7.2.5.5 European integration

The representatives of the Energy Agency of the Republic of Serbia participated in the work of the Board for the implementation of the Stabilisation and Association Agreement – sub board for transport, energy, environment protection, climate changes and regional development where they presented the level of implementation of commitments within its competence, related to regulatory issues in the energy sector and regional integration.

The representatives of the Energy Agency of the Republic of Serbia also participated within the subgroup for energy of the Expert group of the coordination body for the preparation and negotiations on Serbia's accession to the European Union (SG 15 – Energy).

8. AGENCY'S FINANCIAL REPORT

Financial operations of the Agency in 2024 were in line with the 2023 Financial Plan which defined total revenues and expenditures of the Agency as well as the elements for comprehensive insight into the income and employment policy. In October 2023, in line with the obligations arising from the Energy Law, the Agency submitted its 2024 Financial Plan to the National Assembly for approval and it was approved and adopted in July 2024 ("Official Gazette of RS", No. 64/24 of 31/072024).

This report illustrates planned and actual utilisation of funds per each purpose from the revenue which, in line with the Energy Law and Financial Plan arises from: the costs for the license issuance, part of use-of-system charge – regulatory fee and financial revenues and other revenues.

Table 8-1: Total Agency's revenues in 2024

No.	Revenues	RSD		
		Realised 2023	Plan 2024	Realised 2024
1	Revenue from licenses	23.454.832	24.469.252	21.615.878
2	Revenue from regulatory fee	254.467.383	289.258.249	272.464.679
3	Transferred extra revenue from last year	0	2.648.051	0
4	Revenue from grants and reimbursements	789.860	1.500.000	2.410.150
5	Financial revenues and other revenues	2.281.241	2.767.000	2.906.306
6	Revenues based on correction of errors from previous years	0	0	307.254
	TOTAL REVENUE	280.993.316	320.642.552	299.704.266

NOTES ON REVENUES:

In 2024, total revenue amounted to RSD 299,704 reflecting a 7% increase compared to the revenue in 2023.

In 2024, **the revenue from licence fee** was calculated in line with the Decision on Level of Costs for Energy Licence Issuance ("Official Gazette of RS", No. 42/22 which was in force as of April 9, 2022) and with the Decision on Harmonisation of Level of Costs for Energy Licence Issuance ("Official Gazette of RS", No. 29/24 which was applicable as of April 3, 2024) and the Decision on the Level of Costs for Energy Licence Issuance ("Official Gazette of RS" No. 42/22 which was applicable as of 09/04/2022). These Decisions set the level of fee for licence issuance for certain energy activities as well as the level of fee for amendments to the decision on licencing.

The **fee covering costs of licence issuance** is set upon the moment an application is filed by an energy entity and it covers the whole period of licence validity of 10 years, i.e. 30 years. The fee is charged in advance or at the moment of the application submission.

In accordance with this, **revenue from fees for issuing new licenses** amounted to RSD 18,365,746 and for amending existing decisions for 2024 totaled RSD 3,250,131 making a combined total of RSD 21,615,878. Between January 1 and December 31, 2024, 72 licenses were issued for various energy activities, and 39 amendments were made to existing licenses based on submitted requests and fulfilled conditions.

In 2024, the **revenue from licencing fees** decreased by 8% compared to 2023 and exceeded the planned amount by 12%. In the total revenue structure, licencing fees account for 7.21%.

Revenue from **regulatory fees**, which includes the portion of the tariff for access to and use of the electricity transmission system, natural gas transport, and oil transport via pipelines, amounted to RSD 272,464,679 in 2024, representing 90.91% of the Agency's total revenue (compared to 91.56% in 2023). It is calculated quarterly in line with the Methodology and defined procedures and it depends on the amount of maximum allowed revenue of energy entities and the date when approved energy entities' decisions on transmission and transport fees are enforced.

The **calculated and realized amounts** of the regulatory fee in 2024 are in line with the estimated level of realization for 2024 and, compared to the realized amount in 2023, record an increase of 7%. Given their share in the structure of total revenues, revenues from the regulatory fee provide the Agency with security and stability in its operations.

