



**Energy and Water Regulatory Commission (EWRC)
Bulgaria**

**Annual Report
to the European Commission**

July 2022

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LIST OF ABBREVIATIONS

ACER	Agency for the Cooperation of Energy Regulators
AAS of EA	Act on the Amendment and Supplement of the Energy Act
BETP AD	Bulgarian Energy Trading Platform AD
BGH EAD	Balkan Gas Hub EAD
CCP	Commission for Consumer Protection
CCR SEE	Capacity Calculation Region South East Europe
CDM	Central Dispatching Management
CDP	Commercial Dispatching Platform
CEER	Council of European Energy Regulators
CPC	Competition Protection Commission
CS	Compressor Station
DAM	Day-Ahead Market
EA	Energy Act
EMR	Electricity Market Rules
ESO EAD	Electricity System Operator EAD
ESSF	Electricity System Security Fund
EPS	Electric power system
ERSA	Energy from Renewable Sources Act
EWRC, Regulator	Energy and Water Regulatory Commission
GRP	Gas Release Program
GTN	Gas Transmission Network
GTTN	Gas Transit Transmission Network
HECG	High-efficient cogeneration
IBEX EAD	Independent Bulgarian Energy Exchange EAD
IDM	Intraday Market
ITO	Independent Transmission Operator
MRC	Multi Regional Coupling
NGMBR	Natural Gas Market Balancing Rules
NGTN	National Gas Transmission Network
NGTR	Natural Gas Trading Rules
OEPR	Ordinance №1/2013 on electricity price regulation
OLAES	Ordinance №3/2013 on licensing the activities in energy sector
ONGPR	Ordinance №2/2013 on natural gas price regulation
PCI	Project of common interest
RES	Renewable energy sources
RMESOCP	Rules of maintaining electricity supply offers comparison platform
PEOR	Power Exchange Operational Rules
SEEGAS	South-Eastern and Eastern European gas market
SDAC	Single Day Ahead Coupling
SLP	Standardized Load Profiles
SLR	Supplier of Last Resort
TSO	Transmission System Operator
VTP	Virtual trading point
WPP	Wind power plant

1. FOREWORD

In 2021, the activity of the Energy and Water Regulatory Commission (EWRC, the Regulator) was focused on electricity market liberalization, power and gas exchange trading development, achieving regional connectivity of electricity and gas markets and active participation of the country in the European energy market.

In the electricity sector the Regulator concentrated its efforts in mitigating the effects of the drastic spike in free market electricity prices that began in the second half of 2021. Amendments were adopted to the Methodology on determining the electricity price of the supplier of last resort, and to the Electricity Trading Rules with the aim to achieve fairer costs distribution for regulating the electricity system among all trading participants. EWRC also adopted decisions to implement the European electricity market regulations and network codes to ensure supply, create a competitive internal electricity market and reduce carbon emissions.

In support of the natural gas market liberalization and integration, the Regulator has adopted a number of decisions which have increased competitiveness of the Bulgarian gas market and guaranteed unimpeded access for all participants. Priorities in the sector were ensuring energy supplies, diversification of natural gas sources and routes, achieving a liquid and competitive natural gas market, development of the gas transmission infrastructure, connecting the Bulgarian market with the markets of the countries in the region. In 2021, apart from the Russian Federation's import, natural gas supplies from Azerbaijan have been realized, which is a step towards diversification of natural gas supplies and promotion of competition. Traded volumes in the organised exchange market have increased, which is an evidence of the natural gas trading development. It should also be noted that during the year there was also a drastic increase in the natural gas price, not only in Bulgaria, but also throughout Europe. The construction of the Bulgaria-Greece IGB gas interconnection has reached its final stage and it would ensure the real diversification of natural gas suppliers.

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Chairman
Energy and Water Regulatory Commission

2. MAIN DEVELOPMENTS IN THE GAS AND ELECTRICITY MARKETS

In 2021 the situation in the electricity sector marked the beginning of a very sharp, even dramatic transformation of the electricity and gas markets worldwide. Energy carriers values, as well as carbon emissions, reached levels for which neither industry nor household consumers were ready. The record growth in the prices of energy resources, which has continued into the beginning of 2022, has become a challenge for both the Bulgarian energy industry and the national economy. This has put on the agenda the need for new regulatory approaches and measures to support the accelerated transformation of the current market model, in order to respond adequately to the new realities.

In 2021 the Regulator's efforts in the electricity and thermal energy sector were aimed at mitigating the consequences of the drastic surge in electricity prices on the free market that began in the second half of 2021.

In its pricing decisions, EWRC continued to apply a balanced approach and did not allow drastic price changes. In 2021 the weighted average increase in total electricity prices for residential customers on the regulated market amounted to 4.40%.

Heating energy prices with average 16.23% increase were approved, compared to 2020-2021 season, despite a serious increase in natural gas prices and greenhouse gas emission allowances.

In order to avoid financial losses for balancing energy suppliers due to their involvement in regulation, EWRC has adopted a new approach in determining the threshold price for transactions in the balancing energy market for downward regulation. This energy price is tied to both the achieved hourly electricity prices on the day-ahead market and the regulated price of producers participating in the public supplier mix.

The developments in the international situation as a result of the military conflict between the Russian Federation and Ukraine have led to extreme shocks and instability in the energy markets. This is expected to lead to the adaptation of the European Union's long-term plans for a smooth transition to the use of emission-free energy sources. An additional obstacle to the permanent calming of the markets is the uncertainty regarding the duration of the military actions and the scale of the economic and geopolitical consequences for Europe, including for Bulgaria. In its previous electricity sector practice, EWRC has always worked to build incentives for the complete liberalization of the electricity market, but the observed processes require EWRC's focus to be changed in 2022. A priority for the Regulator will be actions and measures related to maintaining stability and predictability in terms of market functioning and ensuring affordable prices for consumers. Given the growing requirements regarding the introduction of environmental protection measures, in 2022 in the thermal power sector, efforts will be aimed at creating a regulatory framework for the technological renewal of district heating companies with the aim of reducing greenhouse gas emissions and neutralizing the effects of rising allowances and fuel prices.

This can be achieved by installing photovoltaic plants in district heating companies to cover their own electricity needs, using geothermal energy for heating through local plants and other measures.

In the field of controlling activities, in 2022 EWRC will continue to approve the general terms and conditions of energy companies with the aim of bringing them into line with the changes in the regulatory framework. In accordance with the established practice, the Regulator will carry out checks on each received signal of license obligations violation. Regarding complaints handling and work with consumers, EWRC undertakes strict control measures to ensure compliance with the

statutory deadlines for consideration and resolution of disputes and to improve communication between customers and suppliers.

In the natural gas sector in 2021 EWRC's activities aimed at creating prerequisites for achieving a liquid and competitive natural gas market and connecting the Bulgarian market with the natural gas markets of the member states in the region and in Europe. EWRC granted licenses to two organized natural gas exchange markets - Balkan Gas Hub EAD and Bulgarian Energy Trading Platform AD. The exchanges trading participants got access to services and products under equal conditions and guaranteeing the anonymity of transactions. In addition, during the reported year, EWRC licensed 44 natural gas traders, including leading European companies. Thus, with an increase in the number of market participants, the liquidity and competition in the natural gas market also has enhanced. The Regulator issued a license to ICGB AD for the activity “natural gas transmission” through IGB gas pipeline, and with its upcoming commissioning, it is expected that a real diversification of the gas market sources in the Republic of Bulgaria will be ensured.

In the long run, important goals for the achievement of which EWRC has a significant role, are reducing the country's dependence on a single natural gas source by diversifying supply sources, developing the national infrastructure and connecting it with the gas transmission systems of neighboring countries. With its regulatory activity, EWRC will continue to provide support for increasing liquidity, market liberalization and lowering natural gas prices. The Regulator's activity should be aimed at refining the formation rules on natural gas prices, subject to regulation, with the aim of reducing prices for household consumers and stimulating residential gasification. The upcoming certification of ICGB AD as an independent natural gas transmission network operator will create regulatory conditions for the operation of the IGB gas pipeline, which will provide an opportunity to diversify natural gas supply sources. All this will lead to greater market liberalization, to conclusion of more transactions at freely negotiated prices and strengthening competition between suppliers. In the long run, with a favorable international and regional environment, these factors shall be a key prerequisite for reducing natural gas prices in the Republic of Bulgaria, both for household customers and industry.

In 2018, an amendment to the Energy Act (EA) was adopted by creating Chapter Seven A Implementation Control of Regulation (EU) № 1227/2011 of the European Parliament and of the Council of 25 October 2011 on the integrity and transparency of the wholesale energy market (SG, issue 38 of 2018, in force a of 8 May 2018). In accordance with the amendments, EWRC has the power to investigate violations under Art.3 and Art. 5 of Regulation (EU) No. 1227/2011 and to impose sanctions and fines for established violations.

In accordance with Art.13 of Regulation (EU) № 1227/2011 of the European Parliament and of the Council of 25 October 2011 on the integrity and transparency of the wholesale energy market (Regulation (EU) № 1227/2011, the Regulation) each Member State shall ensure that its national regulatory authorities have the investigatory and enforcement powers necessary for the exercise of the prohibitions set out in Articles 3 and 5 and the obligation set out in Article 4. In accordance with Art.18 of Regulation (EU) № 1227/2011 the regulatory authority is to apply penalties applicable to infringements of the Regulation. The penalties provided for must be effective, dissuasive and proportionate, reflecting the nature, duration and seriousness of the infringement, the damage caused to consumers and the potential gains from trading on the basis of inside information and market manipulation. In connection with the specified obligations regarding implementation of Regulation (EU) № 1227/2011 an amendment of EA was adopted, SG, issue 38 of 2018, in force a of 8 May 2018, which provides for the specific amount of the sanction and the fine to be determined by the Energy and Water Regulation Commission (EWRC) in accordance with the methodology adopted by it, published on its website (art. 224d of the EA).

At EWRC sitting session, with a decision under protocol No.4R of 8 April 2021 under item 1, a Methodology for determining the sanctions and fines imposed under Art. 224 of EA was adopted, which entered into force as of the date of its promulgation in State Gazette (published, SG No. 31 of 14.04.2021). In the same SG issue, Rules was adopted for access to files related to the establishment of violations under Art. 3 and 5 of Regulation (EU) No. 1227/2011, use and storage of documents representing production, commercial or other legally protected secrets. The Rules were adopted at EWRC sitting session, with a decision under protocol No.4R of 8 April 2021 under item 2, which entered into force as of the date of its promulgation.

With the adoption of the abovementioned two by-laws, the entire regulatory complex required for EWRC to be able to carry out monitoring and control of the implementation of Regulation (EU) No. 1227/2011, along with the Act on Amendments and Supplements to EA (promulgated SG No. 38 of 2018) and the Ordinance on Amendments and Supplements to Ordinance No. 3 of 21.03.2013 on Licensing the activities in the energy sector (SG No. 111 of 31.12.2020, in force as of 31.12.2020).

2.1. Evaluation of the market development and regulation

In 2021 EWRC adopted the following by-laws, rules and guidelines:

Ordinance amending and supplementing Ordinance No. 3 of 21 March 2013 on licensing the activities in the energy sector, promulgated, SG No. 65 of 6 Aug 2021, in force as of 6 Aug 2021 (OAS of OLAES). It was adopted in relation to the need to bring Ordinance No. 3 of 21 March 2013 on licensing the activities in the energy sector (OLAES) into compliance with the requirements of the Electronic Government Act (EAG) and its implementing regulations.

The adoption of OAS of OLAES aims at bringing the act in line with the requirements of Art.2, para.1 of EAG. In this regard, it is no longer required for the entities submitting applications for license issuing, supplementing, terminating and term extension, as well as transactions authorization provided for in OLAES, to indicate their management headquarters and address, since these data are public and available in The commercial register, which is why they should be obtained ex officio by the EWRC administration.

As a result of the amendments made, the Ordinance has been brought into line with the requirements of Art.2, para.1 of EAG, creating conditions and prerequisites for reducing administrative burden by reducing the volume of required documents in the administrative proceedings that develop before EWRC.

Rules amending and supplementing the Electricity trading rules, promulgated, SG No. 110 of 2021, in force as of 24 Dec 2021 (RAS of ETR)

With the amendments to EA and ERSAs realized by the Act on Amendments and Supplements to the EA, promulgated in SG No. 57 of 26.06.2020 and the Act on Amendments and Supplements to the EA, promulgated in SG No. 9 of 02.02.2021, as well as in view of the need to clarify particular provisions in the Electric Trading Rules (ETR), it was necessary to adopt Rules amending and supplementing the Electricity trading rules, promulgated, SG No. 110 of 2021, in force as of 24 Dec 2021 (RAS of ETR).

With AAS of EA, prom.SG, No.57 of 2020, it is stipulated that as of 1 Oct 2020, end suppliers supply electricity only to household end customers connected at low voltage level. This legal change necessitated an amendment to the part of the Rules regulating the relations between the end supplier and end customers related to the electricity supply, incl. those between the end customer and the supplier of last resort. With the amendments and supplements to EA (promulgated

SG No. 9 of 02.02.2021), the electricity market liberalization next stage was initiated and was made another change – generators of electricity produced from renewable sources (RE) and from highly efficient combined heat and power generation (CHP) with a total installed capacity of 500 kW to 1 MW, shall be obliged to sell the entire amount of electricity produced to the various organized exchange market segments. The above was reflected in ETR provisions regulating the structure and composition of the balancing groups, the possibility of the balancing groups' unification, as well as the activity of the balancing groups' coordinators.

On the other hand, the greater consolidation of the balancing groups by bringing them together with a common financial settlement leads to a quantitative netting of the imbalances in the groups without actually reducing regulation costs. In this regard, according to ITO data, as a result of the delegation of imbalances from one coordinator to another, the shortage price increases during the winter months by about 15%. Also, during the administration of the group consolidation process, in which all balancing group coordinators have gradually become involved, controversial and unresolved issues related to the imbalances reallocation contracts in the standard balancing groups have been identified. The disputed situations necessitated the amendment of the relevant ETR provisions, expressed in the removal in certain cases of the possibility to unite balancing groups through a common financial settlement.

In the next place, AAS of EA, pron. SG, no.9 of 2021, provided for the cancellation of transactions for the purchase of cold reserve to guarantee electricity system security. A new model has been introduced to ensure the electricity system security through conclusion of transactions on a competitive basis for the purchase of ancillary services availability, namely participation in primary frequency regulation, automatic secondary regulation and manual secondary regulation of frequency and exchange capacities in accordance with the provisions of Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation. In this regard, ETR provisions relating to the providing of cold reserve have been amended.

Separately from the above, when taking into account the achieved results of the electricity system operation and the electricity market for the period after the last ETR amendments (promulgated SG No. 40 of 05.05.2020), gaps and inaccuracies have been found in the said version of the act, as well as presence of provisions, the implementation of which has created significant difficulties for some trading participants, which is why the provisions of Chapter Eight of ETR on rules of supplies provided by a supplier of last resort (SLR) have also been refined.

As a result of creating the necessary conditions for the actual participation of producers from renewable sources (RE) and highly efficient combined production of electric and thermal energy (HECP) with sites of total installed capacity of 500 kW to 1 MW to participate on the organized exchange market will increase its liquidity and stability. Larger traded volumes will also accordingly lead to the demand/supply of a greater number and more diverse exchange products, corresponding maximally to the relevant trading participant portfolio. Thus, competition between suppliers and customers will be encouraged and everyone's trust in the electricity market and its reliability and transparency will be increased.

By removing the ability to merge standard and/or combined balancing groups through a common financial settlement, a similar degree of balancing cost optimization will be achieved.

The adopted amendments to the rules on supply by SLR bring greater clarity to the relationship between the main supplier/balancing group coordinator, the supplier of last resort, the end customer and the electricity transmission or relevant distribution network operator and avoid cases where in contrast to the requirements and purpose of Art. 95a of EA, final customers remain for a significant period of time without an electricity supplier for the time between the termination of supplies by the main supplier and their registration with a supplier of last resort.

Power Exchange Operational Rules (PEOR)

In December 2020, EWRC opened a procedure for amending and supplementing the Organized Power Exchange Operational Rules, initiated at the proposal of the power exchange operator Independent Bulgarian Energy Exchange EAD (IBEX EAD). In 2021, Rules of amending and supplementing the Power Exchange Operational Rules were adopted, promulgated, SG No. 4 of 15.01.2021 (RAS to PEOR, promulgated, SG No. 4 of 15.01.2021). The purpose of RAS to PEOR, promulgated, SG No. 4 dated 15.01.2021, was to create security in public relationship arising as a result of electricity trading on an organized exchange market, by arranging the right of the exchange operator to temporarily suspend the operation of the trading screens of bilateral contracts market segment.

In 2021, the day-ahead market coupling on the Greek and Romanian borders, the introduction and actual operation of a new trading platform as of 1 Dec 2020, as well as the upcoming introduction of block products, necessitated the amendment and addition of PEOR. Also, in result of the acquired exchange market operation experience and its administration, it was found necessary to clarify individual provisions of the Rules. Pursuant to Art.21, para.1, item 42 of EA and in connection with a proposal received from IBEX EAD, EWRC adopted Rules of amending and supplementing the Organized Power Exchange Operational Rules, promulgated, SG, no.41 of 18.05.2021 (RAS to PEOR, promulgated, SG No. 41 of 18.05.2021).

In this regard, with RAS to PEOR, promulgated, SG No. 41 of 18.05.2021, the following provisions of the Rules have been amended and supplemented: art. 8, Art. 9, Art. 24, Art. 61, Art. 87, Art. 92, Art. 96, Art. 99, Art. 102, Art. 103, Art. 105, Art. 123, Art. 124, Art. 131, Art. 148, Art. 159, Art. 163, Art. 164, Art. 185, Art. 186, Art. 192, Art. 195, Art. 198, Art. 214, Art. 224, Art. 232, Art. 233, Art. 242 and Art. 276. The revisions aimed at improving the PEOR in connection with some technical problems that have occurred, specifying the schedules notification deadlines by Electricity System Operator EAD, etc. A new article was also created - 257a - in order to encourage compliance with the provision of Art.105, para.6 of ETR by trading participants, as well as increasing the security of electricity market transactions and ensuring conditions for timely repayment of monetary obligations.

By RAS to PEOR, promulgated, SG No. 41 of 18.05.2021, the aim was to achieve security in the market relationship, which arose in result of the power exchange trade, by creating normative prerequisites for the market coupling operation between the Bulgarian and neighbouring markets and the new trading platform, therefore the possibility of introducing new products. Another improvement was the more accurate and correct application of the by market participants and the power exchange operator.

At the proposal of IBEX EAD, in November 2021, EWRC opened a procedure for amending and supplementing PEOR. In result of the acquired exchange market operation experience and its administration, a need has been established for a new settlement of some relations arising in the course of electricity trading on the organized exchange market in the bilateral contracts and day-ahead market segments. Therefore, with the Rules for Amendments and Supplements to the Rules for the Power Exchange Operational Rules, promulgated, SG No. 2 of 07.01.2022 (RAS to PEOR, promulgated, SG No. 2 of 07.01.2022) the following provisions of the Rules have been amended and supplemented: Art.34, Art.139, Art.147, Art.153, Art.239 and Art.244. With the adopted amendments and supplements, the procedure of power exchange withdrawal of trading participants at their own will was regulated as well as clarity has been introduced regarding the clearing price setting mechanism. Other aspects that have been specified with the amendments were the offers submitting deadlines, the publication of clearing prices for the day of delivery, the relevant traded volumes, the supply and demand curves, covering the submitted offers for demand and supply in the Bulgarian market area, the net exchange position (import/export) for the relevant delivery interval, as well as the publication of trading participants trading results, entered into transactions in CET-

DAM. Art.153 wording was revised as well with in order to protect the exchange operator from groundless objections leading to excessive administrative involvement. In addition, IBEX EAD has expressed the opinion that “guarantee insurance” should be dropped as a payment and/or good performance security type in the bilateral contracts market segment, since in the event of obligations non-fulfilment, the upright party would face difficulties in obtaining this type of collateral due to process complexity in satisfying insurance claims compared to satisfying a bank guarantee and/or cash deposit. To this end, the wording of Art.239 and Art.244 have been amended and § 1, item 18 of Additional provision to the Rules has been repealed. The adopted amendments aimed at the uncontroversial application of PEOR by market participants and strive to prove more reliable conditions and prerequisites for concluding long-term products transactions on the bilateral contracts segment.

Rules of maintaining electricity supply offers comparison platform (RMESOCP)

With the Act on Amendments and Supplements to the EA (promulgated SG No. 57 of 26.06.2020), new item 27a has been created in Art.21, para.1 of EA, which provided for EWRC power to create and maintain a platform of comparing electricity supply offers (the Platform). According to Art.38i, para.5 of EA, the term and conditions of maintaining the Platform shall be determined by rules adopted by EWRC decision. With the adoption of RMESOCP, terms and conditions have been established for the Platform maintenance, participation and use, as well as a certain security has been ensured in the public relationship that arises as a result of its operation.

RMESOCP have been structured systematically in seven separate chapters. Chapter one, entitled *General Provisions*, consists of Art.1 – Art.4 and governs the subject scope, the public relationship, subject to regulation, and the Platform maintenance. Chapter two, entitled *Registration*, includes Art. 5 – Art. 11 and regulates the procedure of registration and access to the Platform for individual user categories, registration termination and temporary suspension of access to it. Chapter three entitled *Types of offers*, includes Art. 12 – Art. 15 and regulates the criteria by which different types of offers shall be distinguished, respectively the conditions that offers should meet. Chapter four, *Elaboration, publication, updating and removal of offers* consists of Art. 16 – Art. 21 and regulates the terms and conditions and manner of elaborating, publishing, updating and removing offers by registered traders, as well as the operator’s powers in this regard. Chapter five, *Forming and sending a request*, covers Art. 22 – Art. 25 and regulates the terms and conditions and manner of selecting an offer, preparing a request and the legal consequences resulting from sending a request to the trader. Chapter six and Chapter seven provide for the terms and conditions and manner to control compliance with the rules, as well as a mechanism to protect the personal data provided by the entities using the Platform.