Revenues from donations relate to a state donation of fixed assets (software, a specified integrated AERS information system) received through the project "Support to the Energy Agency of the Republic of Serbia in the collection and analysis of data on the energy market and network infrastructure" (IPA 2018). Namely, on the date of handover of the software, 30 October 2024, the Agency records the software in its fixed asset registers as non-current assets, begins calculating depreciation, and is obliged to ensure condition monitoring and technical maintenance of the software in question. The total value of the donation, amounting to approximately EUR 981,800, is not recognized

immediately as revenue, but is proportionally transferred to income through depreciation over the useful life of the asset. In this specific case, depreciation is calculated for two months and amounts to RSD 1,934,840. The amount of depreciation recorded each year is recognized as donation income, thereby matching expenses and revenues.

Revenues from reimbursements are generated in the amount of documented costs of official business trips abroad (accommodation and transport costs for participants in certain meetings) and are reimbursed by the Energy Community Secretariat in Vienna. These revenues were realized in the amount of RSD 475,310 and represent 47% of realization compared to the planned amount. The reason for the decrease in reimbursed costs compared to 2023 is the participation of employees in a smaller number of webinars, as well as partial reimbursement in 2025 for costs incurred at the end of 2024.

Financial revenues in the amount of RSD 2,258,607 consist of income from interest earned on sight deposits held with the commercial bank BANCA INTESA a.d., which the bank calculates and credits to the dinar business account, as well as positive foreign exchange differences applied to balances on the foreign currency account.

Other non-operating and extraordinary revenues were realized in the total amount of RSD 649,292.

NOTE ON EXPENDITURE:

In 2024, total expenditures amounted to RSD 283,772,003, indicating an increase of 15% compared to expenditure levels in 2023. The 11% lower realization compared to the expected expenditure amounts for 2024 primarily resulted from delays in the adoption of the Financial Plan by the National Assembly, which consequently affected the planned dynamics of the implementation of numerous procurements.

Structurally, the realization of expenditures in 2024 took place in accordance with the amounts outlined below:

Expenditures for materials, fuel and energy in 2024 were lower by RSD 2,014,009, i.e. by 31% compared to planned amounts. From an analytical perspective, costs of vehicle fuel and electricity were lower than planned by RSD 1,173,329, while costs of office supplies, utilities and other materials were lower by RSD 840,679.

Costs of gross salaries, employer contributions, contracts for temporary and occasional work and other contracts, other personal expenditures and allowances were lower than the total planned amounts for these categories by 6%, i.e. by a total of RSD 13,679,598, as detailed below:

– **Gross salary expenditures**, amounting to 95% of the planned level, were lower by RSD 9,465,518, while employer contributions were lower by RSD 1,564,644 compared to the planned amounts. The main reason for the larger deviation from the planned salary expenditures was the fact that the recruitment of three new employees, envisaged for the second half of the year under the recruitment plan, was not realized.

– **Remuneration** under other contracts was almost fully in line with the planned amount, deviating by only RSD 17,866. At the end of the year, a supplementary work contract was concluded and an Internal Auditor was engaged at the Agency, in accordance with the existing systematized position.

– Other **personal expenditures** and allowances accounted for 67% of the planned realization and were lower by RSD 2,667,303.

Within the category of other personal expenditures and employee allowances (domestic and foreign business travel costs, employee transportation, employee assistance and other benefits, severance payments and jubilee awards), the largest deviations from planned amounts were recorded for employee assistance costs, as well as lower air travel and daily allowance costs related to official business trips abroad.

One of the most significant challenges the Agency has been facing for several years is the shortage of qualified staff (a total of 15 employees have left the Agency since its establishment, representing a turnover of 34% of the total number of employees in professional services) and the difficulty in recruiting new and necessary staff. This phenomenon is undoubtedly the result of many years of significantly slower salary growth at the Agency compared to the public and private sectors in the energy field, which, under conditions of restricted recruitment, also affects the pace of execution of the tasks entrusted to the Agency.