RMESOCP adoption and implementation creates clarity and security in the relationship among the Platform users on one side and between them and the Platform operator on the other. Thus, an effective offer comparing tool has been created, favoring market liberalization, the choice and shift of electricity supplier has been facilitated and encouraged, and competition between traders carrying out retail deliveries on the territory of the Republic of Bulgaria has been increased.

Methodology on setting electricity prices of the supplier of last resort, promulgated, SG No. 60 of 20.07.2021, in force as of 01.08.2021, amended, SG no. 90 of 29.10.2021, in force as of 29.10.2021

The legislation amendments and non-compliance with the legal provisions have necessitated the repealing of Methodology on setting the electricity prices of the supplier of last resort, effective as of 2021 and adopted by EWRC Decision under Protocol No. 110 of 18.07.2013, item 2 and necessitated the adoption of a new act. The reasons for the adoption of a new Methodology included, despite EA amendments, the impossibility of effective control by EWRC regarding the application of the Methodology of July 2021 by various suppliers of last resort (SLR), as a result of the complex

pricing, as well as the suspended EWRC obligation to determine availability for each producer. It should be noted that the Methodology of July 2021 did not limit the SLR to purchase energy at prices at their own discretion, which led to the possibility of abuses and should have not be allowed in view of the fact that electricity supply by SLR is a service of public interest. In this regard and on the basis of Art.21, para.1, item 12 of EA, EWRC adopted the Methodology on setting the electricity prices of the supplier of last resort, promulgated, SG, no. 60 of 20.07.2021.

The adoption of the new Methodology aims to establish clearer rules and a fairer mechanism of setting SLR prices, which are to take into account the interests of both suppliers and customers. In this regard, indirectly, i.e. through the risk of suffering financial loss, the possibility for SLR to purchase the electricity they need at arbitrary prices, regardless of the current market price levels, has been taken away from them, while still allowing a certain tolerance in the price levels, which considers the specifics of the activity SLR electricity supply and the related difficulties in forecasting the number of customers and their consumption. The Methodology also creates conditions for EWRC to be able to quickly and effectively control the correct SLR price formation.

Methodology on setting the electricity prices of the supplier of last resort, promulgated, SG, no. 60 of 20.07.2021 ties the SLR supply price to the hourly prices of the day-ahead market of the Bulgarian power exchange and to the balancing market shortage prices in a way that, on one hand, ensures that prices paid by customers will at any time be significantly higher than the market, that is, customers will not have an incentive to stay with this supplier, and on the other hand, it prevents unreasonably high delivery prices, while ensuring an acceptable return on the service provision. In this way, greater equality, predictability and security have been ensured in the relationship between SLR and their customers. In addition, by repealing the Methodology on determining availability, EWRC will uncontroversially exercise its powers introduced in relation to determining availability under Art. 21, para. 1, item 21 of EA.

In October 2021, EWRC initiated a procedure for amending and supplementing the Methodology, due to the need to clarify some provisions with a view to their proper implementation by the SLR. In addition, as a result of the significant and permanent increase in electricity prices on the free electricity market, as well as the still large number of non-household customers without a selected electricity supplier during the period of the Methodology, it was required to temporarily introduce a new formula for the average sales price of electricity intended for sales to SLR customers.

In this regard, with the adopted Methodology for amending and supplementing the Methodology on setting the electricity prices of the supplier of last resort, promulgated, SG, no. 90 of 29.10.2021 (MAS on the Methodology), art. 8 has been amended with a view to clarifying the provision's wording in order to accurately reflect the requirements of the Electricity Trading Rules regarding preparation and submission of consumption schedules. With regard to § 2 of MAS on the Methodology, it should be noted that the need to temporarily apply a corrected formula for the average selling price of electricity intended for sales to SLR customers, has arisen from the extreme electricity price values on the day-ahead market, to which the SLR price is tied.

The adoption of MAS on the Methodology aims at creating clearer and more precise Methodology provisions, as well as to bring them into line with other EWRC by-laws. In addition, § 2 of the Transitional and Final Provisions provides for an additional transitional period for the benefit of small non-household customers, who are not sufficiently aware of their risks and responsibilities in the new market environment. This transitional period will be without excessively high electricity prices, so that after researching the market at freely negotiated prices, customers will be able to take advantage of the opportunities to reduce their electricity costs by comparing and choosing competitive offers from other suppliers.

Renewable energy sources

EWRC determined preferential tariffs for the purchase of electricity produced by renewable energy for energy sites under Art. 24, item 1 of ERSA, namely - with a total installed capacity of up to 30 kW inclusive, which are planned to be built on roof and facade buildings connected to the electricity distribution network and on real estates attached to them in urbanized areas.

Next, by 30th June 2021, EWRC updated the preferential tariffs of electricity produced from biomass with a coefficient that reflects the change in the price-forming elements – energy production raw materials costs, transport fuels costs and labor and salary costs.

Pursuant to §28, para.3 of the Transitional and Final Provisions of AAS of EA (promulgated SG No. 9 of 2021) EWRC determined premiums for RES electricity generated by plants with total installed capacity of 500 kW and over 500 kW, and they represented the difference between the preferential price determined before the entry into force of the abovementioned act, respectively the updated preferential price of the site, and the estimated market price determined for that period for RES electricity depending on the primary energy source.

In 2021, in the renewables sector there was an increased interest in the construction and commissioning of energy facilities under Art. 24, item 1 of ERSA, namely - with total installed capacity of up to 30 kW inclusive, built on roofs and facades of buildings connected to the electricity distribution network and on real estate attached to them in urbanized areas. That was related to the desire of the energy facilities owners to meet their own electricity needs close to the place of production, which was inevitably related to reducing losses from electricity transformation and transmission. It is expected that in the coming years the interest in constructing similar energy facilities will remain, with a tendency for their multiple increase.

In 2021, EWRC also reported increased investment interest in the construction and commissioning of larger-scale PvPP projects, as a result of the reported higher prices on IBEX EAD day-ahead market in the second half of 2021 and the achieved futures levels for the Bulgarian market on the European Electricity Exchange (EEX) for 2022. Given the high electricity prices on the power exchange market, the majority of industrial consumers prefer to invest in that type of equipment in order to reduce their costs by covering their own sites and/or factories' needs or to sell the electricity generated on one of IBEX platforms on one hand, and on the other hand, that gives investors the opportunity to return the invested funds in shorter terms, which makes projects of this type even more attractive.

In result of the above, analyzes were carried out and it was found that the main driving factor for the rise in electricity prices on the European and, respectively, regional power exchanges, in addition to EU economic recovery after the COVID-19 pandemic, determining financial markets growth and carbon emissions prices increase, was also the record high natural gas price on European exchanges.

In 2022, new investments in construction of electric power plants from RES are also expected according to the Plan for the Development of the Transmission Network of the Republic of Bulgaria for the period 2021 - 2030 adopted by Decision No. ДПРМ-2 of 18.11.2021 of Electricity System Operator EAD, according to which generation capacity deployment in the country is foreseen until 2030, based on the investment intentions expressed by companies.

It can be concluded that based on forecast data in ESO EAD plan and the expressed investment interest in constructing renewables connected to the electricity transmission and distribution networks, it is expected that in 2022 the installed capacity will be in the total amount of 137 MW, including: PvPP – 130 MW, HPP – 3 MW and BioPP – 4 MW.

Electronic certificates of origin of electricity generated in high-efficiency cogeneration

On the basis of Art. 21, para. 1, item 18 of EA, EWRC issues, transfers and cancels monthly certificates of origin for the commodity electricity produced in high-efficiency cogeneration (HEC) of power and heat. The secondary regulation provides for the way to determine the amount of electricity produced by cogeneration depending on the type of technological cycle, the technical metering devices requirements, as well as cogeneration electricity registration and criteria for determining the cogeneration as highly efficient.

The certificate of origin is an electronic document that is issued at the request of a producer, for a minimum net quantity (1 MWh) of electricity, measured at the plant outlet and submitted to the relevant grid, subject to compliance with the requirements for accuracy, reliability and impossibility of manipulation.

For each unit of electricity produced in HEC of power and heat, only one certificate of origin can be issued, which is valid for 12 months since the respective unit of electricity has been generated and it is used by the producer to prove to the energy buyer that it is produced in high-efficiency cogeneration.

With EA amendments that came into force as of 02.02.2021 (amended and supplemented SG No. 9 of 02.02.2021), the principle of purchasing electricity produced by power plants with combined production of electricity and heat has changed, namely the public supplier or end suppliers, respectively, are obliged to buy the entire amount of HEC electricity from producers with total installed capacity of less than 500 kW, connected to the relevant network, and for which amount EWRC has issued the relevant number of electronic certificates of origin. The issued electronic certificates are transferred to the electricity buyer (the public supplier or end suppliers). Another amendment covers producers with installed capacity sites of 500 kW and over 500 kW, who receive premiums from the Electricity System Security Fund (the Fund, ESSF) for the entire HEC electricity amount for which electronic certificates of origin have been issued, and which producers transfer to ESSF.

Main priorities in the gas sector in 2021 again were guaranteeing security of supply, ensuring a liquid and competitive natural gas market and developing the country's gas transmission infrastructure. The interconnection of the Bulgarian natural gas market with the natural gas markets of the EU member states in the region and in Europe will facilitate the implementation of the European energy policy of building a single interconnected pan-European natural gas market.

The natural gas market in the Republic of Bulgaria in 2021 was still supplied by one main supplier, but there was availability of alternative supplies that could be reported, which increased the possibility of choice. Gas market liberalization in Bulgaria depends on the development of the gas transportation infrastructure as well. Practically, in the beginning of 2021 natural gas supplies from Azerbaijan have been realized. Thus, albeit to a small extent, Bulgaria has achieved some diversification of natural gas supplies, which is a favourable step towards competition.

The organized exchange market trading was successfully carried out in 2021 and the number of registered participants continued to grow. Traded volumes were higher than those in 2020, which showed that there were opportunities for market development and increased competition. The steps taken by the Regulator in 2021, encouraged the market competition, as well as the liberalization processes development in the sector.

Bulgartransgaz EAD is a combined gas operator, performing natural gas transmission and storage activities. The company is the owner and operator of the national gas transmission network (NGTN) and gas transmission network for transit transmission (GTTN). In this regard, two

balancing zones have been distinguished on the territory of Bulgaria - a national balancing zone and a transit balancing zone. Bulgartransgaz EAD has declared that in result of implementing technical measures and investment intentions, the currently available operating facilities have a capacity of bidirectional connection between NGTN and GTTN, sufficient for the junction of the two networks, respectively balancing zones, into one.

In this regard, in 2021, EWRC opened a procedure of amending the Natural Gas Market Balancing Rules (NGMBR), with a view to connect the two networks, respectively balancing zones, for the purposes of balancing. The text of Art.3 of the Rules has been amended and according to the new version of the NGMBR, they shall be applied in terms of the balancing zones of the gas transmission networks on the territory of the Republic of Bulgaria. The new NGMBR aim at achieving easy management of balancing portfolios by network users and traders, avoiding the risk of generating a positive imbalance in one network and a negative one in the other, as well as creating conditions for increasing the Bulgarian gas market liquidity and competitiveness.

In 2021, EWRC approved Rulebook for Operation on the Organized Exchange Market of Balkan Gas Hub EAD (BGH), promulgated, SG No. 56 of 07/06/2021. The rules regulate the overall activity of the natural gas exchange operator in the four market segments. With a view to clarity and precision, the act is structured systematically in six separate chapters, which regulate the activity organization, rights and obligations of all commercial participants and of GHB in connection with their participation, respectively with the gas exchange market operation in the following areas: offering spot products segment (short-term segment); offering long-term products (long-term segment); gas release program implementation segment (GRP segment); and brokerage services segment. BGH Operational Rules also contain settlement rules and rules for trading behaviour on the trading platform operated by BGH, which are meaningfully separated into separate chapters.

The adoption and implementation of BGH Operational Rules contributes to clarity and certainty in the relationship among trading participants, as well as between them and Balkan Gas Hub EAD in its capacity as an organized gas exchange market operator.

2.2. Report on the implementation of the Clean Energy Package

According to the provision of Art.59, para.1 (u) of Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market in electricity and amending Directive 2012/27 / EU (Directive (EU) 2019/944), EWRC has the obligation to monitor the implementation of rules relating to the roles and responsibilities of transmission system operators, distribution system operators, suppliers, customers and other market participants pursuant to Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity. This provision of the Directive has not been transposed into the legislation of the Republic of Bulgaria. In this regard, it should be borne in mind that EWRC has no powers to start up legislative initiative.

3. ELECTRICITY MARKET

3.1. Networks regulation and technical functioning

3.1.1. Unbundling

Pursuant to Article 59 (1), (j) of Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU (Directive (EU) 2019/944), EWRC should ensure that there is no cross-subsidisation between transmission, distribution and supply activities or other electricity or non-

electricity activities. In this regard, Article 39, paragraph 1 of the Energy Act describes the types of activities subject to licensing. EWRC issues a license for each of the indicated activities, for a certain period and with specific conditions, which are an integral part of the decision for its issuance.

Pursuant to Article 37 of EA, energy companies keep separate accounting records for each activity subject to licensing, the activities subject to licensing and other activities, for each branch and enterprise, as well as for activities at regulated and freely negotiated prices. The rules for the separate accounting of energy undertakings, including the assets for the purposes of pricing by groups of customers, as well as the accounts form and content for regulatory purposes, shall be determined by a decision of the Regulator. In addition, it should be noted that energy companies subject to an independent financial audit submit to the Regulator an audit report on compliance with the rules for keeping separate accounts.

3.1.2. Network extension and optimization

Pursuant to Article 59, paragraph 1, (k) of Directive (EU) 2019/944, EWRC monitors investment plans of the transmission system operators and providing in its annual report an assessment of the investment plans of the transmission system operators as regards their consistency with the ten-year Union-wide network development plan; such assessment may include recommendations to amend those investment plans.

In connection with the above, with EWRC Decision № ДПІРМ -2 of 18.11.2021, the Plan for development of the transmission electricity network of Bulgaria for the period 2021 - 2030 was approved. The 2021-2030 ten-year plan contains the basic electricity transmission infrastructure, which is planned for construction, expansion, reconstruction and modernization over the next ten years. It ensures timely and harmonious construction and commissioning of new elements in the electricity transmission network for economical and safe operation of the electric power system (EPS), in compliance with the security criteria and the current quality standards of electricity supply.

The annual estimated values of all costs for construction, expansion, reconstruction and modernization of the electricity transmission network objects and of the protection and EPS management systems for the period of the 2021 - 2030 Ten-year plan, amount to 1 727 703 thousand BGN. For the period 2021-2023 ESO EAD intends to make investments at the amount of BGN 484 692 thousand or 28.15% of the total investment amount.

In view of the above, after examining the investment needs, the Regulator considered that the Transmission Electricity Network Development Plan of Bulgaria for the period 2021-2030 submitted by the independent transmission operator covered all investment needs and that it was in accordance with the ten-year plans of the network development in the European Union. The plan has been developed considering the available information on forthcoming changes in generation, supply, consumption and exchange with other countries, as well as the regional networks investment plans and the EU networks.

3.1.3. Network tariffs

Pursuant to Article 21, paragraph 1, item 8 of EA, EWRC regulates prices in the cases provided for in the same act. Pursuant to Article 30, paragraph 1, items 1, 6, 9, 10, 13 and 17 of EA, prices subject to regulation by the Regulator are:

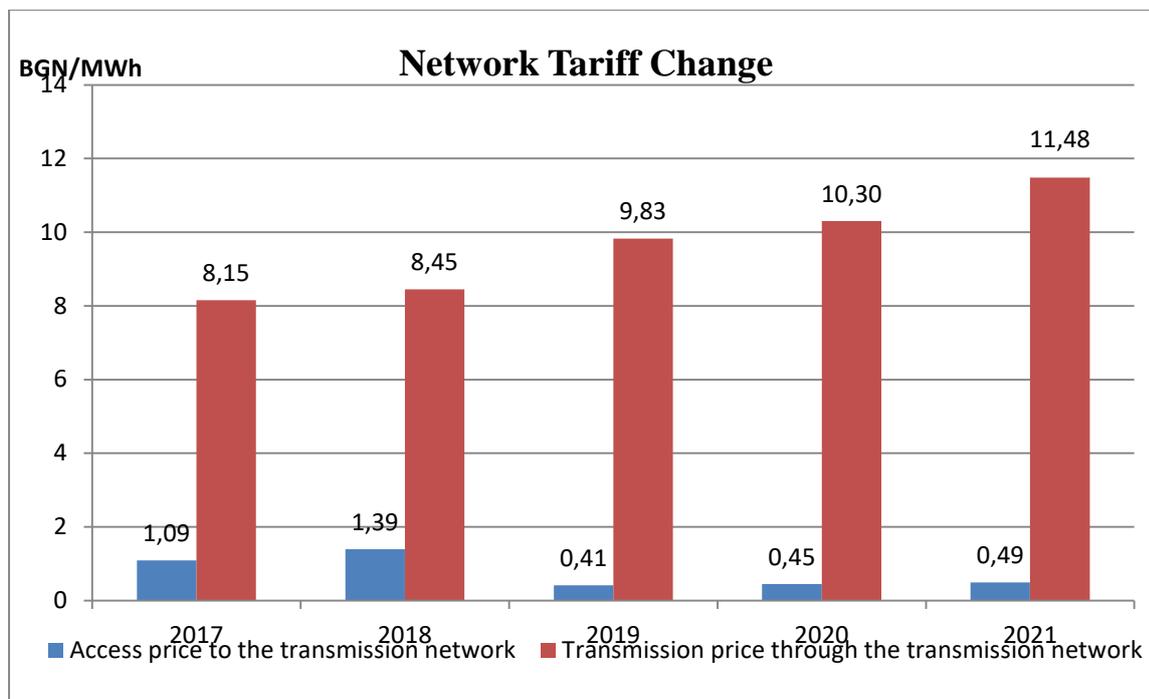
- access and/or transmission through the transmission network;
- access and/or transmission through the distribution networks.

In the pricing decisions during the period, the Regulator consistently applied a balanced approach, taking into account the interests of all participants, in order to avoid sharp price changes.

The network tariffs development for the period 2016 - 2021 is presented in the table below:

			2016	2017	2018	2019	2020	2021
ESO EAD	Access price to the transmission network	BGN/MWh	1.13	1.09	1.39	0.41	0.45	0.49
	Transmission price through the transmission network	BGN/MWh	7.32	8.15	8.45	9.83	10.30	11.48
	Access price to the transmission network for PvPP and WPP	BGN/MWh	7.02	6.68	3.02	5.14	5.28	5.40
	Access price to the transmission network for power generators, excluding PvPP and WPP generators	BGN/MWh	-	-	-	2.12	2.26	2.42
CEZ Distribution Bulgaria AD	Transmission price through the distribution network MV	BGN/kWh	0.00875	0.00923	0.00971	0.01002	0.00980	0.01076
	Transmission price through the distribution network LV	BGN/kWh	0.02933	0.03098	0.03245	0.03426	0.03355	0.03636
	Access price of non-household customers	BGN/kWh/day	0.01745	0.01745	0.01796	0.01989	0.01989	0.02151
	Access price of household customers	BGN/kWh	0.00505	0.00505	0.00519	0.00577	0.00568	0.00605
EP Yug AD	Transmission price through the distribution network MV	BGN/kWh	0.00805	0.00823	0.00884	0.0095	0.00915	0.00994
	Transmission price through the distribution network LV	BGN/kWh	0.03127	0.03154	0.03253	0.03576	0.03574	0.03783
	Access price of non-household customers	BGN/kWh/day	0.01651	0.01651	0.01733	0.01981	0.01977	0.0206
	Access price of household customers	BGN/kWh	0.00503	0.00503	0.00516	0.00599	0.00529	0.00598
ERP Sever EAD	Transmission price through the distribution network MV	BGN/kWh	0.0119	0.01036	0.0117	0.01274	0.01285	0.01312
	Transmission price through the distribution network LV	BGN/kWh	0.03151	0.03008	0.03278	0.03478	0.03531	0.03583
	Access price of non-household customers	BGN/kWh	0.00818	0.008	0.00854	0.00896	0.02053	0.02073
	Access price of household customers	BGN/kWh	0.00818	0.008	0.00854	0.00896	0.00890	0.00885
ERP Zlatni Piasaci AD	Transmission price through the distribution network LV	BGN/kWh	0.03453	0.02783	0.03303	0.03125	0.04429	0.06035
	Access price of non-household customers	BGN/kWh	0.00718	0.00666	0.00675	0.00644	0.01349	0.01325
	Access price of household customers	BGN/kWh	0.00718	0.00666	0.00675	0.00644	0.01349	0.01325

The graph below shows the change in transmission and access prices for the last five years. It could be noted that the access price has significantly decreased in 2019 and has managed to comparatively maintain its value over the last three years. The transmission price through the electricity transmission network maintained an upward trend, increasing by nearly 11.5% in 2021 compared to 2020, and only 4.78% in 2020 compared to 2019.



3.1.4. Security and reliability regulation

Cross-border infrastructure access, including capacity allocation and congestion management procedures

Auction rules on conditions for access to the network for cross-border exchange of electricity (Rules on transmission capacity allocation) and cross-regional cooperation between transmission system operators were developed in line with Regulation (EU) 2019/943, by introducing common rules and procedures for the allocation and provision of available transmission capacity in both directions on the interconnections of the EPS of Bulgaria and neighbouring power systems. The rules were also drafted in conjunction with Regulation (EU) 2016/1719 of 26 September 2016 establishing a guideline on forward capacity allocation (Regulation (EU) 2016/1719) and Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing guidelines on capacity allocation and congestion management (Regulation (EU) 2015/1222). The purpose of these rules is to ensure optimal transmission network bottlenecks management, promoting energy exchanges development and coordinated allocation of cross-border capacity through non-discriminatory market-based solutions.

The Rules on transmission capacities allocation are to be submitted by ESO EAD every year for EWRC approval and the Harmonized allocation rules for long-term transmission capacities at the common borders between EU member states were approved on 29 Oct 2019 by ACER. The auction rules, the user registers and the agreed transmission capacities to be allocated are published on ESO EAD website. The results of the annual, monthly and daily auctions organized by ESO EAD are publicly available on ESO EAD website and in the public section of the electricity market administration system. According to the above rules, ESO EAD performs the role of auction operator for allocation of 50% in both directions of the agreed transfer capacities on the Bulgarian-Turkish border, as well as the daily transfer capacities on the border Bulgaria-North Macedonia. The Single Allocation Platform JAO allocates transmission capacities on an annual, monthly and daily basis on the Bulgarian-Greek and Bulgarian-Serbian borders, and on an annual and monthly basis on the Bulgarian-Romanian border. TRANSELECTRICA (Romania) is the auction operator of the allocation of daily transmission capacities on the Bulgarian-Romanian border, and MEPSO (North Macedonia) - of the annual and monthly transmission capacities on the border Bulgaria-North

Macedonia. ESO EAD reports the data for which it is the auction operator in the ARIS system (ACER REMIT Information System). Data on other auctions are reported by JAO or the relevant auction operator.

Cooperation in relation to the implementation of EC Regulations

At the beginning of October, Electricity System Operator EAD started conducting fully daily tender procedures for next-day delivery of the legally required operating reserves for power system management. The service of frequency regulating and of exchange capacities to ensure reserves in real time has been introduced in implementation of Article 6, paragraph 9 of Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity. European electricity transmission operators have been introducing the service of frequency regulation and exchange capacities to provide real-time reserves in response to the European electricity markets integration, which necessitates a new approach in electricity systems balancing. The trend towards growth in RES electricity production also imposes the need to develop services for providing operational reserves in real time. In accordance with the requirements of Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation, ESO EAD has developed rules and an electronic platform to conduct tender procedures of providing frequency containment and restoration reserves and exchange capacities. Applicants willing to provide these services shall pass technical tests to demonstrate their ability to provide frequency containment reserves, which are activated within 30 seconds, and frequency restoration automatic and manual reserves and exchange capacities, which are activated within up to 15 minutes. Such operating reserves providers can be thermal power units that have commercial schedules, as well as fast-synchronizing units such as HPP or aggregators that can change their generation within 15 minutes.

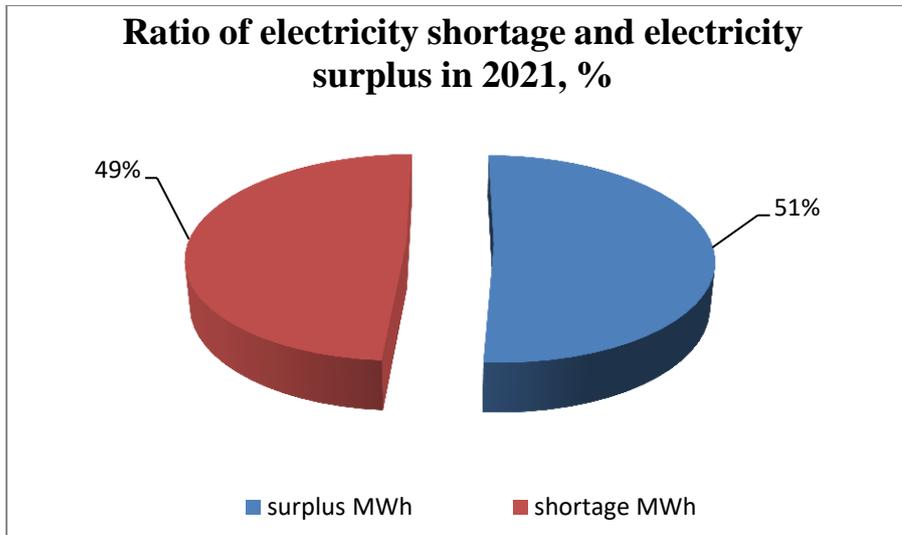
One of the main tasks related to the implementation of the requirements arising from Regulation (EU) 2015/1222 establishing guidelines on capacity allocation and congestion management (CACM) was the development of a *Common capacity calculation methodology for the day-ahead and intraday market time-frame for the SEE CCR*, as well as other accompanying methodologies. The implementation of the methodology is closely related to the activity of the SEE CCR Regional Security Centre (RSC). Due to delays related to the establishment of the Thessaloniki RSC, the methodology implementation will be delayed too. Another important task related to the implementation of the requirements arising from Art.35 of Regulation 2015/1222 was the development of a *Methodology for redispatching and countertrading* and a *Methodology for cost sharing*.

As required by Art.76 and 77 of Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation (Regulation (EU) 2017/1485), a common methodology for the region of Southeast Europe was developed to coordinate the analysis of operational security. The methodology is in compliance with the already developed *Methodology for redispatching and countertrading* and a *Methodology for redispatching and countertrading cost sharing*, as required by Art.76, paragraph 1 of Regulation 2017/1485.

One of the main tasks related to the implementation of the requirements arising from Regulation (EU) 2016/1719 establishing a guideline on forward capacity allocation, is the development of a *Common capacity calculation methodology for long-term time frames for SEE CCR* under Art.10, as well as the other accompanying methodologies, and the development of a *Methodology for splitting cross-zonal capacity*. The three regional TSOs chose for that methodology the calculating method based on coordinated net transmission capacity.

3.1.5. Monitoring balance of supply and demand

Total energy shortage in 2021 was 731 963 MWh compared to 524 087 MWh in 2020, which is an increase of approximately 39.66%. Total energy surplus in 2021 was 764 943 MWh compared to 899 567 MWh in 2020, which is a decrease of approximately 15%. Percentages of electricity shortage and electricity surplus in 2021 are shown in the Figure below.



Pursuant to Art.21, paragraph 1, item 8, proposition 2 of EA, the Regulator determines annually a marginal price for concluding transactions on the balancing energy market.

In its practice so far, EWRC has established two separate marginal prices, namely - a marginal price for concluding transactions on the balancing energy market for the provision of a systemic upward regulation service and a marginal price for concluding transactions on the balancing energy market for providing a systemic downward regulation service.

The upward regulation marginal price is tied to the achieved price on the day-ahead market, thus achieving interdependence in the two markets and not allowing arbitrage. Such a measure ensures the proportionality of the balancing costs of market participants depending on hourly market prices. The achieved day-ahead market (DAM) price functions as a minimum price for upward regulation proposals. In this way, the imbalances price always is more unfavourable than that the DAM one, and market participants are encouraged to participate in the balancing energy market with their reserve capacity.

With Decision № II-45 of 23.12.2020 EWRC has continued to apply a more balanced pricing model, according to which the marginal price for concluding transactions on the balancing energy market for upward regulation is determined as DAM price + supplement of BGN 100/MWh, where DAM price is the DAM price of IBEX EAD for the respective hour. A lower supplement would not cover the variable costs of the plants providing this service to ESO EAD. When using this approach, the Regulator expects marginal upward regulation prices, respectively the shortage costs of market participants, to reduce.

The marginal downwards regulation price should be common for all market participants, regardless of whether the used capacities are generating or consuming. Thus, non-discriminatory and equal treatment is ensured for the plants offering this system service and no benefit is allowed for one participant at the expense of the others or speculative behaviour. Market principles require that downward regulation price to be a positive value. At a negative price value, the plant providing the system service sells shortage, and consumers who are in surplus buy it, which contradicts the principles of the balancing market and leads to extreme values of balancing energy and high

imbalance costs. The negative downward price is an excessive sanction for producers and consumers who are in excess, which distorts the market, jeopardizes its operation and contradicts European practices. To this end, with Decision № ІІ-45 of 23.12.2020, EWRC maintained the marginal price for concluding transactions on the balancing energy market for downward regulation at BGN 0.00 (zero)/MWh.

With Decision No.ІІ-44 of 30.12.2021, in force as of 01.01.2022, EWRC set a marginal price for concluding transactions on the balancing energy market as follows:

1. marginal price for concluding transactions on the balancing energy market for upward regulation at the amount of DAM price + supplement of BGN 100/MWh, where DAM price is the IBEX EAD hour DAM price;
2. marginal price for concluding transactions on the balancing energy market for downward regulation at the amount of 30% of DAM price, where DAM price is the IBEX EAD hour DAM price, but not higher than the regulated price of HPP owned by National Electric Company EAD;
3. marginal prices under item 1 and 2 do not apply when concluding transactions for balancing energy that is purchased/sold from/to neighbouring energy systems under bilateral agreements or from a regional balancing market.

3.1.6. Cross-border issues

Regarding the technical cooperation between the EU transmission system operators and third countries, the Bulgarian TSO is in close cooperation with the operators - members of the European Network of Transmission System Operators for Electricity (ENTSO-E). In connection with the entry into force of Regulation (EU) 2019/943, ESO EAD has sent letters with a proposal for cooperation with third countries in the South East Europe Region (non-EU members of ENTSO-E: Turkey, North Macedonia and Serbia) for the coordinated calculation of inter-zonal capacity under ACER methodologies for determining the 70% threshold of the cross-zonal capacity and for the coordinated calculation of operational security.

Market coupling projects in the day-ahead timeframe

- *SDAC (Single Day-Ahead Coupling) Project*

The project was created for management and development of the procedures and the technical feasibility of the Single European day-ahead market. The Single European day-ahead market is compliant with the European legislative framework; it was initially launched in Western and Central Europe and is based on the PCR Decision (Price Coupling of Regions) and has been gradually extended. Its main objective is the optimal and full use of energy resources through implicit trade in the day-ahead timeframe.

The Republic of Bulgaria is a full SDAC member and is fully integrated in the common European market, which was not the case until recently due to objective reasons, arising from specific characteristics of neighbour market zones, and namely the lack of a functioning market in the Republic of Greece in accordance with the CACM not long ago and the recently implemented, belated merge of MRC with 4MMC market coupling of which Romania is a part. ESO EAD participates in the management committees of all TSOs, as well as in the general committee of the market coupling. It is also an active participant in the project working groups.

Taking into account the significant role of the market integration for trade participants and consumers and aiming at creating maximised trade conditions, in 2021 ESO EAD jointly with IBEX EAD worked intensely for the swiftest possible accession of the Bulgarian market zone to the Single

European day-ahead market and successfully implemented the market couplings with Romania and the Republic of Greece through the following projects:

Local project for market coupling with the Romanian market zone

Romania just till recently was part of 4MMC regional market coupling between Hungary, Czech Republic and Slovakia and Bulgaria is part of the European day-ahead market coupling SDAC. Until the launch of the Interim project in the end of 2018 (market coupling of DE-AT-PL borders with 4M) which coupled 4MMC to MRC in the Single day-ahead coupling (SDAC), it was not possible to launch a coupling project of the Bulgarian-Romanian border markets due to technical incompatibility.

After the Interim project launch, it became possible to complete such a market coupling project with a perspective of entering into real operation immediately after the joining of 4MMC to SDAC. The Interim project has successfully started work on 18 June 2021. Considering the significant importance of the local project, the participants therein signed the required documents defining its structure and organisation and immediately started working actively on it.

The whole time ESO EAD played a key role in the project management, organizing the work of the Project Working Group and monitoring the implementation of assigned tasks by all working groups, part of the initiative.

In continuation of the active work on the project, in the beginning of April 2020 the countries informed the operational groups (MRC OPSCOM and SDAC MSD) of the central SDAC project about the project that had started and they submitted a request for a change of the existing agreements with the purpose of including the project as geographical extension to SDAC. The project was also officially presented to the General assembly of the Management Committee of the Transmission System Operators (TSOs) and Nominated Electricity Market Operators (NEMOs) for day-ahead markets.

The timely entering into real market coupling operation with the Romanian market zone directly depended on the timely launching of the Interim project for according to the European Commission guidelines, the Bulgarian-Romanian local market coupling had to happen no later than 3 months after the start of the Interim project.

Due to delays in testing by some of the countries participating in the Interim project, the real operation of the project was re-scheduled for 17 June 2021 and on that date it launched successfully, with first day of actual delivery 18 June 2021.

On 27 Oct 2021 the market coupling with Romanian market area in the day-ahead segment successfully went live, with first day of delivery 28 Oct 2021.

By including the Bulgarian-Romanian border, bearing in mind the earlier (in May 2021) market coupling with the Greek market area, our country became fully integrated into the common European market in the day-ahead segment.

Project of market coupling between the Republic of Bulgaria and the Republic of Greece

The market coupling of Bulgaria with Greece has been realized through IBWT market coupling project of the Italian borders.

The Republic of Greece launched a local day-ahead and intraday market in accordance with the European legislative framework on 1 November 2020. In order to start a market coupling project as soon as possible, the Greek and Bulgarian transmission and market operators, supported by NRAs, launched a local project by submitting a request for the Bulgarian market zone joining through BG-GR border to the existing regional market coupling initiative of the Italian borders (IBWT – Italian Borders Working Table). In 2018, ESO EAD and IBEX EAD received all required approvals by the regulatory authorities and the project Managing Committee and also signed the

accession documents thereto and entered all the working groups that were part of it. The parties elaborated a roadmap with the specific activities accompanying the market coupling between them and began to work actively on the project.

Two key steps preceding the successful finalization of the project took place at the end of 2020: the successful launch of the Greek day-ahead market, in line with the European Target Model in November and the Greek-Italian border market coupling actual operation, which successfully launched on 15 December 2020.

In March 2021 numerous tests were carried out, which were a prerequisite and a mandatory condition for the successful market integration of the Bulgarian market area through the Bulgarian-Greek border.

Greece - Bulgaria market coupling started actual operation on 11 May 2021 with first day of delivery 12 May 2021.

Project of market coupling with the North Macedonia market zone

After the signed memorandum for day-ahead market coupling under Western Balkans 6 initiative in April 2018, and the following several project meetings, a stage has been reached, where legislative amendments in the regulatory framework of North Macedonia were required. Those amendments would guarantee an organization of the market pursuant to Regulation 2015/1222.

In 2020, North Macedonia implemented into its local legislation the required minimal legislative framework under Regulation 2015/1222, and in September 2020 the Ministry of Energy of North Macedonia designated a Macedonian market operator (MEMO) as a Nominated Electricity Market Operator (NEMO).

After the MEMO designation, the Bulgarian and Macedonian transmission and market operators renewed the market integration project and began to actively work on it, with a perspective to put it into actual operation in 2023, with an interim step in 2022, when a local day-ahead market was also expected to be launched.

In order to organize the activities of the market coupling project with North Macedonia, the parties started holding regular working meetings, where they discussed and approved a road map and the project organization. Memorandum of Cooperation and accompanying Terms of Reference were signed. Currently, activities are being done in accordance with the activities under the agreed roadmap of the joint project.

In 2021, the Macedonian market operator - MEMO conducted two unsuccessful procedures for selecting a service provider for the needs of the day-ahead market. A third procedure has been announced and it is expected to be successfully finalized at the end of the first quarter of 2022.

Project of market coupling with the market zone of the Republic of Serbia

In 2018 negotiations on trilateral coupling between Bulgaria, Serbia and Croatia were launched. In 2019 the countries elaborated an Analysis on the required conditions and feasibility of the project and the paper was agreed between the three parties. Project activities continue and some of the required following steps are connected to legislative amendments in the regulatory framework of the Republic of Serbia that should guarantee the market organization in accordance with Regulation 2015/1222.

In 2021 some changes were introduced into the legislation of the Republic of Serbia, which are expected to enable the resumption of project activities in the coming years. A prerequisite for the successful implementation of a project is to find a legislative solution that would ensure the necessary obligation to implement a legislative framework reciprocal to the European.

Market coupling projects in the intraday timeframe

- **SIDC(XBID) project**

The single integrated intraday market allows continuous cross-border trade, promotes competition and increases liquidity by allowing a more effective use of the resources for energy production in Europe.

XBID project has been created for management and development of the procedures and technical feasibility of SIDC – Single Intraday Coupling. Its main objective is to create a solution for cross-border implicit continuous intraday trade (simultaneous allocation of energy and capacity) in Europe. The trade system XBID allows the cross-border energy trade up to one hour before the real delivery, and during the time of active trade phase a continuous update of the active offers and the available capacities in accordance with the concluded deals is provided.

The European cross-border intraday initiative (XBID project) started as a joint initiative of the European power exchanges, together with the transmission system operators of 12 countries in Central and Western Europe, aiming at the establishment of a Single Intraday Coupling (SIDC), in accordance with the requirements of Regulation 2015/1222 (CACM).

Initially, the project included the European power exchanges: EMCO, EPEX SPOT, GME and OMIE and the European transmission operators: 50 Hertz, Amprion, APG, BritNed, Creos, Elia, Energinet, Fingrid, National Grid Interconnectors, RTE, Statnett, Svenska Kraftnät, Swissgrid, TenneT BV, TenneT GmbH и TransnetBW. Since the project started, the scope has significantly extended and at present all EU member are part of it, with the objective of completing the European target model. Several market integration waves are envisaged for the full intraday coupling:

- The first wave has been in actual operation since June 2018 and includes 14 countries: Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Latvia, Lithuania, the Netherlands, Norway, Portugal, Spain and Sweden;
- The second wave has been in actual operation since November 2019, and after its successful start, Bulgaria also has joined the single market together with other six member-states: Romania, Hungary, Croatia, Slovenia, the Czech Republic and Poland;
- The third wave of intraday market integration was successfully launched into actual operation on 21 Sep 2021 integrating the North Italian borders with Austria, France and Slovenia.
- The fourth wave of intraday market integration including the Greek-Bulgarian and Greek-Italian borders, as well as Slovakia with its borders is expected to start in the last quarter of 2022, most probably in December 2022.

After the introduction of the Bulgarian-Romanian border market coupling into the intraday timeframe in actual work on 19 November 2019 through LIP 15 local project as part of the second SIDC accession wave, ESO EAD became an operational party to the project by participating in the Management Committee of all TSOs and in all permanent and temporary working groups that are part thereof.

Applicable as of that date, the already registered IBEX EAD participants can sign cross-border electricity deals up to 60 minutes before the hour of delivery. Currently, preparations are underway for the introduction of 15-minute products on the Romanian-Bulgarian border, and according to preliminary data, this is expected to take place in June 2022 and no later than 31 Dec 2022, when the issued by EWRC derogation expires.

Following that step, the Bulgarian-Romanian border became the first Bulgarian border, where transmission capacity was allocated in intraday timeframe in implicit way within the single European market.

LIP 14 local project

The market coupling implementation of the Bulgarian-Greek border in the intraday timeframe through LIP 14 local project in which ESO EAD and IBEX EAD were involved, was initially planned to be completed with the third integration wave during the first trimester of 2021. Due to the lack of resources by the Greek NEMO and TSO (HEnEx and IPTO), the start was postponed for May 2021. Despite the project start delays, in the course of activities, HEnEx announced that it would not be able to keep the set deadline due to a delay in the implementation of the necessary functionalities in the local trade system. As a result of that delay announced by the Greek market operator, the Greek-Italian and the Greek-Bulgarian borders were excluded from the envisaged start. The launch of these borders is expected to be done during the last trimester of 2022, together with LIP 17 for Slovakia and its borders, as part of the fourth wave of SIDC market integration.

Time market units/products in the intraday local and cross-zonal market SEE CCR 15 min MTU Implementation Project

The project implementation is planned to be carried out on a regional basis, through regional projects, which should be organized on the basis of transmission capacity calculation regions. In the context of introducing the 15-minute products, the market algorithm development processes have been monitored in the way they ensure sufficient performance and sustainability during the functionality introduction, as well as the amendment of all rules, methodologies and documents related to the project implementation. The successful project finalization is closely related to the successful finalization of the project introducing a 15-minute imbalance settlement period, which is an obligation for transmission system operators under Regulation 2019/943.