Table 8-2: Total Agency expenditure in 2024

No.	EXPENDITURE	RSD		
		Realised 2023	Planned 2024	Realised 2024
1	Material, fuel and energy costs	4.201.737	6.580.181	4.566.172
1.1	- material (operating cost)	1.806.278	2.899.391	2.058.711
1.2	- fuel and energy	2.395.459	3.680.791	2.507.462
2	Salaries, allowances and other expenditure	197.161.089	241.491.541	227.811.943
2.1	- salaries and allowances (gross)	162.624.592	201.412.634	191.947.116
2.2	- levies paid by employer	24.202.227	30.174.244	28.609.600
2.3	- fees in line with other contracts	1.500.445	1.900.985	1.918.851
2.4	- other personal expenditure and fees	8.833.825	8.003.679	5.336.376
3	Production services	28.604.716	47.140.041	31.508.688
3.1	- transport	1.854.228	2.832.904	2.026.922
3.2	- maintenance	2.475.361	17.106.000	3.776.147
3.3	- lease	20.244.366	22.515.494	21.375.465
3.4	- marketing and advertising material	384.936	420.321	411.493
3.5	- other services	3.645.825	4.265.322	3.918.661
4	Depreciation and reserves	8.128.503	10.004.564	9.386.009
5	Non-material expenditure	8.226.029	15.416.223	10.486.427
5.1	- non-production services	3.402.609	8.241.496	5.773.636
5.2	- costs of representation	536.186	684.793	615.227
5.3	- insurance premium	2.309.494	4.000.000	1.872.140
5.4	- payment operations	263.074	343.806	324.862
5.5	- membership	887.098	907.200	923.936
5.6	- taxes and fees	823.450	1.165.929	936.372
5.7	- other non-material expenditure	4.117	100.000	40.255
	OPERATIONAL EXPENDITURE	246.322.074	320.632.552	283.759.239
6	Financial and other expenditure, reserves for unplanned costs	53.191	10.000	12.764
	TOTAL EXPENDITURE	246.375.265	320.642.552	283.772.003
7	Financial result – extra revenues	34.618.051	0	15.932.263

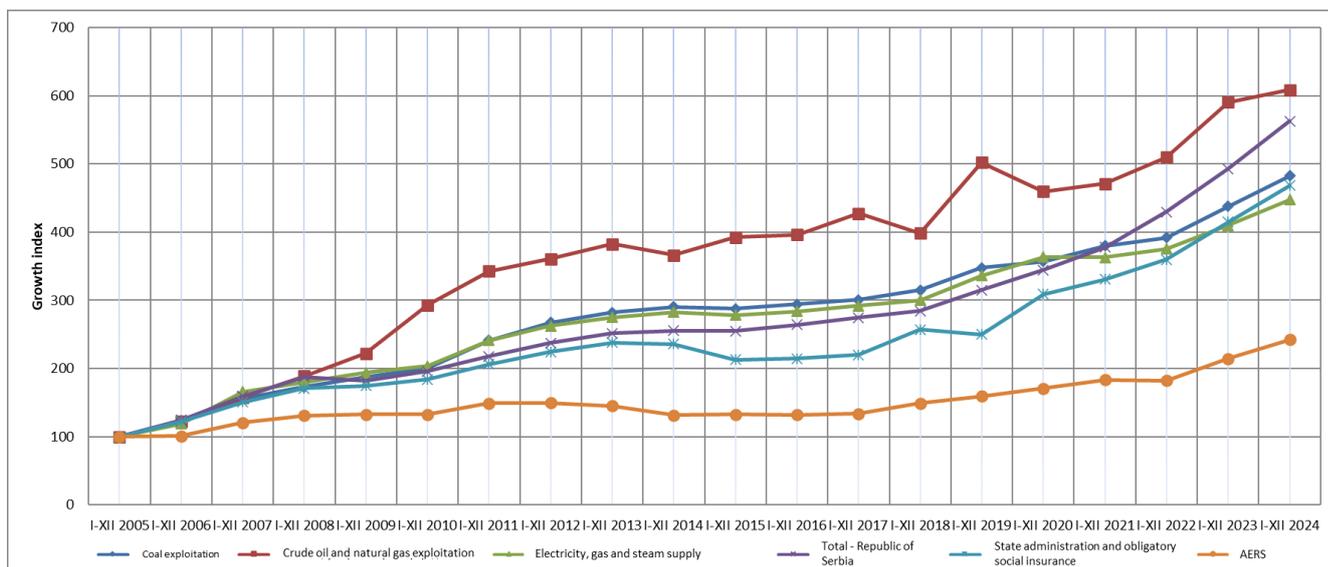


Figure 8-1: Base index of average annual net salary trend 2005.=100

At the end of 2024, the Agency has a total of 49 employees, including 45 permanent staff members, among whom are the Council members. The tables below provide a detailed overview of the qualification and age structure.