Realized commercial electricity exchange according to schedules of trade participants

EXCHANGES		
Realized commercial electricity exchange according to schedules of trade participants		
Border/Direction	2020	2021
	MWh	MWh
Bulgaria - Romania	2 097 891	4 671 117
Romania - Bulgaria	2 970 778	1 658 555
Bulgaria - Serbia	1 114 212	2 210 124
Serbia - Bulgaria	1 831 222	771 887
Bulgaria – N Macedonia	2 479 655	2 912 277
N Macedonia - Bulgaria	561 711	229 562
Bulgaria - Greece	3 432 250	3 657 455
Greece - Bulgaria	302 606	562 620
Bulgaria - Turkey	930 454	94 534
Turkey - Bulgaria	979 534	1 560 125
Physical electricity exchange between Bulgarian EPS and EPS of neighbouring countries		
Border/Direction		
	2020	2021
Import	MWh	MWh
Physical border - total	3 706 833	1 857 126

Including:		
- Romania	3 117 571	1 485 974
- Serbia	242 704	39 392
- N Macedonia	6 241	8 204
- Turkey	325 261	259 218
- Greece	15 057	64 338
Export		
Physical border - total	7 115 361	10 634 410
Including:		
- Romania	816 062	2 330 182
- Serbia	788 610	2 708 246
- N Macedonia	1 939 810	2 561 358
- Turkey	1 695 245	1 063 456
- Greece	1 875 633	1 971 167
Physical exchange with distribution companies *		
	2020	2021
	MWh	MWh
Between ESO EAD and CEZ Distribution Bulgaria AD	9 229 441	9 366 852
Between ESO EAD and ERP Sever EAD	4 945 238	5 135 643
Between ESO EAD and EP Yug AD	8 041 237	8 466 282
Between ESO EAD and ERP Zlatni Piasaci AD	36 576	48 382
Between ESO EAD and NRIC	300 665	309 354

* *netted quantities*

3.1.7. Implementation of network codes and guidelines

In 2020 legislative changes were made to the Energy Act regarding cold reserve, according to which tenders for maintaining energy capacities in cold reserve were abolished. The legislative amendments regulated that cold reserve is to be assigned on the basis of a report from ESO EAD, only if necessary, to a condensing thermal power plant with the largest installed capacity in the country. In compliance with the adopted provisions, as of August 2020 until the full wholesale electricity market liberalization, but no later than 1 July 2021, ESO EAD has not organized cold reserve tenders. Subsequently, following an EA amendment of 02.02.2021, cold reserve was abolished, the reserve mechanism was brought into line with the requirements of Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation.

In compliance with European regulations and with the aim of ensuring full transparency and publicity, ESO EAD has developed tender rules and an electronic platform for conducting electronic tenders, according to Regulation 2017/1485, related to providing frequency containment and automatic and manual restoration reserves and exchange capacities.

Pursuant to Regulation 2016/1719, the Single Allocation Platform conducts the long-term auctions (annual and monthly) for transmission capacities as of 2019 on all European borders within the European Union according to the Harmonised allocation rules for long-term transmission rights. For Bulgaria, these are the borders with Romania and Greece.

By EWRC Decision dated 28.10.2020, ESO EAD was granted a derogation from the requirements of Art. 16, par. 8 of Regulation 2019/943 for a period of two years, which stipulate that transmission system operators shall not limit the volume of interconnection capacity to be made available to market participants as a means of solving congestion inside their own bidding zone or as a means of managing flows resulting from transactions internal to bidding zones. This requirement is met when a minimal threshold of 70 % of the transmission capacity is reached, respecting operational security limits of the network.

3.2. Competition and market functioning

3.2.1 Wholesale markets

Data on electricity generated in the period 2020 - 2021 has been summarized by years in the table below:

Electricity generated by energy sources	Installed capacity in MW		Electricity generated in MWh		Change in %
	2020	2021	2020	2021	
1. NPP	1 893	1 893	15 787 268	15 650 833	-0.86%
2. TPP lignite coal	3 585	3 585	12 235 473	16 076 443	31.39%
3. TPP black and brown coal	158	240	196 545	344 140	75.09%
4. TPP natural gas	1 126	1 044	1 568 609	2 136 970	36.23%
5. HPP, incl.	2 867	2 867	2 731 574	4 149 484	51.91%
5.1. PSHPP generation	1 386	1 386	820 664	816 829	-0.47%
5.2. PSHPP pumps *	932	932	730 017	383 221	-47.51%
6. RES, incl.:	683	725	1 275 634	1 230 356	-3.55%
6.1. WPP	358	358	769 638	739 923	-3.86%
6.2. PvPP	300	342	414 428	403 654	-2.60%
6.3. Biomass PP	25	25	91 568	86 779	-5.23%
Total: 1+2+3+4+5+6	10 313	10 354	33 795 104	39 588 226	17.14%

* the PSHPP pumps work represents electricity consumption and the electricity volumes under 5.2 are not included in the sum in item 5

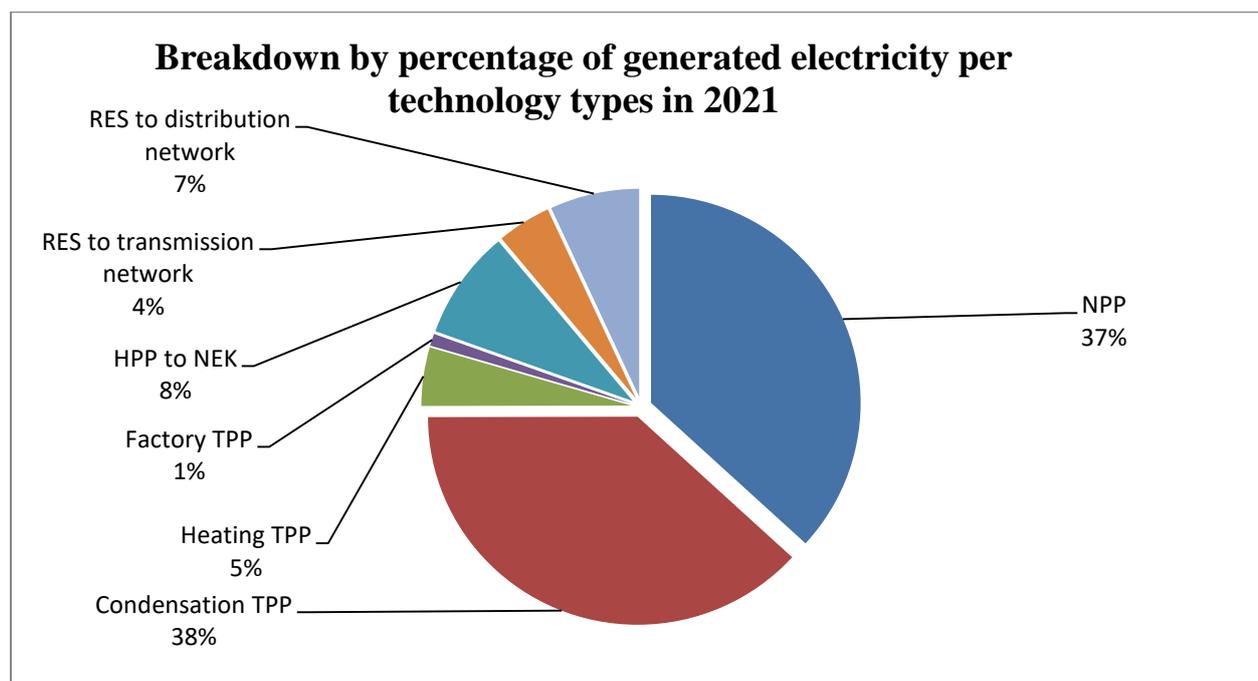
Data used for the installed capacities connected to the transmission network and the generated net electricity in 2020 and 2021 have been provided by ESO EAD. Total amount of electricity generated by those capacities was 39 588 226 MWh.

When analysing the differences between the generated electricity quantities of the plants connected to the electricity network for 2021, in comparison to 2020, the following trends can be observed: increase in the generation by TPP lignite coal (31.39%), respectively a decrease in the generation by NPP (0.86%), considerable increase in TPP black and brown coal (75.09%), TPP gas (36.23%) and decrease in RES generation (3.55%).

Table 2. Installed capacities connected to the electricity distribution grid and 2021 generated electricity.

	CEZ Distribution Bulgaria AD		EP Yug AD		ERP Sever EAD		ERP Zlatni Piasaci AD	
	Installed capacities	Generated electricity	Installed capacities	Generated electricity	Installed capacities	Generated electricity	Installed capacities	Generated electricity
Coal	40.61	30 441	-	-	-			
Natural gas		208 097	22.23	63 023	20.789	107 776		
HPP	224.56	640 574	95.18	271 509	14.78	32 793		
WPP	18.57	22 037	48.2	54 694	295.35	617 535		
PvPP	196.41	220 585	580.42	700 854	151.34	161 207	0.08	40
Other	13.65	55 102	28.62	108 691	216.54	47 240		
Total	493.8	1 176 836	774.65	1 198 771	698.80	966 551	0.08	40

Generated electricity total amount in Bulgaria in 2021 (42 521 087 MWh), distributed depending on the primary energy source and the technology used for generation, has been systemised in the next figure. Electricity generation largest share belonged to condensation TPP (38% or 16 226 675 MWh) and NPP (37% or 15 650 833 MWh) followed by RES (11% or 4 706 808 MWh).



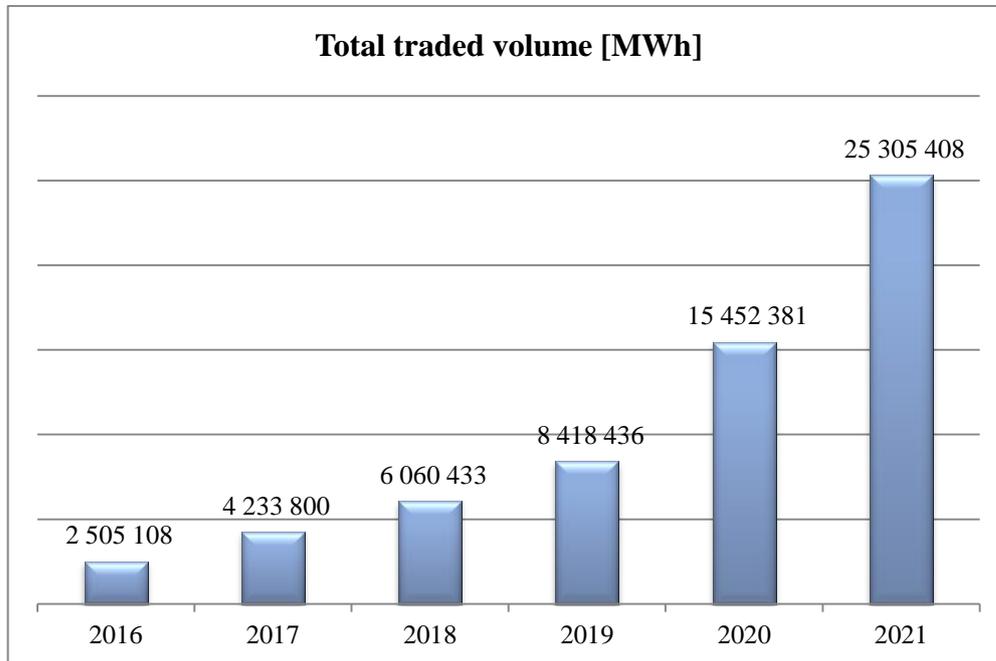
Monitoring the level of prices, the level of transparency, the level and effectiveness of market opening and competition

In connection with the obligation under Art.59, par.1, b"n" of Directive (EU) 2019/944, EWRC monitors the level of transparency, including wholesale prices, and ensures that electricity companies fulfill transparency obligations. In this regard, an analysis of the wholesale trade in electricity was made.

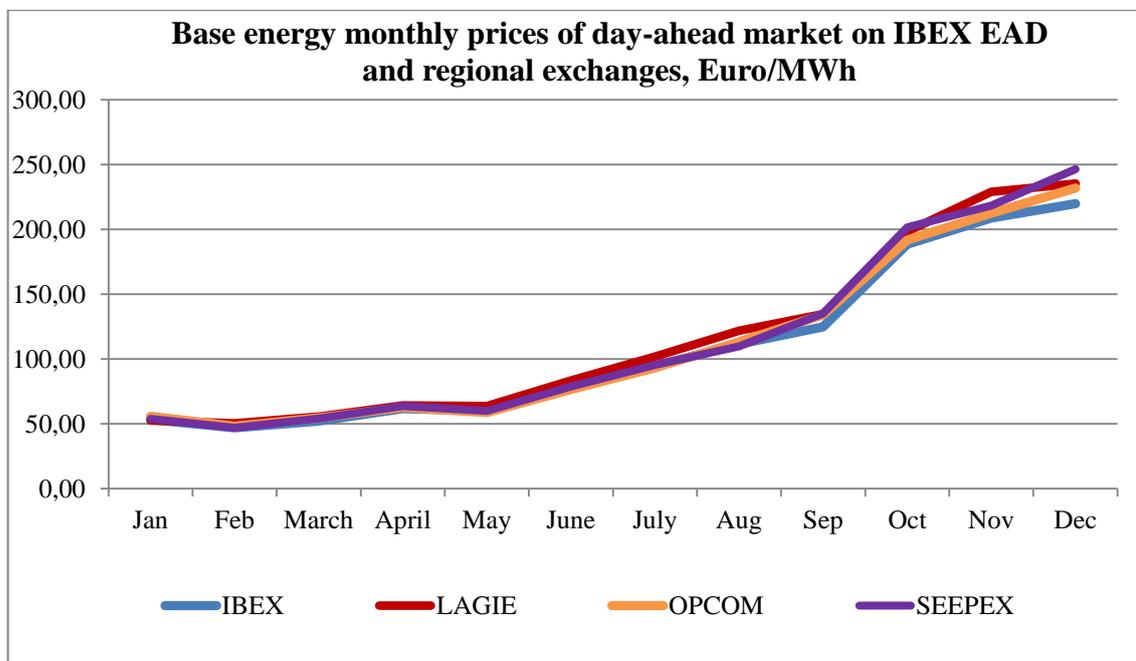
The main wholesale trade is carried out through the three segments of the Independent Bulgarian Energy Exchange EAD (IBEX EAD), namely day-ahead market, intraday market and centralized bilateral contracts market.

Day-ahead Market

In 2021 day-ahead market base energy traded volumes (Figure 2) increased by 9 853 026 MWh or by 63.76% compared to 2020. This was the biggest volume increase in absolute value as for the previous years the increase was by 7 033 945 MWh in 2020 compared to 2019, by 2 358 003 MWh in 2019 compared to 2018 and by 1 826 633 MWh in 2018 compared to 2017.



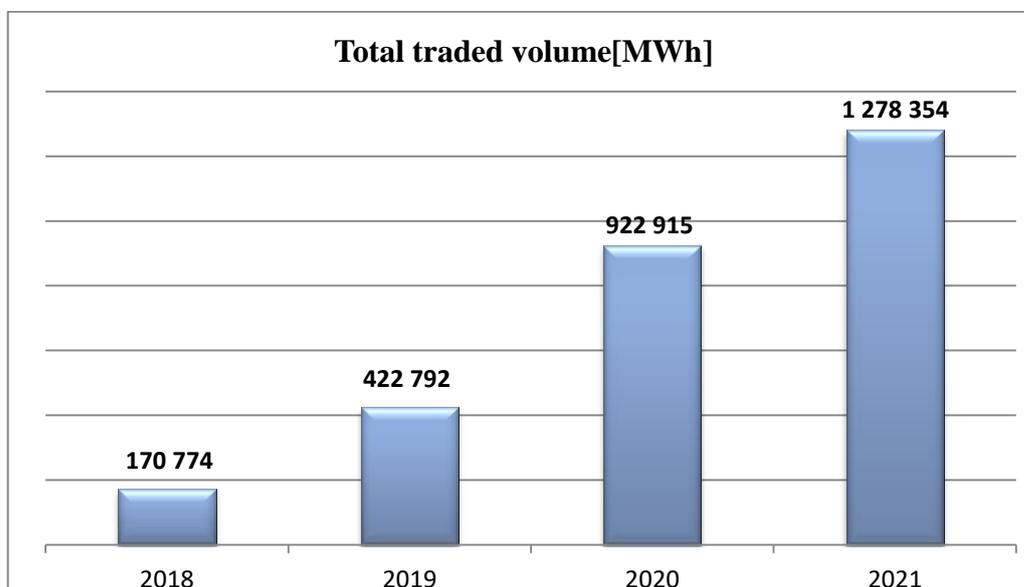
The next figure presents a comparative analysis of IBEX EAD and regional exchanges day-ahead market prices and traded volumes.



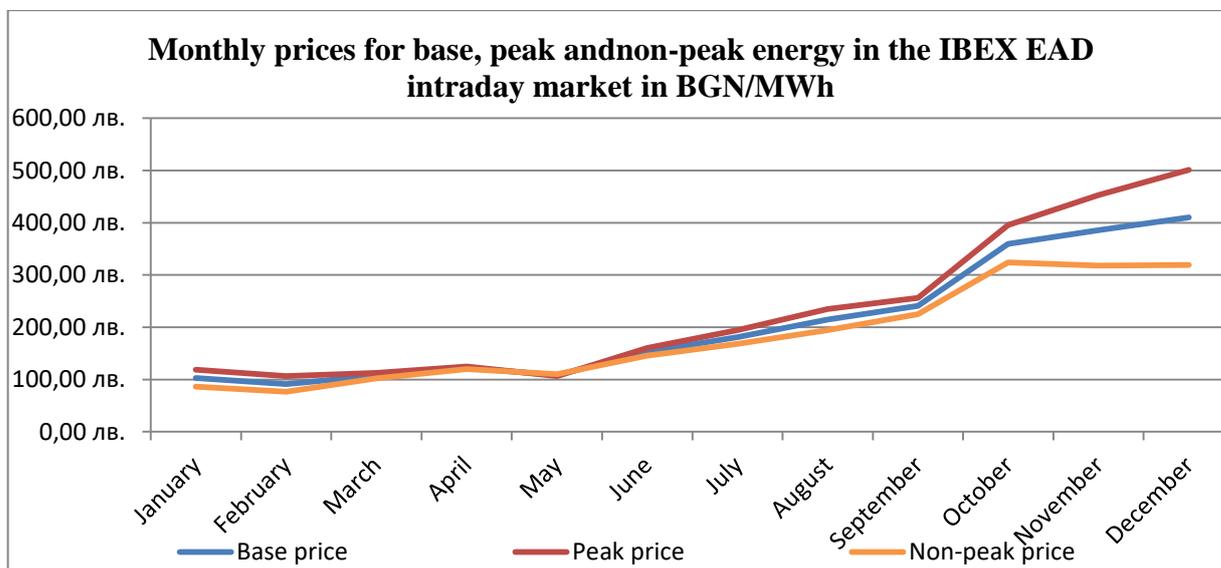
The comparative analysis includes the average monthly baseload prices Euro/MWh of 2021 day-ahead market traded volumes on the following regional power exchanges: IBEX (Bulgaria), LAGIE (Greece), OPCOM (Romania), SEEPEX (Serbia) and HUPX (Hungary).

Intraday Market

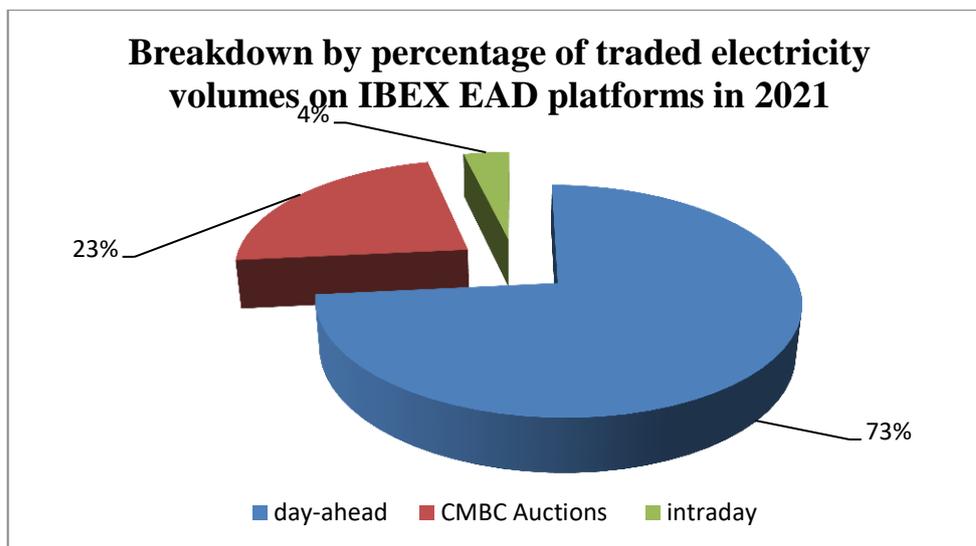
In 2021 the day-ahead market total traded volume was 1 278 354 MWh in comparison to 922 915 MWh in 2020, 422 792 MWh in 2019 and 170 774 MWh in 2018.



The graph below shows the average monthly prices of base, peak and off-peak energy traded on IBEX EAD intraday market.



The total amount of electricity traded on the IBEX EAD platforms in 2021 was 34 462 GWh: 15 452 MWh on the day-ahead market, 923 GWh on the intraday market, 7 377 GWh on Centralized Market for Bilateral Contracts (CMBC) "Auctions" and 335 GWh on Centralized Market for Bilateral Contracts (CMBC) „Continuous“. Quantities percentage is shown on the following figure:

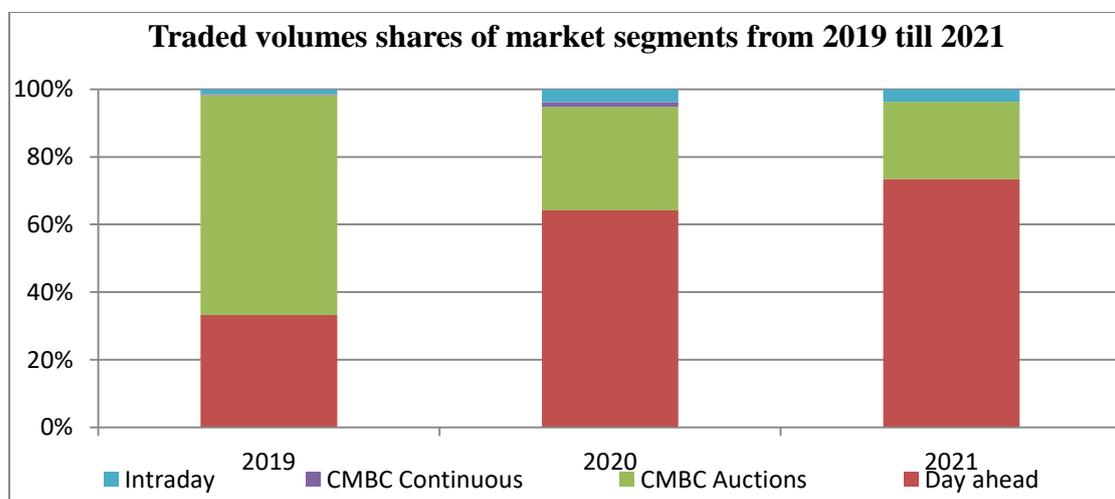


Summary data on the quantities realized in the IBEX EAD market segments for the period 2016-2021 are shown in the table below:

Traded volumes	Day-ahead MWh	CMBC Auctions MWh	CMBC Continuous MWh	Intraday MWh	Total GWh
2016	2 505 209	6 528	-	-	2 512
2017	4 232 922	3 987 019	41 640		8 262
2018	6 059 050	15 801 016	1 180 010	170 774	23 211
2019	8 390 723	16 446 889	73 369	356 839	25 268
2020	15 452 381	7 376 695	335 282	922 915	24 087
2021	25 305 408	7 878 642	-	1 278 354	34 462
Total	61 945 692	51 496 789	1 630 301	2 728 882	117 802

Sources: IBEX EAD

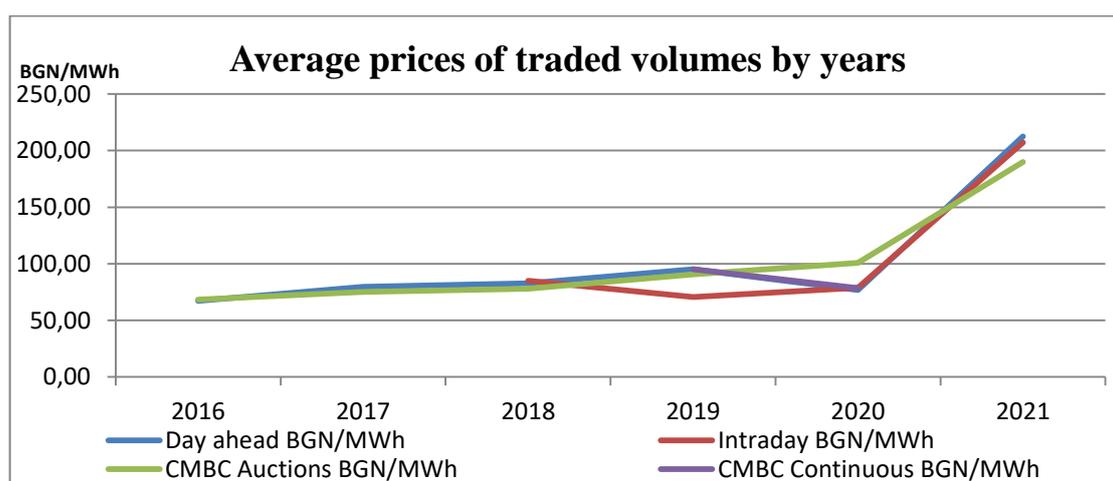
In the period 2016 - 2021 total traded volumes in IBEX EAD market segments increased, only in 2020, compared to 2019, there was a decrease of nearly 5%, which was due to significantly smaller electricity volumes traded on CMBC Continuous market segment.



The largest share of electricity volumes in 2021 was traded on the day-ahead market segment, which, compared to the previous 2020 year, increased by 63.76%. In 2021 volumes traded on the intraday market increased by 38.51% compared to 2020. As is evident from the graph above, in 2019 the largest share of energy was traded in the CMBC Continuous market segment, while in 2020 and 2021 this share was significantly smaller compared to the share of day-ahead market segment.

Average price of electricity traded volumes by years	Day-ahead BGN/MWh	Intraday BGN/MWh	CMBC Auctions BGN/MWh	CMBC Continuous BGN/MWh
2016	67.30	-	68.36	-
2017	79.56	-	75.25	67.73
2018	82.84	84.90	77.87	-
2019	95.13	70.66	90.66	95.06
2020	76.84	78.92	100.67	78.62
2021	212.60	207.10	190.00	-

Source: IBEX EAD



As can be seen from the above table and graph, the annual average prices of electricity traded volumes for the day-ahead market segment were increasing in the period 2016 - 2019 and in 2020 the price decreased by 19.23%, and in 2021 marks the highest risk with 176.68% compared to the previous year. In the intraday market the price has also seen a significant increase of 162.40% over 2020.

Summarized indicators that characterize the dynamics of the wholesale market development in the period 2016 - 2021 are indicated in the table below:

Wholesale Electricity Market Indicators	2016	2017	2018	2019	2020	2021
Total electricity production, GWh	45 040	45 430	46 531	39 476	36 799	42 521
Total number of active electricity traders	90	97	89	85	38	40

Total electricity consumption, excluding pumps, GWh	37 714	38 864	38 218	37 794	36 723	38 631
Import volume, GWh	3 754	3 425	3 118	4 026	3 707	1 857
Export volume, GWh	10 120	8 906	10 931	9 822	7 115	10 634

Statistical data on the day with highest electricity consumption in the country in the reported year:

Day with highest electricity consumption:	Electricity consumption (gross), GWh	Registered on:
2016	148	Thu, 21 Jan 2016
2017	164	Tue, 10 Jan 2017
2018	148	Tue, 27 Feb 2018
2019	150	Tue, 08 Jan 2019
2020	137	Tue, 21 Jan 2020
2021	143	Tue, 19 Jan 2021

3.2.2 Retail market

In the retail market, there are four operators of electricity distribution networks that are licensed to distribute electricity to customers connected to the distribution network at low and medium voltage level in the respective designated territories:

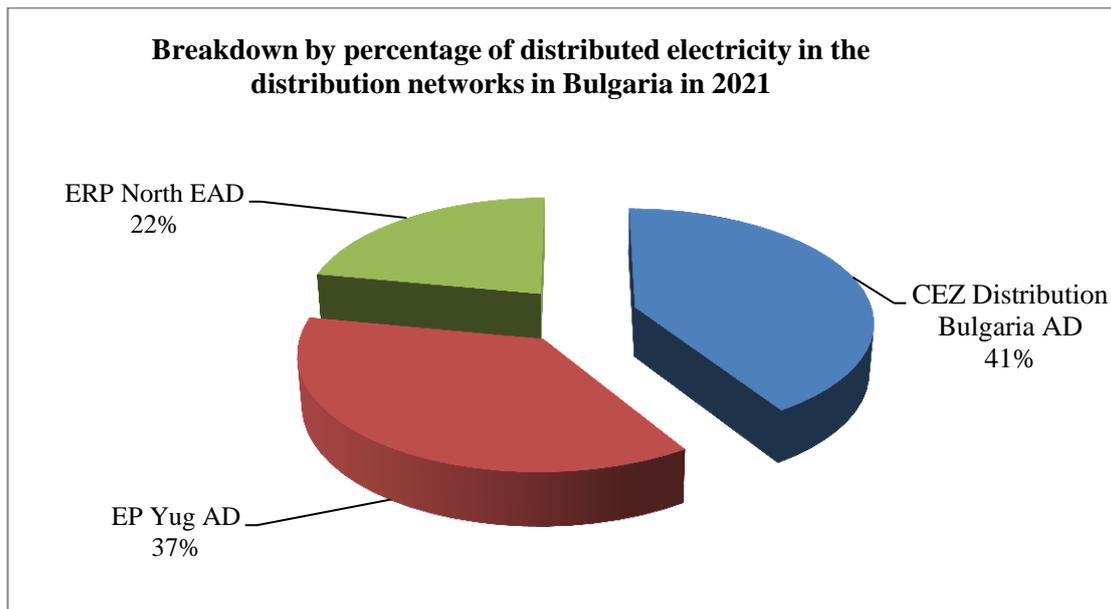
- CEZ Distribution Bulgaria AD operates on the territory of 10 districts in Western Bulgaria;
- Electrodistribution North AD operates on the territory of 9 districts in North Bulgaria;
- Elektrorazpredelenie Yug EAD operates on the territory of 9 districts in South Bulgaria;
- ERP Zlatni Piasaci AD has a limited geographical area of activity in Varna region.

The market consists of three groups of suppliers from supply point of view:

- Free market supplier - a trader/producer/exchange that supplies electricity to household and non-household customers at prices based on demand and supply;
- Supplier of last resort (SLR) – a supplier that guarantees the universal service provision as a last resort in accordance with a license obtained from EWRC. It has the obligation to supply electricity to customers connected to the distribution network that have not chosen an electricity trader or when the electricity trader they had chosen failed to provide the supply due to non-customer reasons. The SLR final selling prices are determined under EWRC methodology on electricity prices of a supplier of last resort;
- End supplier (ES) of electricity - supplies low voltage electricity to sites of household and non-household end consumers connected to the low voltage electricity distribution network at regulated prices determined by EWRC.

Energy distribution companies' market shares, as electricity volumes, distributed through their own networks, are calculated on the basis of reported by them data for 2021 by ESO EAD. The largest share of electricity transmission is traditionally for CEZ Distribution Bulgaria EAD with 41% or 9 366 852 MWh, the second one is Elektrorazpredelenie Yug EAD with 37% or 8 466 282 MWh

and third is Electrodistribution North AD with 22% or 5 135 643 MWh. The graphic distribution is shown on the figure below:



With the last amendments in the Energy Act, promulgated in 57/SG of 26 June 2020, as of 1 October 2020, all non-household customers, including sites connected to the energy distribution network at low-voltage level, shall buy electricity for their needs at freely negotiated prices.

For the completion of as smooth as possible transition to the liberalised energy market and to minimize the risk of ceasing activity due to power supply failure, the Energy Act envisages the possibility for each non-household customer connected at low-voltage, that has not chosen a supplier till 30 September 2020, to be supplied by its current end-supplier, but in its capacity as a trader. In this case, the supply shall be executed through a draft contract approved by EWRC and with a term of validity as of 1 October 2020 until 30 June 2021 in accordance with the EA requirements.

From a demand perspective, the retail market consists of two segments: household customers and non-household customers. Total number of customers connected to distribution companies in 2021 was 5 219 020, of which household – 4 587 587. Total number of customers with an end supplier was 4 581 982, and total number of customers in the free market, including with SLR, was 610 464.

Household customers

Household consumer empowerment indicators

Consumption in the household customers market decreased in 2021 compared to 2020 by 13.53%. The reported decrease shows that a significant number of small business users have already concluded a contract with an electricity trader and purchase the volumes they need on the organized exchange market.

The number of household customers increased from 4 451 408 in 2016 to 4 586 448 in 2021. The number of household customers that changed supplier was insignificant.

Retail market indicators (households)	2016	2017	2018	2019.	2020	2021
Electricity consumption, MWh	10 736 256	11 068 228	10 965 494	14 729 883	13 979 423	12 088 565
Total number of electricity household customers	4 450 374	4 479 397	4 495 926	4 513 355	4 544 739	4 586 448
Number of customers at regulated tariffs	4 449 156	4 476 283	4 493 660	4 511 737	4 541 659	4 581 982
Number of customers supplied by Supplier of last resort (SLR)	0	618	213	114	1 233	4 644
Number of working days between the bill payment notification and the interruption in cases of actual non-payment	3 to 40	3 to 40	3 to 40	11 271	3 to 40	3 to 40

Non-household customers

The table below shows the total number of non-household customers connected to a low voltage network, as well as the number of customers, who switched their supplier with a supplier in the free market.

Индикатори на пазара на дребно (небитови клиенти)	2016	2017	2018	2019	2020	2021
Number of customers	496 007	605 990	611 588	624 910	629 863	631 433
Number of customers who switched their supplier	64 707	86 055	101 932	79 290	20 754	23 920
Active traders	48	45	46	45	40	40
Average time for switching supplier (days)	18	18	18	18	18	18

3.2.3 Consumer protection and dispute settlement

The terms and conditions of complaints' filing and handling are regulated by EA and by the Ordinance on licensing the activities in the energy sector. EWRC handles complaints of: networks and facilities users against transmission and distribution network operators, extraction companies, natural gas storage facilities operators and LNG operators, related to the way these entities perform their duties under EA; customers against electricity and natural gas suppliers, including end suppliers regarding their duties' performance under EA; as well as licensees against other licensees regarding their duties' performance under EA.

Within two months of filing a complaint, EWRC may assist an amicable dispute settlement. The term may be extended by another two months if the nature of the dispute requires collecting additional data and information by EWRC. The procedure is voluntary and confidential. Under the amicable disputes' settlement EWRC does not make a ruling/decision and the procedure ends with an agreement.

In case no amicable settlement has been achieved or the parties reject amicable settlement, EWRC shall decide on the complaint within two months after receiving it. That period may be extended with another two months if the character of the dispute requires gathering of additional data and information by EWRC. With the agreement of the appellant, the extended period may be

extended with two more months. When EWRC finds a complaint being justified, it issues a decision with binding guidelines on the implementation of the law. EWRC decisions are subject to appeal before the Administrative Court - Sofia City within a 14-day period of their notification.

In 2021 total number of electricity complaints filed in EWRC was 1 203; 1 093 of them were against licensed companies in the energy sector and under the provisions of art.22, para.1 of EA, administrative proceedings have been started.

Analysis of the administrative proceedings showed that the greatest number of complaints was against CEZ Distribution Bulgaria AD (new name, ERM Zapad AD) and CEZ Electro Bulgaria AD (new name, Electrohold Sales AD). Next were complaints against Electrodistribution North EAD and ENERGO-PRO Sales AD, followed by Elektrorazpredelenie Yug AD and EVN Bulgaria Elektrosnabdiavane EAD. Last in number of customers' complaints were Elektrorazpredelenie Zlatni Piasatsi AD and ESP Zlatni Piasatsi OOD. Complaints against enterprises licensed for electricity trade activities mainly concern changes in the contractual relations between the parties.

In 2021, 18 complaints were filed against ESO EAD and they included objections mainly against refusals or non-compliance with deadlines by the company to prepare and provide an opinion on conditions of connecting sites of electricity producers to the transmission and distribution networks. No complaints against NEK EAD have been registered.

In 2021, EWRC received 571 complaints from household customers against licensed electricity sector enterprises.

In EA, Chapter Three: Regulation of the activities in the Energy Sector, Section VI: Measures for Protection of Energy Service Clients of the Energy Act regulates the protection measures for power consumers that involve also:

- regulated mandatory content of the contracts signed with energy services customers;
- information provided by the energy enterprises that are contracting parties in the contracts with energy customers;
- energy enterprises draft and present for approval to EWRC rules on their work with consumers of energy services;
- energy enterprises, supplying energy, shall establish informational centres for consumers of energy services, as well as information on the work with them;
- energy enterprises, providing services of public interest shall determine special procedures for providing vulnerable consumers with information, related to consumption and supply termination to vulnerable consumers in the general conditions of supply and use of networks and in the rules on work with consumers of energy services;
- end suppliers shall inform customers, together with the last month invoice of every semester, when the electricity or natural gas metered consumption of the end customers in the said semester was higher by more than 50% of the metered consumption in the respective semester of the preceding calendar year;
- the customer may request from the electricity distribution network operator to carry out metrological expert check of commercial measuring device;
- where by initiative of the end supplier the electricity or natural gas supply to the customer is to be terminated, the end supplier shall be obliged to notify the customer thereof by a method chosen by the latter, not later than three days before the date of supplies termination. If the customer has not stated a specific method of notification, notification would be done by a method at end supplier's option.

In fulfilment of its powers, EWRC monitors the implementation of the regulated legal measures on energy services consumers' protection.

As per art.59, para 1(t) of the Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU, the regulatory authority shall have the duty to ensure non-discriminatory access to customer consumption data, the provision, for optional use, of an easily understandable harmonised format at national level for consumption data, and prompt access for all customers to such data pursuant to Articles 23 and 24 of the Directive.

As per art.38b, para.1, items 3 and 8 of EA, energy enterprises - contracting parties - shall provide for their consumers of energy services information on: actual quantities consumed and provided service value in accordance with the agreed metering frequency at no additional cost of that service; the conditions for providing electronic billing information and electronic bills.

In accordance with art.38b, para.2 of EA, the energy supplier shall provide to its customers a wide selection of payment methods, including advance payment systems, which shall be fair and adequately representing the potential consumption.

Art.38b, para.3 of EA stipulates that the energy supplier shall provide to another energy supplier information of a household customer's consumption, if so provided in an explicit agreement between the customer and the energy supplier.

These provisions guarantee customers' access to data on energy consumption and their provision and use in an easily understandable format.

4. NATURAL GAS MARKET

4.1. Network regulation

In exercising its regulatory powers, EWRC is guided by the following basic principles: development of competitive and well-functioning regional markets within the European Union; preventing restriction or distortion of competition on the energy market; creating incentives for competitive energy market development, where the conditions so permit; creating incentives for effective development of secure, reliable and efficient networks in accordance with the customers interests. EWRC monitors gas networks development for the benefit of all participants, which will ensure sufficient and available capacity for all, monitors prevention and distortion of market competition and its effective functioning, monitors the degree and efficiency of natural gas market opening. EWRC monitors the security of supply, ensuring a balance between natural gas supply and demand on the national market, the level of expected future consumption and the estimated additional capacity under planning or construction, and the quality and level of networks maintenance and overcoming the shortage of suppliers or traders.

4.1.1. Network and LNG tariffs for connection and access

The prices for network connection, access and transmission of natural gas through transmission and/or distribution networks shall be subject to regulation by EWRC, except in the cases when the Regulator at its discretion approves a methodology determining the price for access and transmission through the transmission network. EWRC regulates and determines the terms and

conditions of price formation for connection to gas distribution and transmission networks. Tariff regulation is carried out in compliance with EA, ONGRP and the Methodology for determining prices for access and transmission of natural gas through the gas transmission networks, owned by Bulgartransgaz EAD (the Methodology). On the basis of the Methodology, EWRC approved to Bulgartransgaz EAD multipliers, seasonal factors (seasonal multipliers) and discounts for determining the prices for access of short-term capacity products for the period 1 October 2021 – 30 September 2022.

According to the Methodology, the tariff structure of the prices for access and transmission of natural gas through the national gas transmission system shall be determined by the operator. Bulgartransgaz EAD has set prices for access and transmission through the gas transmission networks for the gas year 1.10.2021 - 30.09.2022 on the basis of the revenue requirements and pricing elements approved by EWRC Decisions № HFTI-1 of 2.10.2020 and № M-1 of 1.06.2021. Access and transmission prices are published on Bulgartransgaz EAD website - https://www.bulgartransgaz.bg/files/useruploads/files/prozrachnost-tarifi/TAR%20Period%202021_2022/Prices_2021-2022_bg.pdf

EWRC regulates prices of natural gas access and storage in storage facilities in compliance with EA, the *Ordinance on natural gas prices regulation* (ONGPR) and the Guidelines on pricing natural gas access and storage in storage facilities, applying “rate of return on capital” regulation adopted by EWRC. Bulgartransgaz EAD is the operator of the only underground gas storage Chiren (Chiren UGS). The UGS main purpose is to cover seasonal irregularities in consumption and guarantee security of natural gas supply. The prices for natural gas access and storage ensure compliance with the principle of non-discrimination to all network users, while at the same time taking into account the specific characteristics of the national market.

The prices of the gas distribution companies approved by EWRC include different tariff structures by customer groups, reflecting the allocated annual revenue requirements needed for the service provision for each group based on submitted service value study.

4.1.2. Balancing

Natural gas market balancing is performed on the basis of the approved by EWRC *Natural Gas Trading Rules, Natural Gas Market Balancing Rules* and a *Daily Imbalance and Neutrality Charge Calculation Methodology (Imbalance Methodology)*.

Natural Gas Market Balancing Rules set a balancing regime in accordance with Commission Regulation (EU) № 312/2014 of 26 March 2014 establishing a Network Code on Gas Balancing of Transmission Networks (Regulation (EU) № 312/2014). Conditions have been created for the transmission system operator and all market participants to conclude transactions for short-term standardized products through a natural gas trading platform. The possibility to offer natural gas for purchase and sale through market mechanisms was enabled, so that network users can balance their balance portfolios efficiently and that the transmission system operator can use flexible natural gas products in balancing the transmission network aiming to increase natural gas market liquidity and transparency in transactions with short-term products. Imbalance methodology ensures non-discriminatory imbalance charges formation for transmission system users, creating conditions for efficient management of their balance portfolios, as well as for their responsible balancing of incoming and outgoing quantities of natural gas. Full compliance with Regulation (EU) № 312/2014 has also been achieved, in particular with the imbalance charge and the neutrality charge requirements and the credit risk management mechanisms. Clear conditions for imbalance and neutrality charges calculation have been created, both for transmission system operator and for all market participants. Network users are able to balance their balance portfolios efficiently, thus

creating preconditions for disciplining gas transmission network users. Implementation of the methodology aims to increase short-term gas market liquidity on the territory of the country through Transparent and non-discriminatory rules as well as transparent imbalance charges, reflecting the actual balancing costs shall increase the short-term gas market liquidity in the country.

4.1.3. Cross-border issues

In 2021 EWRC approved an updated list of important interconnection points of the Bulgarian gas transmission system of Bulgartransgaz EAD with the gas transmission systems of Romania, Greece, Serbia, North Macedonia and Turkey, incl. for Chiren UGS entry-exit point. Information on these important transmission network points shall be publicly announced and in accordance with Art. 18, paragraph 4 of Regulation (EC) № 715/2009 approved by the regulatory authority following consultation with network users. Publicly announced information refers to technical, contractual and available capacity in numerical terms for all relevant important points, including entry and exit points, on a regular and periodic basis in a standardized and user-friendly manner.