Table 8-3: Qualification structure of employees

Professional qualification	31/12/2023		Plan 2024		31/12/2024	
	No.	Share in %	No.	Share in %	No.	Share in %
PhD (A Doctor of Philosophy)	4	8,3	4	7,8	4	8,2
Master	1	2,1	1	2	1	2
BSc/BA (Bachelor of Science/Arts)	38	79,2	41	80,4	39	79,6
College degree	0	0	0	0	0	0
Secondary school degree	5	10,4	4	7,8	5	10,2
Primary school degree	0	0	1	2	0	0
Total	49	100	51	100	49	100

In addition to a highly qualified workforce, the Agency is also characterized by a higher average age of employees, with 71.4% of staff having over 20 years of work experience as of December 31, 2024. Considering the nature of the highly specialized work performed by the Agency, as well as the requirement to hire personnel with prior experience, this age structure is somewhat expected. However, the need for “rejuvenation” of the workforce in the coming period is emphasized in order to ensure the continuity of the Agency’s successful operations.

Table 8-4: Structure of employees in terms of length of service

Length of service	31/12/2023		Plan 2024		31/12/2024	
	No.	Share in %	No.	Share in %	No.	Share in %
up to 5 yrs	3	6,3	1	2	2	4,1
from 6 - 10 yrs	4	8,3	8	15,7	4	8,2
from 11 - 15 yrs	0	0	2	3,9	0	0
from 16 - 20 yrs	8	16,7	8	15,7	8	16,3
from 21 - 25 yrs	10	20,8	11	21,6	8	16,3
from 26 - 30 yrs	11	22,9	10	19,6	14	28,6
from 31 - 35 yrs	5	10,4	3	5,9	7	14,3

> 35 yrs	7	14,6	8	15,7	6	12,2
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The costs of service production were 33% lower than planned for 2024, amounting to 15,631,353 RSD in absolute terms. Analytically, this decrease in costs was largely influenced by maintenance service costs, which were 78% below the planned amount, or 13,329,852 RSD in absolute terms. Within the maintenance cost structure, the lower realized amount of 1,058,385 RSD relates to the maintenance of office premises due to the aforementioned delay in concluding the contract for providing this service, which was a consequence of the delay in adopting the Financial Plan. The largest deviation from the planned amount is related to the absence of the planned maintenance service for the Agency's Information System, amounting to 11,564,000 RSD. The condition for the realized donation of the Agency's Information System (IPA 2018) was to ensure monitoring and technical maintenance of the software. Since the project was implemented with a delay (the handover agreement was concluded at the end of the year), the planned maintenance service, amounting to 15% of the software value annually, was postponed to the next year, 2025.

Additionally, **transport service costs** were 28% lower than planned, totaling 805,982 RSD. Other services, including utilities, printing services, occupational safety services, advertisement publications, and others, were collectively 8% lower than planned, amounting to 346,660 RSD.

Depreciation and provisions were calculated according to the relevant accounting policy and applicable rates and were 6% lower than planned, or 618,555 RSD in absolute terms.

Intangible costs were lower than planned for the entire cost group by 4,929,797 RSD, or 32%. Examined by individual costs within this group, the realization is as follows:

Non-productive services were 30% lower than planned, or 2,440,860 RSD. The largest deviation within this cost category (which includes audit costs, consulting services, seminars and fees, professional training and literature, legal services, other non-productive services, costs of leasing financial-accounting software, and Microsoft 365) occurred in legal services, which were 70% lower than planned, amounting to 1,052,340 RSD.

Representation expenses deviated from the planned amount by 10%, being lower by 69,566 RSD in absolute terms.

Insurance premium expenses were lower than the planned amounts by 2,127,860 dinars, or 53% in relative terms, since equipment insurance, as well as mandatory collective and voluntary health insurance for employees, were secured under more favorable conditions than expected and planned.

Taxes and fees, taken as a whole, were 20% lower than the planned amount, or 229,556 dinars. This is primarily due to the difference between the planned and actual costs of contributions for the employment of persons with disabilities, which had been planned at a higher amount in anticipation of an increase in the number of employees at the Agency.

Operational result:

On December 31, 2024, there was an extra revenue in comparison to expenditure of RSD 15,932,263 out of which 50% of realised revenue amounting to RSD 7,966,131 is transferred to the financial plan for next year.

In order to provide continuous and reliable operation of the Agency, the accumulated amount of realized extra revenue from previous years as well as from 2024 represent an adequate reserve in operationally available funds and it is the only for the balance item "Capital". Thereby, certain security in the operation of the Agency is provided while in the given legal framework there are no financial sources that could be dependable for the operations of the Agency.