The Energy and Water Regulatory Commission and the Energy Regulatory Authority of Greece (RAE) jointly analysed the investment request by Bulgartransgaz EAD to EWRC regarding cross-border cost allocation for project of common interest “Chiren UGS Expansion, Bulgaria”. Bulgartransgaz EAD investment request has been analysed based on criteria under Art.12(4) and (5) of Regulation (EU) № 347/2013 of the European Parliament and of the Council of 17 April 2013 on guidelines for trans-European energy infrastructure and ACER Recommendation № 05/2015. NRAs analysis and conclusions have been reflected in the agreement between the regulatory authorities on project investment costs allocation. An Agreement was adopted between EWRC and RAE on cross-border cost allocation.

By EWRC Decision № JI-573 of 4.11.2021, ICGB AD was granted a license for natural gas transmission for a period of 35 years, permitting the start of the licensing activity under stated conditions for energy site construction – Gas Interconnection Greece-Bulgaria (IGB), incl. deadlines for energy site construction and launching the licensing activity. EWRC also approved ICGB AD Rules on work with energy service consumers as an annex to the licence.

IGB Interconnector is a major infrastructure project whose implementation will change the energy map in the region and Europe. New traders will enter the Bulgarian gas market after the gas pipeline commissioning. At the start of commercial operation, the remaining unreserved capacity will also be offered, which will create additional potential and opportunities for more market participants to enter the market.

IGB Interconnector, which has an initial capacity of up to 3 bcm that could be upgraded to 5.5 bcm, will have a major role in diversification of supply and new transit flows through Bulgaria. It is designed as a continuation of the Azerbaijani gas main route in east-west direction from the large offshore field Shah Deniz to EU. The project commissioning, in synergy with the Trans-Adriatic Pipeline (TAP), is of strategic importance. Through IGB our country will receive the agreed 1 bcm/year Azerbaijani gas from Phase 2 of Shah Deniz field. The European Union has given strong support to the Greece-Bulgaria interconnector, providing grants for just over a third of the pipeline value. Bulgaria is also committed to a EUR 110 million state guarantee from the European Investment Bank.

4.1.4. Implementation of the Network Codes and Guidelines

- **Capacity Allocation Mechanisms NC (CAM NC)**

Pursuant to Commission Regulation (EU) 2017/459, Bulgartransgaz EAD has introduced an electronic capacity booking platform - Regional Booking Platform (RBP). On the RBP platform network users book capacity at entry and exit gas transmission network points, using standard capacity allocation mechanisms as required by CAM NC. Registered network users have the right to book and use capacity products in the national gas transmission network. The procedures for allocating annual, quarterly, monthly, daily and intraday capacity products shall be carried out according to the timetables set out in the Capacity Auction Calendar published by ENTSO-G.

Bulgartransgaz EAD cooperates with the adjacent transmission network operators in order to coordinate the maintenance (network repairs) in accordance with Art.4 of Regulation (EU) 2017/459. The Bulgarian TSO regularly exchanges information with the adjacent transmission network operators as per Art.7 of Regulation (EU) 2017/459 on the basis of the Interconnection Agreements concluded. Firm capacity products, announced by Bulgartransgaz EAD, go through a bundling procedure under Art.19, §1 of Regulation (EU) 2017/459. If impossible to ensure the bundling at RBP of firm capacity products, as well as in case of differences between the technical and bundled capacities, these capacities shall be offered as unbundled capacity products (providing capacity at the respective interconnection point only in Bulgartransgaz EAD gas transmission network).

- **Balancing NC (BAL NC)**

In compliance with Regulation (EU) № 312/2014, the Bulgarian TSO has set the trading platform of Balkan Gas Hub EAD for trade in natural gas as complying with regulation requirements and criteria. EWRC has approved the Balkan Gas Hub EAD Trading Platform and has designated the company as an operator of the trading platform. Trading on the platform shall be carried out on an anonymous basis, in accordance with the provisions of Regulation (EU) № 312/2014. Through the platform, trading participants may post and accept, as well as revise and withdraw, bids and offers for gas purchase and sale in order to meet short term fluctuations in gas demand or supply, under the applicable rules of the trading platform, on which the transmission system operator trades for balancing actions. The trading platform offers short-term standardized products intraday and day-ahead - title, locational, temporal and temporal-locational. The platform complies with the requirements of Regulation (EU) № 312/2014 regarding the transaction notification content, the continuous trading regime for short-term standardized products, as well as the types of such products, the criteria to be met by the trading platform for providing trading participants with sufficient information to confirm the transaction after its conclusion, as well as to submit transaction notifications to the transmission system operator and to provide information on the change of the marginal purchase price and the marginal selling price after each transaction.

Marginal purchase and sale prices applicable for the purposes of determining the imbalance charge by the transmission system operator shall be calculated in accordance with the terms and conditions of the Daily Imbalance and Neutrality Charge Calculation Methodology, and shall be published by the transmission system operator. In 2021 the small adjustment to the natural gas balancing price was 8%.

For the purposes of balancing the natural gas market, the TSO introduced a Commercial Dispatching Platform (CDP), which assumes the functions of a virtual trading point (VTP). It has been operational since 1 January 2017. Network users and traders have access to CDP with individual credentials where they can submit their bids, transaction notifications and receive data on their imbalances every hour, as well as daily and monthly reports. Trade notifications are submitted directly to the CDP. A re-nomination procedure cycle has been introduced in accordance with Regulation (EU) № 312/2014 at both interconnection points, as well as at all entry and exit points in the country.

The Bulgarian TSO provides network users with information under Art.32 of Regulation (EU) № 312/2014 on the general state of the transmission network in accordance with point 3.4 (5) of Annex I to Regulation (EC) № 715/2009 on its website. Information with real data and forecast of the linepack until the end of the gas day shall also be provided and this information shall be updated every hour. The gas transmission operator shall provide information on balancing actions, incl. information on the gas purchased and the corresponding costs. Bulgartransgaz EAD has chosen Regulation (EU) № 312/2014 “Option 1” of information provision scheme where the information on daily and non-daily measured outflow is based on the distribution of measured flows during the gas day, and this information is provided to users individually through the CDP platform.

Bulgartransgaz EAD procures balancing services carried out on a market basis, through a transparent and non-discriminatory public tender procedure according to the Natural Gas Market Balancing Rules approved by EWRC, concluding gas supply contracts at the gas transmission system entry point with a maximum duration of one year. The contracts shall be concluded after a transparent, non-discriminatory and market-based procedure and in accordance with the maximum amount of possible natural gas imbalances in the gas transmission network. Purchased gas pursuant to Art.8 (b) (a) of Regulation (EU) № 312/2014 shall be stored in the TSO’s gas storage facility – Chiren UGS and shall be used (extracted and injected) when necessary, depending on the cumulative imbalances of network users.

- **Interoperability and Data Exchange NC**

In compliance with Commission Regulation (EU) № 703/2015 of 30 April 2015 establishing a network code on interoperability and data exchange rules, Bulgartransgaz EAD has signed Interconnection agreements (IA) with the Romanian gas TSO TRANSGAZ SA and Greek gas TSO DESFA SA for the interconnection points Negru Voda 1/Kardam IP, Negru Voda 2,3/Kardam IP, Ruse/Giurgiu IP and Kulata/Sidirokastron IP. Essential parts of IA are common nomination and re-nomination procedures for booking capacity products, as well as a default nomination rule establishment.

- **Tariff (TAR NC)**

Regulation (EU) 2017/460 provides for the obligation to carry out consultations on the proposed reference price methodology. Pursuant to Article 6 (1) of Regulation (EU) 2017/460, the reference price methodology shall be set or approved by NRA as referred to in Article 27 of Regulation (EU) 2017/460. The reference price methodology to be applied shall depend on the findings of the periodic consultations carried out in accordance with Article 26 by TSO or NRA, as decided by NRA.

In connection with the above, by Decision № PTIII-1 of 01.12.2017, pursuant to Article 6 (1), Article 26 (1) and Article 30 of Regulation (EU) 2017/460, EWRC has designated Bulgartransgaz EAD, in its capacity as a gas transmission system operator, to conduct consultations under Article 26 of Regulation (EU) 2017/460, as well as to publish before the tariff period beginning the information under Art. 30 and the conditions set in the Regulation. Pursuant to Regulation (EU) 2017/460 and EWRC decision, Bulgartransgaz EAD held a consultation on the proposed methodology for reference price, as well as the related data, justifications and elements according to Art.26 of Regulation (EU) 2017/460.

In this regard, the Agency for the Cooperation of Energy Regulators (ACER) has prepared a report of 16 December 2020, containing an analysis of the consultation paper on gas transmission tariff structure for Bulgaria, addressed to EWRC and Bulgartransgaz EAD. In view of the report

conclusions and recommendations, there was a need for amendments to Reference Price Methodology after a new consultation on the whole required information under Art.26 of Regulation (EU) 2017/460. Only after conducting that new consultation, EWRC could adopt a decision under Art.27 of Regulation (EU) 2017/460 on the basis of an updated ACER analysis. Bulgartransgaz EAD has been informed of the need for a new consultation and in this regard the company has provided an analysis of the data in the consultation carried out in connection with ACER's report, which has provided additional justifications and arguments on its conclusions. In view of the above, EWRC has requested from Bulgartransgaz EAD to submit an updated and supplemented consultation document under Art. 26 of Regulation (EU) 2017/460 in accordance with ACER recommendations, an updated and supplemented simplified tariff model, as well as a proposal for the reference price setting rules according to Regulation (EU) 2017/460, which should be separated in a different section of the Methodology. Bulgartransgaz EAD has submitted draft amendment to the Methodology, but has not provided the other requested data and documents, given the company's position that there was no reason to conduct a second two-month consultation under Art.26 of Regulation (EU) 2017/460. In this regard, EWRC has requested from Bulgartransgaz EAD to take action to supplement the consultation document with all the necessary systematic information under Art. 26 of Regulation (EU) 2017/460, as well as with data, detailed justifications and arguments in accordance with ACER's conclusions and recommendations, with a view to conducting a new consultation by EWRC under Art.26 and adopting EWRC decision under Art.27 of the Regulation.

4.2. Competition and market operation

In 2021, key natural gas market participants in the country were:

- **Bulgartransgaz EAD** – combined operator, performing gas transmission and gas storage activities;
- **Bulgargaz EAD** – public provider, ensuring gas supplies to end suppliers and to entities holding a license for heat production and transmission at prices regulated by EWRC. The company also holds a license for the activity of natural gas trading issued by EWRC;
- **Gas traders** – concluding gas supply transactions with the public provider, end suppliers, customers, other gas traders, production companies, gas storage undertakings and with gas transmission and distribution network operators;
- **Gas distribution companies** – performing activities “natural gas distribution” and “natural gas supply by end suppliers and delivering natural gas to customers connected to the distribution networks in the respective licensed territories;
- **Non-household customers** connected to the gas transmission network;
- **Market makers** – entities that have concluded an agreement with the natural gas exchange market operator for natural gas demand and supply with the purpose to provide liquidity on the natural gas exchange market and forming price signals;
- **Liquidity providers** – entities that have concluded an agreement with the natural gas exchange market operator for demand and supply of natural gas with the purpose to provide liquidity on the natural gas exchange market.

The public provider Bulgargaz EAD sells natural gas to end suppliers and customers connected to the gas transmission network of Bulgartransgaz EAD. Bulgargaz EAD's total market share in the local market, at regulated and freely negotiated prices, is about 87%. Therefore, the company is a main natural gas supplier in the Republic of Bulgaria according to Art.49 of Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas. This factual situation has a significant impact on the free price negotiation at market conditions.

The total length of Bulgartransgaz EAD gas transmission network as of the end of 2021 was 3276 km. In 2021, no new gas transmission network was built. The newly built facilities in 2021 are:

CS Nova Provia and cleaning facilities (launch-receive chambers) for gas pipeline branch Burgas. The investments made by the company in this regard amounted to BGN 223 552 000.

EWRC shall approve to Bulgartransgaz EAD a ten-year network development plan of the transmission network and shall monitor and control its implementation. In drawing up the 10-year plan, the TSO shall take into account the information available on upcoming changes in production, supply, consumption and exchange with other countries, investment plans for regional networks and networks within EU, as well as natural gas storage facilities investment plans. The Regulator shall consult all current or potential network users on the 10-year network development plan of the transmission network in an open and transparent manner.

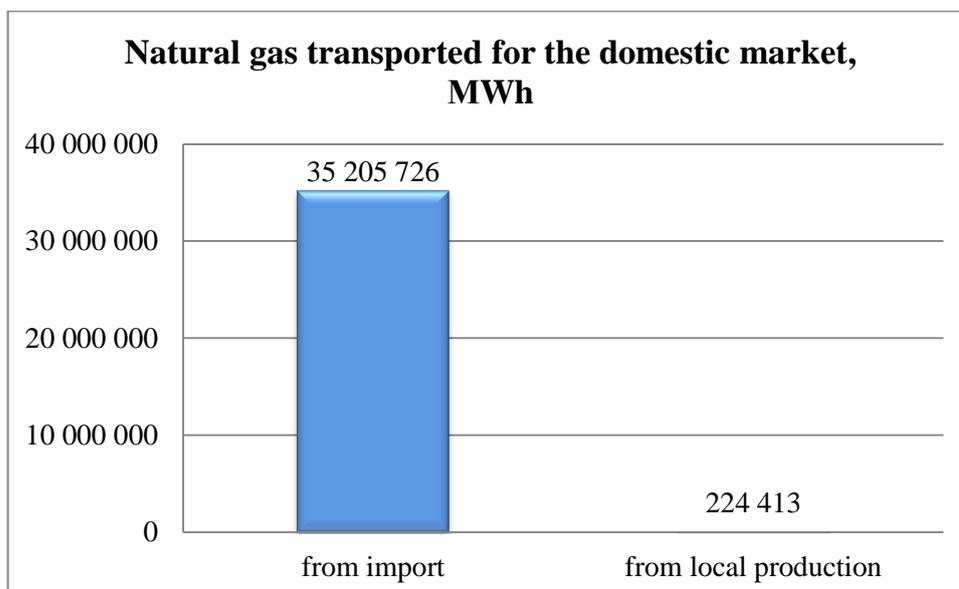
The structure of gas transmission network users, who carried out transmission in 2021 was as follows:

- public provider;
- three end suppliers;
- three non-household customers;
- thirty-two natural gas traders.

In 2021, the total natural gas quantities from imports and local production, transported to end customers by the TSO on the territory of the country and intended for export, were 137 208 462 MWh.

Natural gas quantities transported by the TSO in 2021 from imports intended for export were 101 778 323 MWh. No natural gas quantities from local production have been transported for export.

The quantities of imported and locally produced natural gas transported by Bulgartransgaz EAD for the domestic market were 35 430 139 MWh.



In 2021 Bulgartransgaz EAD sold 296 339 MWh, respectively purchased 115 395 MWh natural gas for balancing on the national gas transmission network (NGTN) and the gas transmission network for transit transmission (GTNTT) at a Virtual Trading Point (VTP).

The TSO shall provide cross-border capacity with a view to integrate the European gas transmission infrastructure and to ensure the security of gas supply.

Indicators	2018	2019	2020	2021
Maximum gas daily consumption (TWh/day)	0.146	0.166	0.299	0.158
Pipeline entry capacity in TWh/y	319.01	333.245	549.793	1 258.194
Pipeline exit capacity (exports) in TWh/y	242.725	229.585	382.056	783.455
Extension of TSO network (km)	23	11	478.6	0

Currently there is only one underground gas storage facility in Bulgaria – Chiren UGS, which has 24 exploitation wells, a compressor station with a total installed capacity of 10 MW and other technological facilities needed to ensure the injection, withdrawal and quality of stored natural gas. Chiren UGS is operated by Bulgartransgaz EAD. The investments made in the storage facility in 2021 amounted to BGN 2 175 000.

The technological process related to the operation of “natural gas storage” service is seasonal (cyclical) and consists of extraction and injection of gas from/into the underground gas storage.

Through the quantities of natural gas stored at Chiren UGS, seasonal fluctuations in supply and consumption in the country are compensated. The UGS has essential role to ensure security of gas supply in the country, provision of gas for balancing, as well as to maintain gas transmission system security and stability. Chiren UGS expansion is an important prerequisite for the implementation of the concept of establishing a gas distribution centre in Bulgaria. UGS storage capacity is approximately 5 813 500 MWh. The withdrawal capacity is between 5 285 MWh/d up to 40 377 MWh/d (0.5 to 3.82 mcm/d at 10.57 MWh/1000 m³). The injection capacity is between 5 285 MWh/d up to 33 824 MWh/d (0.5 ÷ 3.2 mcm/d at 10.57 MWh/1000 m³).

4.2.1. Wholesale markets

Natural gas supply on the territory of the Republic of Bulgaria is carried out through a gas transmission network owned by Bulgartransgaz EAD and through gas distribution networks (GDN), owned by the relevant gas distribution companies, for end customers.

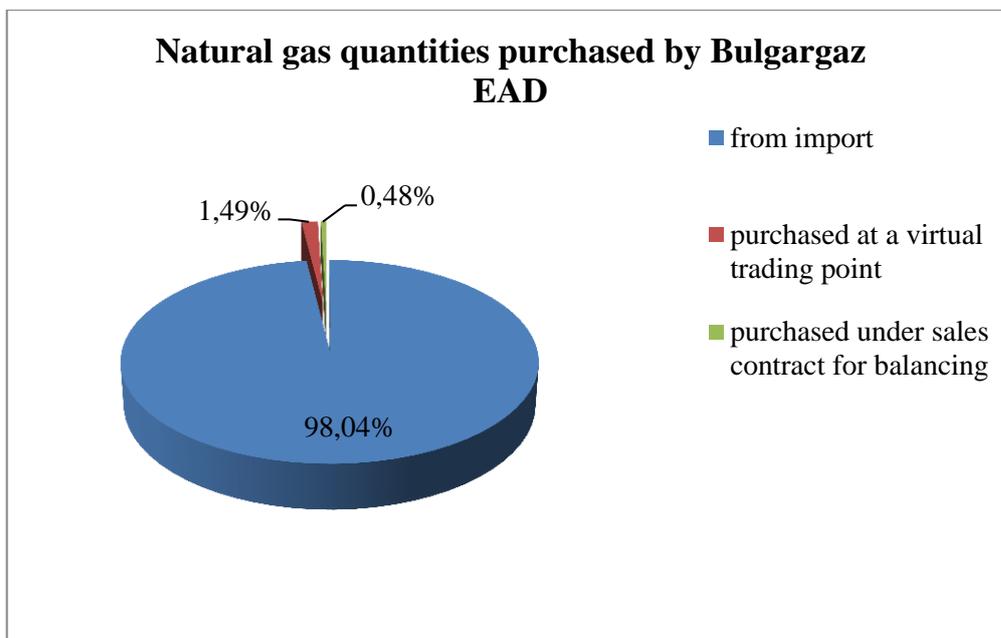
The main quantities of natural gas needed for the domestic consumption in 2021 were provided by imports, including and a small part of local production by extractive companies Oil and Gas Exploration and Production AD and Petroceltic Bulgaria EOOD.

In 2021, the main natural gas supplies for the domestic market were carried out by Bulgargaz EAD, and the rest by natural gas traders.

In 2021 Bulgargaz EAD purchased natural gas for the domestic market under gas supply contract with OOO Gazprom Export, under a contract with an Azerbaijani company and from natural gas traders on VTP.

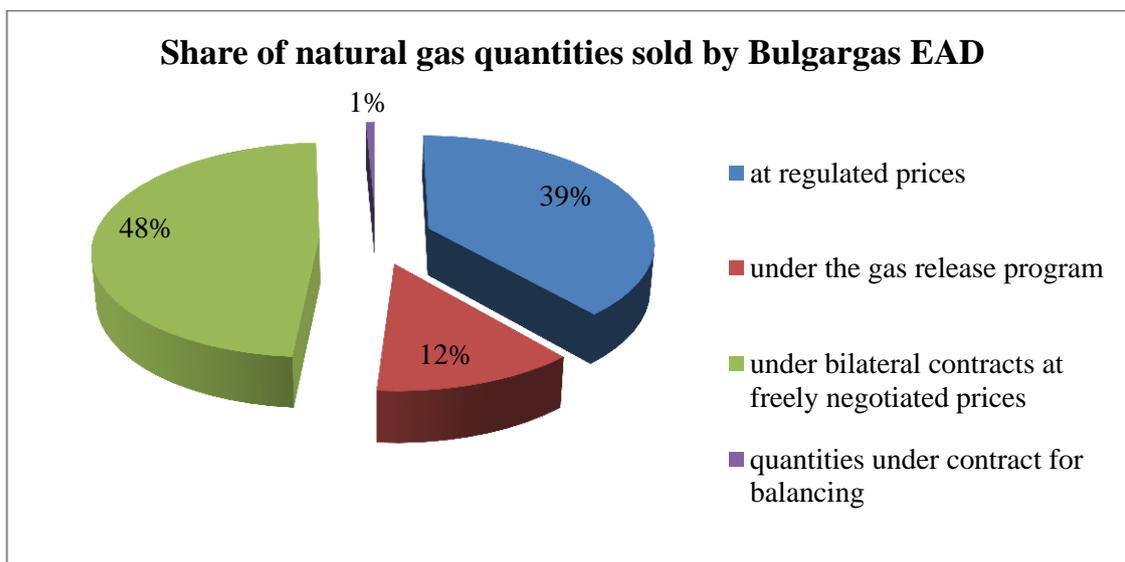
Natural gas quantities purchased by Bulgargaz EAD were as follows:

- for the domestic market under import contracts – 33 406 032 MWh;
- at VTP – 506 390 MWh;
- under a contract with Bulgartransgaz EAD for imbalance – 162 798 MWh.

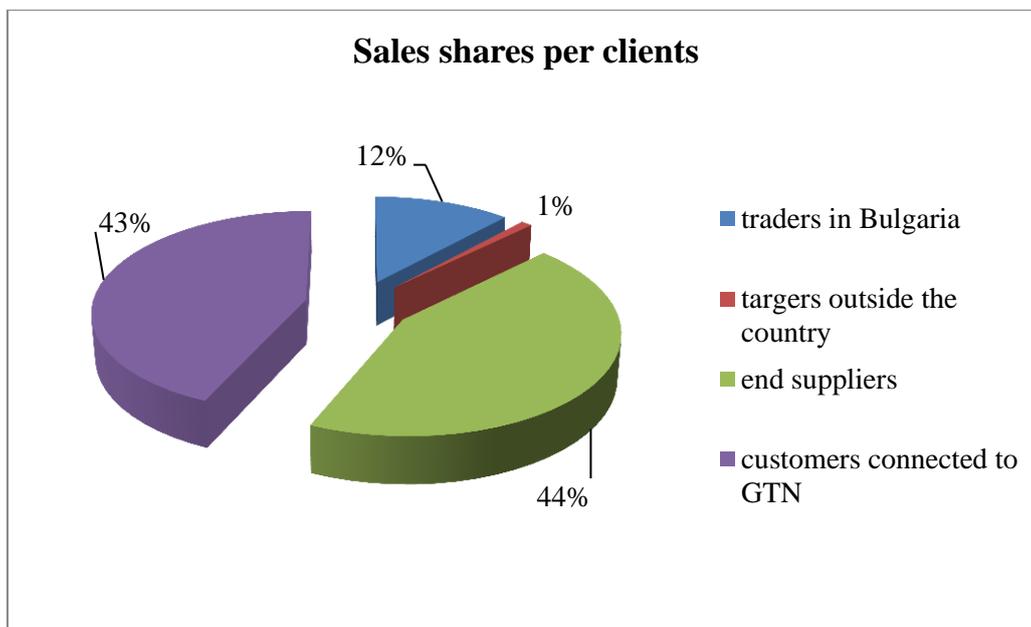


Natural gas quantities sold by Bulgargaz EAD in 2021 were as follows:

- at regulated prices – 13 151 266 MWh;
- under the gas release program – 4 281 000 MWh;
- at freely negotiated prices – 16 351 553 MWh;
- under a contract with Bulgartransgaz EAD for imbalance – 251 429 MWh.



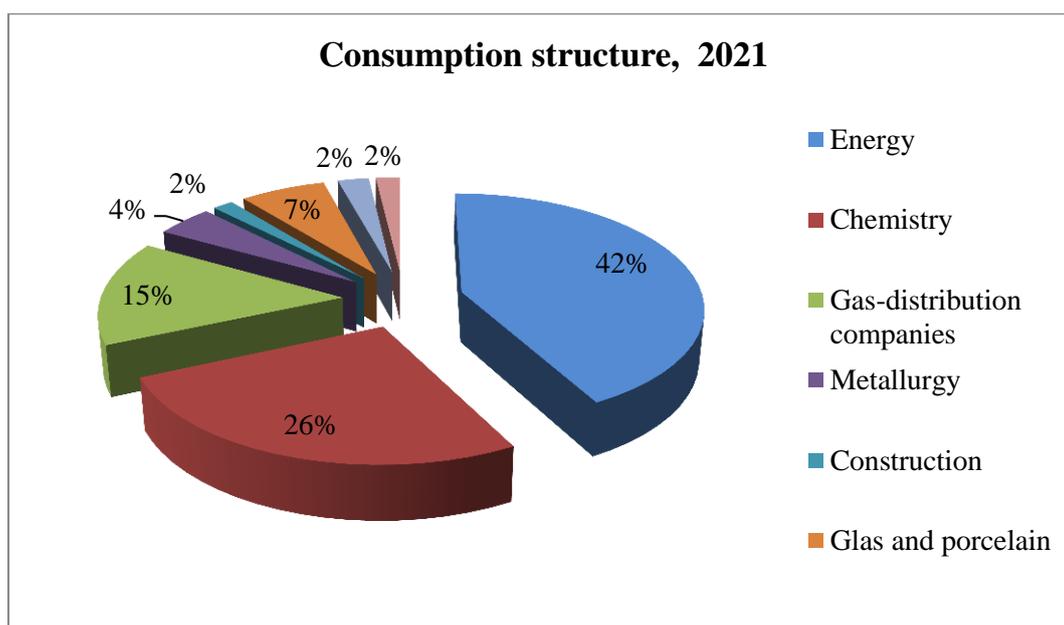
In 2021 Bulgargaz EAD has sold natural gas to customers connected to the gas transmission network, end suppliers of natural gas and to traders. Sales shares per clients are presented in the chart below:



The structure of consumption by industry of natural gas sold by Bulgargaz EAD in 2021 was as follows:

- energy sector – 10 961 841 MWh;
- chemical industry – 6 825 545 MWh;
- distribution companies – 3 836 391 MWh;
- metallurgy – 1 147 950 MWh;
- regional development and construction sector – 413 496 MWh;
- glass and porcelain – 1 705 120 MWh;
- agriculture – 621 532 MWh;
- other – 486 370 MWh.

The structure of consumption by industry of the natural gas sold by Bulgargaz EAD is also presented in the chart below:



The quantities of natural gas produced in the country in 2021 were as follows:

In 2021 Oil and Gas Exploration and Production AD has extracted 99 586 MWh of natural gas, of which 18 397 MWh were sold to one end customer, 30 045 MWh to two gas distribution companies and 43 603 MWh to two traders. 7 541 MWh were used for the extraction company's own use.

Petroceltic Bulgaria EOOD has extracted 224 413 MWh of natural gas in 2021, which it sold to natural gas traders as follows: 62 423 MWh to Most Energy AD and 161 990 MWh to Dexia Bulgaria OOD.

As of 1 October 2021, the activity of natural gas trading shall be carried out on the basis of a license issued by EWRC. EWRC has issued licenses for this activity to 44 natural gas traders in 2021.

In 2021 EWRC has also licensed two natural gas exchange markets – Balkan Gas Hub EAD (BGH EAD) and Bulgarian Energy Trading Platform AD (BETP AD).

The registered members of Balkan Gas Hub EAD as of 31.12.2021 were 49, of which about 40% were international companies with experience in natural gas trading in European markets and with a rich portfolio. The remaining 60% were local natural gas traders, among which there were large industrial gas consumers in the country.

The short-term segment of the trading platform offers short-term standardized products intraday and day ahead as well as temporal and locational products for the TSO network balancing purposes. The long-term segment of the trading platform offers products traded on a medium and long-term basis - weekly, monthly, quarterly and calendar year(s).

In 2021 6 554 transactions were concluded on BGH EAD trading platform and a total of 16 952 827 MWh of natural gas was traded on the different segments, as follows:

Short-term segment: – 2 476 085 MWh. Transactions on the short-term segment increased nearly 4.2 times compared to the previous year, when 590 046 MWh were traded.

Long-term segment: (including VTP transactions and a brokerage service) – 10 195 742 MWh. Transactions on the long-term segment increased more than 2.7 times compared to the previous year, when 3 828 788 MWh were traded.

Gas Release Program (GRP): 4 281 000 MWh.

During the reporting year, 24 users were eligible to participate as potential buyers in the auctions under the gas release program. Auctions shall be conducted in accordance with the auction calendar published on Balkan Gas Hub EAD website, agreed with the public provider. In the auction calendar for 2021, fifteen auctions were planned, and after the twelfth of them, 100% of the annual quantities of natural gas offered by Bulgargaz EAD in the amount of 4 281 000 MWh were realized. The successful realization of the gas quantities under the program was due to the competitive prices compared to the prices of neighbouring markets. Only natural gas traders participated in the auctions.

Brokering services - through which products and services for end customers are offered to natural gas consumers and end suppliers directly connected to the gas transmission system, who do not have access to the gas transmission networks and to VTP, but would like to purchase natural gas at exit points from registered BGH members for their own needs. In this case, the end customer/end supplier has the status of a non-trading user and shall not pay membership and transactions fees under the applicable price list. A non-trading user shall be entitled to use BGH brokering services by

signing a Brokering Services Agreement, and shall be granted with special rights to access a specialized section of BGH website. A non-trading user shall not have access to the trading platform's screens, but shall purchase quantities at the exit point to which he is connected through registered BGH members. The total number of transactions under the BGH brokering service for the reporting year was 1232.

A clearing service has not yet been introduced on BGH market.

TSOs shall trade on the trading platform for the purpose of performing balancing actions and ensuring security of supply by purchase and sale of the necessary natural gas amounts. The TSO shall be entitled to request bank guarantees and/or deposits in an amount determined by him to guarantee the transactions with its participation. Participants who do not provide such a deposit cannot conclude transactions with the TSO. Bank guarantees and/or deposits shall be established in favour of and/or to the bank account of Bulgartransgaz EAD in an amount that guarantees in full securing of the transactions between a trading platform member and TSO. At any time, bank guarantees and/or deposits should be maintained in full, securing TSO transactions, and in case of missing or incomplete collateral, the respective Balkan Gas Hub trading platform member will not be allowed to trade with the TSO.

On 10.09.2021 Balkan Gas Hub EAD joined the Memorandum of Understanding (MoU) about trans-regional cooperation on the development of an integrated South-Eastern and Eastern European gas market (SEEGAS). Energy exchanges and transmission system operators from Greece, Romania, Austria, Poland and Ukraine participate in SEEGAS initiative. The memorandum aims to create and develop an effective commodity clearing system for transactions with natural gas and derivatives in line with best European practices. The project is fully supported by the European Bank for Reconstruction and Development, as one of the support mechanisms is to carry out focused research and assistance in the development of regional capital market infrastructure (CMI), including a post-trade environment based on international standards and best practices.

As of 31.12.2021, 12 members were registered on the Bulgarian Energy Trading Platform AD exchange market. Natural gas trading started in May 2021 and by the end of 2021, 1080 transactions were concluded for a total of 14 247 535 MWh.

The total volume traded in 2021 by product is as follows:

- *intraday* – 164 951 MWh,
- *day ahead* – 384 970 MWh;
- *individual day* – 72 000 MWh,
- *weekend and holiday* – 212 600 MWh,
- *week* – 168 000 MWh,
- *bilateral contracts* – 13 245 014 MWh.

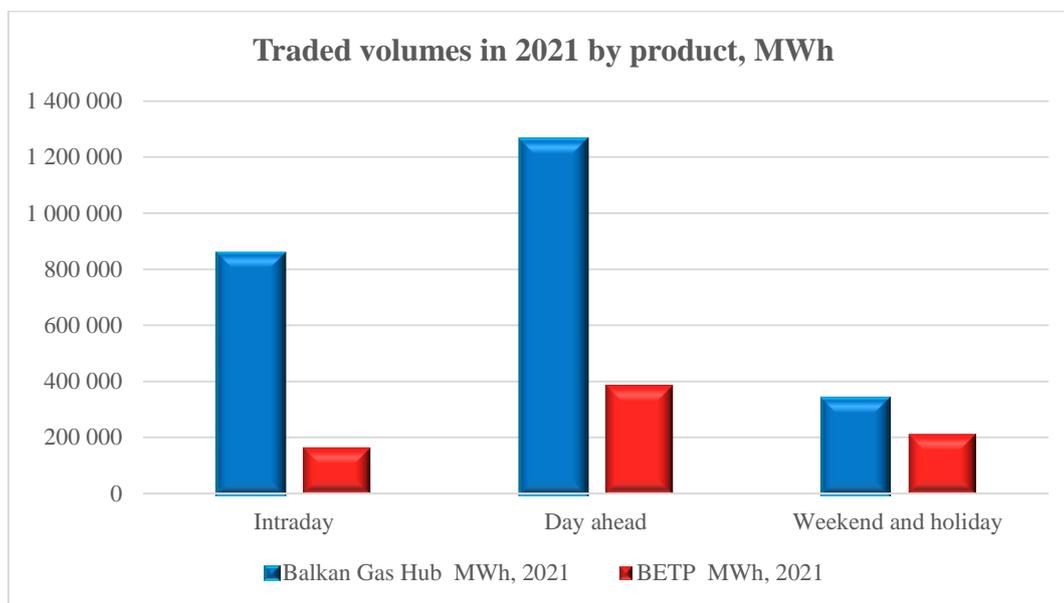
Bulgarian Energy Trading Platform AD (BETP AD) forms indexes that reflect the traded products price levels, formed by products traded on BETP market, as follows:

- Volume Weighted Average Price – VWAP;
- Reference price (Reference price) – RP;
- Weighted average price for delivery over a calendar month - BETPDMI (Bulgarian energy trading platform delivery month index).

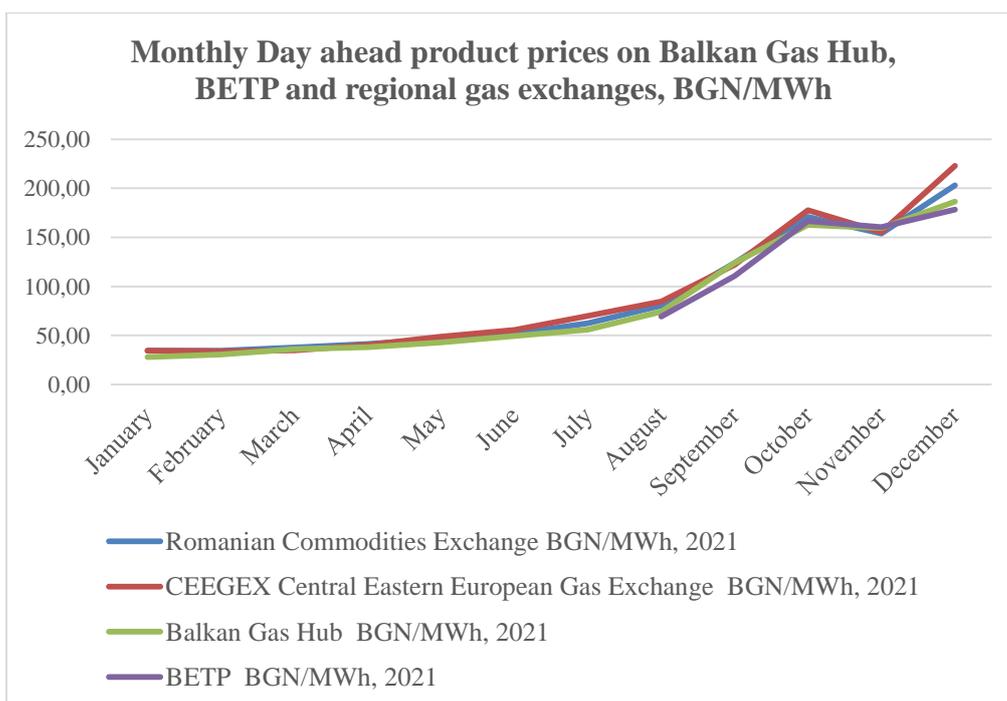
For each of the trading months in 2021 on Bulgarian Energy Trading Platform AD market, BETPDMI is as follows: June 2021 – BGN 58.09/MWh; July 2021 – BGN 53.75/MWh; August 2021 – BGN 67.12/MWh; September 2021 – BGN 91.81/MWh; October 2021 – BGN 131.59/MWh; November 2021 – BGN 144.25/MWh and December 2021 – BGN 178.16/MWh. The increase in BETPDMI index in December compared to June was 206.70%.

As of 31.12.2021, Bulgarian Energy Trading Platform AD has not concluded an agreement with a clearing house for provision of clearing services to BEPT market members. Until the introduction of a clearing service, BEPT AD shall require members to maintain collateral to guarantee their obligations in the form of cash deposits for submitted orders and concluded transactions.

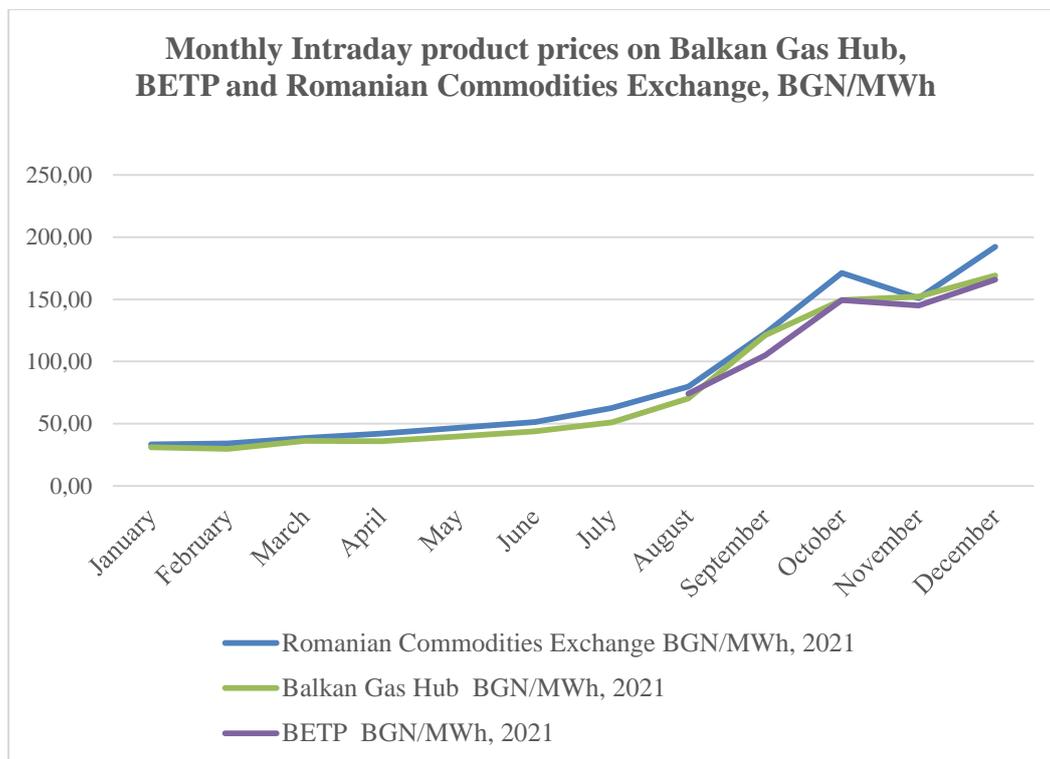
The traded gas volumes of Balkan Gas Hub EAD and Bulgarian Energy Trading Platform AD in 2021 are shown in the graph below:



The average monthly prices for a short-term day-ahead product in 2021 on Balkan Gas Hub EAD and Bulgarian Energy Trading Platform AD trading platforms, relative to the Romanian Commodities Exchange and the Hungarian CEEGEX Central Eastern European Gas Exchange trading platforms are shown in the following graph:



The average monthly prices for a short-term product intraday product in 2021 on Balkan Gas Hub EAD and Bulgarian Energy Trading Platform AD trading platforms, relative to the Romanian Commodities Exchange trading platform are shown in the following graph:



4.2.2. Retail market

Non-household customers and gas distribution networks are connected to Bulgartransgaz EAD gas transmission network.

The number of non-household customers connected to the gas transmission network at the end of 2021 was 247. Most of the gas distribution networks in the country are also connected to the gas transmission network. Three gas distribution networks are connected to domestic extraction facilities and receive natural gas from local extraction, and two of these networks simultaneously receive alternative supplies. In eleven gas distribution networks gas supply is carried out by trucks delivering natural gas with bottles, due to the lack of connection between the distribution networks and the transmission network.

The main supplier of customers connected to the gas transmission network is Bulgargaz EAD (185 customers by the end of 2021). Supplies to those customers have also been carried out by natural gas traders.

At the end of 2021, 24 companies encompassing 35 areas were licensed on the territory of Bulgaria, covering 173 municipalities, representing 65% of all municipalities in the country. Nine companies delivered supplies of compressed natural gas to customers in municipalities that have no connection to the transmission network. An important prerequisite for increasing the number of natural gas non-household and household customers in the country is the construction of gas pipelines connecting the gas distribution networks of the licensed areas with the gas transmission network.

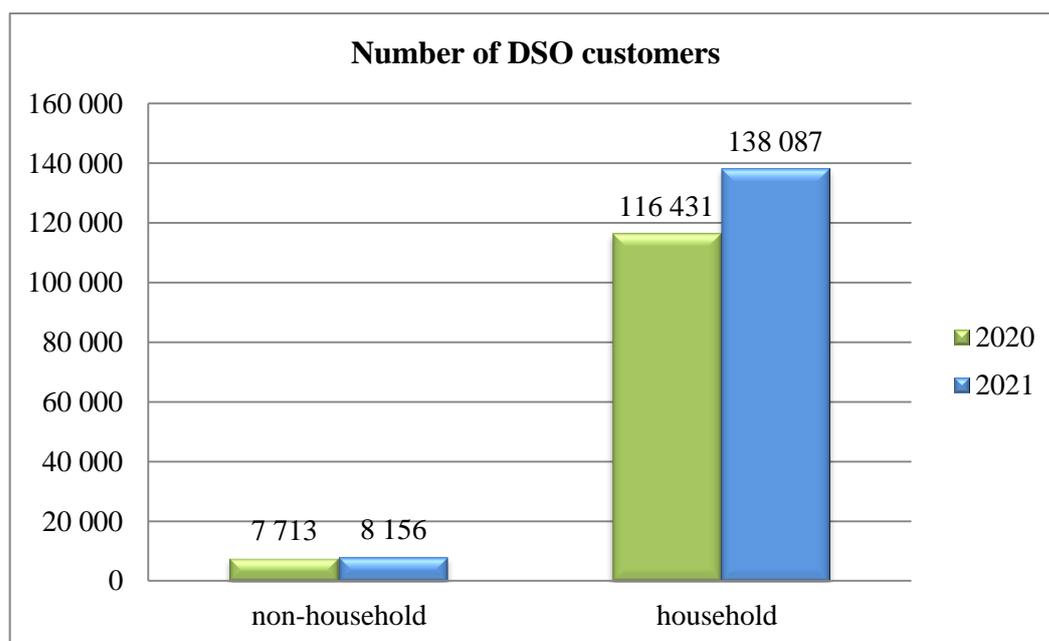
At the end of 2021, 24 companies were licensed on the territory of the Republic of Bulgaria

for the activities "natural gas distribution" and "natural gas supply from end supplier", which operated in 35 licensed territories, covering 173 municipalities, representing 65% of all municipalities in the country. The license for the activity "natural gas supply from end supplier" imposes the obligation for the company to supply natural gas to customers connected to the gas distribution network, when they have not chosen another supplier.