Investments in equipment and software. The Agency does not own real estate while the movables include: computer equipment and software, office furniture, technical equipment, other equipment and low-scale inventory. The EAR concluded a contract on their procurement.

The Agency procured equipment from its own funds in the period 2007 – 2024 as indicated in Table 8-5. Procurements were always realised in line with the procurement plan and the Law on Public Procurement. This was done mainly so as to replace a part of fixed assets which were written down, first of all computer equipment.

In 2024, the value of the Agency's assets increased significantly as a result of the project "Support to the Energy Agency of the Republic of Serbia in the Collection and Analysis of Energy Market and Network Infrastructure Data" (IPA 2018), when software—the integrated AERS Information System—was donated to the Agency, with a dinar equivalent value of 116,089,297 RSD.

Table 8-5: Purchase of different equipment and software in the Agency

Procurement	RSD									
	2007-2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Cars	13.418	0	0	2.694	4.535	0	0	0	0	4.169
Computer equipment, software, network	44.175	3.637	4.149	2.890	6.662	4.726	4.670	4.912	7.471	116.749



Office furniture and different equipment	6.460	887	321	585	462	840	843	99	146	366
Telephone devices, telephone switchboard, access control	3.984	400	302	207	454	531	291	599	1.366	712
Video surveillance, network	1.060	0	0	0	0	0	0	0	0	0
Total	13.418	0	0	2.694	4.535	0	0	0	0	4.169

As of December 31, 2024, the current value of tangible and intangible assets amounts to 147,503,287 dinars. At the end of the financial year, it was determined that out of 966 items of fixed assets in use, 56.21% of the assets had a value of "0" (543 items), while 43.78% of the assets had a value greater than "0" (423 items). Consequently, a review of the useful life of fixed assets, including real estate, plants, and equipment, was undertaken. The report on the reassessment of the useful life of assets involved an analysis of the period during which the assets would remain useful for performing business activities, as well as adjustments to the estimates in accordance with changes that could affect their operational lifespan or functionality. This analysis and reassessment allowed the financial statements to accurately reflect the real value and usability of the assets. Furthermore, the noted value structure of the assets indicates a high degree of depreciation and amortization, highlighting the need for ongoing monitoring of equipment usability and the necessity for its renewal.

In line with the legal obligation, in line with the Energy Law, the audit of the 2024 financial report by an authorised auditor was completed. In the opinion of the auditor, the financial report represents the financial positions of the Energy Agency on December 31, 2024 in a true and fair manner, for all materially-relevant aspects as their financial success for the year completed on that date in line with accounting regulations applicable in the Republic of Serbia.

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Abbreviations and foreign phrases

ACER	Agency for the Cooperation of Energy Regulators
APKM	Autonomous Province of Kosovo and Metohija
Benchmarking	Comparative analysis of similar (indicators, companies, activities, etc.)
CEER	Council of European Energy Regulators
BiH	Bosnia and Herzegovina
DS	Distribution system
EnC	Energy Community
ECRB	EnC Regulatory Board
HHI	Herfindahl-Hirschman Index – indicator of market concentration level
ITC Agreement	Multi-year Pan-European agreement between transmission system operators on compensation of costs for the utilisation of neighbouring transmission networks
SEE	South-eastern Europe
EMS JSC	<i>Elektromreža Srbije</i> , Joint Stock Company
EPS JSC (PE EPS)	Joint Stock Company Elektroprivreda Srbije (Public Enterprise <i>Elektroprivreda Srbije</i> (<i>Electric Power Industry of Serbia</i>))
mtoe	Million tons of equivalent oil
NTC	Net Transfer Capacities
REMIT	Regulation on wholesale energy market integrity and transparency, No. 1227/2011, adopted by the European Parliament and the European Council of Ministers
MRE	Ministry of Mining and Energy
NIS	Company for Exploration, Production, Processing, Distribution and Trade in Oil, Oil Derivatives and for Exploration and Production of Natural Gas <i>Naftna industrija Srbije</i> (Petroleum Industry of Serbia), JSC
RS	Republic of Serbia
UNMIK	United Nations Interim Administration Mission in Kosovo, established by the Security Council by Resolution 1244 (1999)

Conversion factors for energy equivalents

	kJ	kcal	kWh	kg oe*
1 kJ	1	0.2388	0.000278	0.000024
1 kcal	4.1868	1	0.001163	0.0001
1 kWh	3,600	860	1	0.086
1 kg oe	41,868	10,000	11.63	1

* kilograms of equivalent oil



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