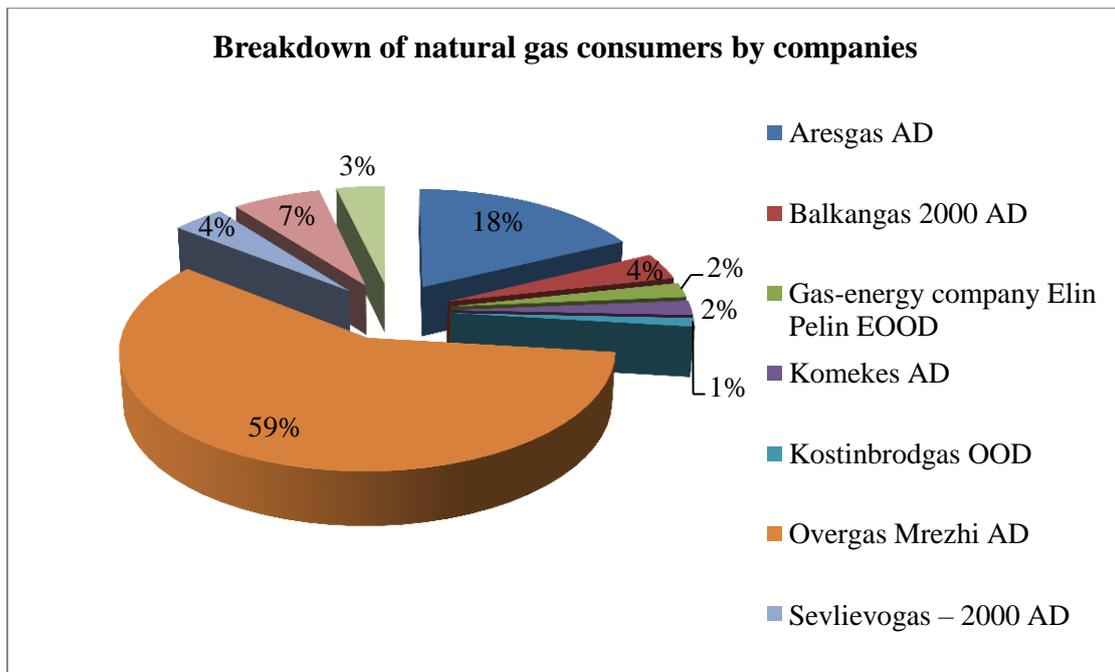
The necessary infrastructure for natural gas distribution in the country is under construction and the number of connected to the GDN household customers is low. The regulatory mechanism implemented by EWRC provides for incentives for the gas distribution enterprises to continue the development of GDN and the connection of new customers with the aim of gradually increasing their number, as well as natural gas consumption.

The established network of the gas distribution enterprises in 2021 was 162 730 m, and the total length of the gas distribution network within the country was 5 461 340 m. The investments made by the distribution companies in 2021 were 27 031 000 BGN.

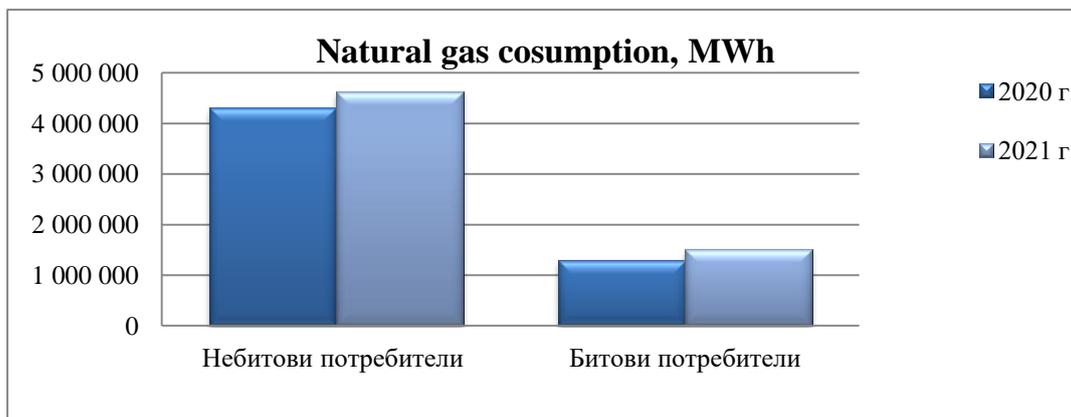
The total number of clients of the gas distribution companies as of 31 Dec 2021 was 146 243, of which non-household 8 156 (5.6%) and 138 087 household customers (94.4%). The number of customers has increased with 17.8% over one year - from 124 144 in 2020 to 146 243 in 2021. The household customers have increased by 18.6%, and the non-household – by 5.7%.



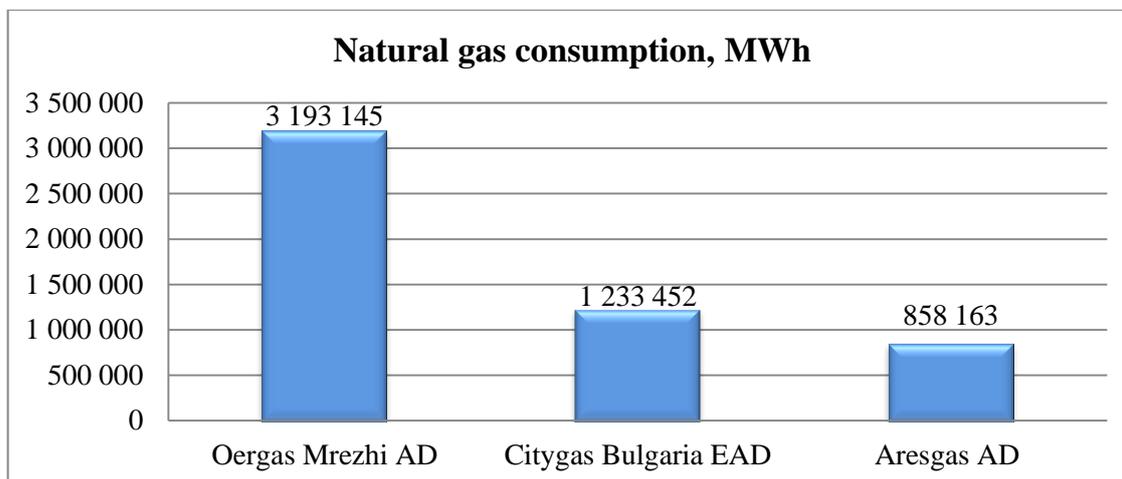
Breakdown of natural gas consumers by companies is presented in the graph below:



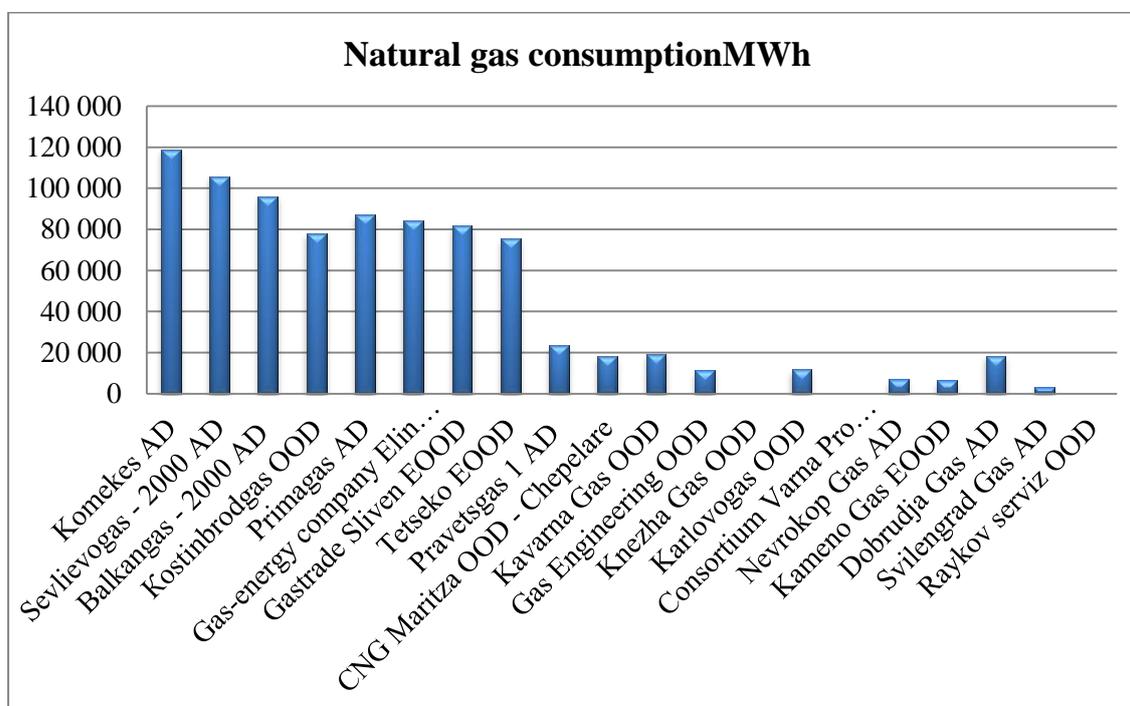
Overgas Mrezhi AD serves the largest number of customers – 85 856, which is 59% of all natural gas customers in the country, followed by Aresgas AD with 18%, Citygas Bulgaria EAD with 7%, Sevlievogas 2000 AD with 4%, Balkangas 2000 AD with 4%. Total consumption by distribution companies' customers in 2021 was 6 148 291 MWh, an increase of 9.7% compared to 2020, when consumption was 5 605 628 MWh. The share of non-household customers was 75% or 4 629 309 MWh compared to 2020, when consumption was 4 314 224 MWh and the share of household customers was 25% or 1 291 404 MWh.



Overgas Mrezhi AD, Citygas Bulgaria EAD and Aresgas AD customers had the highest consumption:



Gas consumption of the other companies' customers is presented in the graph below:



In 2021 three non-household customers connected to the gas distribution network changed supplier, while household customers did not report a supplier change.

4.2.3. Monitoring the level of prices, the level of transparency, the level and effectiveness of market opening and competition

In exercising its regulatory powers with regard to price levels, EWRC is guided by the main principles of developing competitive and well-functioning regional markets within the European Union and preventing the restriction or distortion of competition in the energy market.

Gas price regulation is carried out in accordance with EA and Ordinance № 2 of 19 March 2013 on Natural Gas Price Regulation (ONGPR). According to EA, the prices at which end suppliers sell natural gas to customers connected to the relevant gas distribution networks, connection prices

and prices for access and transmission through the transmission networks shall be subject to regulation by EWRC. The Regulator shall approve prices at which the public provider sells natural gas to end suppliers and to entities holding a license for production and transmission of heat energy.

ONGPR sets out natural gas price regulation methods, rules for price formation or determination and amendment, procedure for providing information, submission of price proposals and their approval; methods for energy enterprises compensation of costs incurred by imposed public service obligations under EA; terms and conditions on networks connection price formation; terms and conditions on natural gas access and transmission through transmission and/or distribution networks price formation. Prices subject to regulation are formed by the energy companies in accordance with EA and ONGPR. The Regulator's guidance on price regulation is binding for energy companies. EWRC approves prices for transmission through the gas distribution networks, prices for natural sale from end suppliers and prices for connection to the gas distribution networks based on analysis of the data presented in the applications and based on reasoned justification by applicants that the proposed prices will enable the companies to realize the investment and production programme parameters in their business plans.

Prices of “natural gas distribution” and “natural gas supply by end supplier” are regulated under the “price cap” method under Art.3 of ONGPR. EWRC approves tariff structures by customers’ groups, reflecting the allocated annual revenue requirements for the service for each consumer group, based on submitted cost service study. The existing tariff structures and prices for end customers of the gas distribution companies are differentiated depending on consumption type (household and non-household), consumption evenness and unevenness and the relevant consumption.

Gas market liberalization is an important part of European energy policy and is linked to the strategic objectives of improving security of supply and natural gas supply sources diversification, as well as building an interconnected and single pan-European gas market.

One of the main EWRC guiding principles is to prevent restriction/distortion of competition in the energy market, as well as to ensure a balance between the interests of energy companies and consumers. The Regulator monitors the existence of restrictive contractual practices and exclusivity provisions which may prevent non-household customers from concluding contracts with more than one supplier at a time or restrict their choice of suppliers. In exercising its powers, EWRC shall analyse the performance of regulated energy companies, in order to prevent abuse of monopoly position or restriction/distortion of competition in the energy market in Bulgaria. EWRC may refer to the Commission for Protection of Competition (CPC), which in turn shall review the submitted information and after assessing the data on a case-by-case basis may initiate proceedings under the Law on Protection of Competition. When, in exercising its powers, EWRC finds that a licensee distorts or restricts competition, it shall refer the matter to CPC. EWRC shall assist CPC by providing any necessary information and documents that may be used by CPC with regards to the case. In case CPC finds by a decision that the licensee distorts or restricts competition, EWRC may impose coercive measures provided for in EA, and in case of a systematic violation of competition rules established by CPC, EWRC may revoke the license.

EWRC continuously monitors the market in order to ensure non-discrimination between all market participants, as well as between participants of one and same category and to promote efficient competition and proper market operation. EWRC is in close cooperation with the Commission for Consumer Protection (CCP), as well as with other non-governmental consumer protection organizations.

EWRC monitors the level and efficiency of market opening and competition and is guided by the following basic principles: development of competitive and well-functioning regional markets

within the European Union; preventing the restriction or distortion of competition on the energy market; creating incentives for the development of the competitive market for energy activities, where conditions permit so; creating incentives for effective development of secure, reliable and efficient networks in accordance with the customers interests. EWRC monitors gas networks development for the benefit of all participants, which will ensure sufficient and available capacity for everyone and monitors market competition and its effective functioning.

4.2.4. Consumer protection and dispute settlement

EA transposes the requirements of Directive 2009/73/EC aiming to ensure effective and adequate consumers rights and interests protection, strengthen and guarantee their rights and ensure greater transparency of market relations. The requirements of Annex 1 to Directive 2009/73/EC are enforced regarding the energy services contracts content that should be disclosed to consumers prior to the conclusion or confirmation of the contract.

In exercising its regulatory powers, EWRC is guided by general principles defined in EA, including ensuring a balance between the interests of energy companies and customers, equality between different categories of energy companies and between consumer types and establishing end customers' protection measures. To protect energy customers' rights EWRC closely cooperates with the Commission for Consumer Protection, the Ombudsman of the Republic of Bulgaria, as well as a number of consumer protection NGOs.

As a specialized state authority EWRC regulates the activities in the energy sector, approves the *General conditions* of contracts provided for in EA and the *Rules on work with energy services consumers* developed by energy companies that provide services of public interest. These contracts have mandatory content defined in EA, guaranteeing consumers' rights protection. The contracts shall state: term of the contract; temporary suspension conditions, termination of service provision and of the contract; rights of energy services consumers, including information concerning the procedure of considering complaints and making decision on them, conditions for unilateral termination of the contract by the user of energy services including upon a change of the contractual conditions and prices, incl. the possibility for such termination without additional payment. They provide for conditions and procedures of setting-off and reimbursement of sums in case of failure to comply with the requirements for quality of the contracted services. Licensees providing services of public interest are obliged to guarantee consumers' rights protection and equality between customer groups in the contracts' General conditions and Rules on work with energy services consumers. EWRC shall ensure that the approved General conditions include the content of invoices or bills which reflect the actual consumption and contain specific data on the metering device number, natural gas consumption, value added tax (VAT) and a price breakdown by components, if approved.

Energy companies shall provide to their customers information about: payment methods; prices of supply suspension or resumption; prices of maintenance services and prices of other services related to the licensed activity; procedure of switching supplier and information that energy services users do not owe additional payments when switching supplier, including a final equalizing bill at each supplier switching; a procedure of handling complaints and ruling on the actual quantities consumed, as well as the service provided value in accordance with the agreed metering frequency at no additional cost. The information shall be presented in the invoices or together with them in informational materials and on the websites of the energy companies. In accordance with that procedure, the energy and natural gas suppliers shall provide also to energy services users a checklist adopted by the European Commission, containing practical information about their rights.

Energy companies shall provide customers with detailed information on daily, week, month

and annual consumption where smart metering systems are used, by providing the final customers (via the Internet or via the metering device interface) with data for a period covering not less than 24 previous months or since the entry into effect of the supply contract, if that is more recent. Natural gas suppliers shall provide customers with a wide range of payment methods, including advance payment systems that are fair and adequately reflect the expected consumption. Energy companies shall notify the domestic energy services customers of each proposed change to the contractual conditions and prices of the services provided, as well as of the customers' right to terminate the contract unilaterally within 30 days as of the notification date, if they do not accept the new conditions and/or prices. The end supplier shall inform the customer, together with the invoice, on the last month of each 6-month period, when the reported natural gas consumption of the end customer for that 6-month period is higher by more than 50 percent than the reported consumption for the respective 6-month period of the previous calendar year.

Energy companies performing natural gas supply shall establish information centres where they will both provide users with information on energy services and customers' relations.

Energy companies providing services of public interest shall determine in the General conditions for supply and networks use and in the Rules on work with users, special procedures of providing vulnerable customers with information related to consumption and suspension of supply.

Complaints handling terms and conditions are regulated by EA and Ordinance № 3 on licensing the activities in the energy sector. EWRC shall consider complaints of: networks and facilities users against transmission and distribution network operators, extraction companies, natural gas storage facilities operators and LNG operators related to the way these entities perform their duties under EA; customers against energy and natural gas suppliers, including end suppliers, regarding their duties under EA as well as licensees against other licensees regarding their duties' performance under EA.

EWRC may assist an amicable dispute settlement on a complaint. In case no amicable settlement is achieved or the parties reject amicable settlement, the Regulator shall decide on the complaint within two months after receiving it.

The number of complaints in gas sector filed at EWRC in 2021 remains low compared to the other three sectors. Out of 146 243 natural gas customers, complaints were filed by 23 customers or 0.016 % of them. The main reason for the insignificant complaints number is the small number of gasified sites in the country, both household and non-household which determines the low number of complaints filed to the Regulatory Authority and to the companies. On the other hand, the tendency to maintain a low level of complaints in the sector is due to the fact energy companies inform the customers of their rights and obligations according to the general terms of the contracts and the users' procedures rules, including the complaints filing and handling order. Energy companies promptly examine the complaints and satisfy the reasonable ones.

EWRC shall periodically verify and control the fulfilment of licensees' obligations related to the establishment of a specialized unit for work with customers in the company structure, in which sufficient and qualified personnel must be appointed; maintaining a sufficient number of centres for work with customers to cover the needs of the licensed area; provision of services to customers in accordance with the quality indicators of natural gas supply adopted by EWRC; maintenance of a quality management system for the licensed activity, certified by an independent competent organization; maintaining a system for receiving and handling complaints.

The number of clients' complaints filed to the gas distribution companies in 2021 is 106. The customers filing these complaints represent 0.07% of all 146 243 gas distribution companies' clients in 2021. Most complaints were filed with Overgas Mrezhi AD for the licensed territory of Sofia

Municipality and Bozhurishte Municipality – 40, which represents 38% of all complaints in the sector.

Complaints submitted to the gas distribution companies were classified as follows:

- 36 complaints related to connection to GDN, of which 6 were found justified and were satisfied, and 30 were found non-justified;
- 15 complaints related to inaccurate metering of the natural gas consumption, of which 6 were satisfied, and 9 were found non-justified;
- 1 complaint related to restoration of gas supply – found non-justified;
- 4 complaints related to disconnection to non-payment – found non-justified;
- 2 complaints related to invoice content – found non-justified;
- 9 complaints related to prices of applied by the companies, one of which was justified;
- 1 complaint related to redress concerning connection to GDN – found justified and satisfied;
- 2 complaints related to customer service - found non-justified;
- 36 other complaints, of which 9 were found justified and were satisfied, and 27 were found non-justified.

Companies use different sources to raise customer awareness about the services provided and the possibilities to receive information about disputes settlement, clarification of the customers' rights on filing complaints, and the possibility to address EWRC in case they are not satisfied with the received answer. They inform their clients via company's webpage, telephone, e-mail.

Household customers indicators	2018	2019	2020	2021
Number of household natural gas customers	100 412	112 210	124 652	138 087
Number of natural gas household customers, having been connected to the gas distribution network of the company and which have switched natural gas supplier	0	0	0	0
Number of disconnections of final household consumers due to non-payment	1 497	2 104	1 741	2493
Number of working days between notification to pay a bill and disconnection in cases of non-payment in practice	18	18	18	18
Number of household vulnerable customers according to paragraph 1, item 66c of EA Supplementary Provisions	7	6	8	12
Number of household customers with smart meters	653	3 281	5589	14 316

There has been a significant increase in installed smart meters of household customers, which increased from 653 in 2018 to 14 316 in 2021. However, they represent only 10% of all installed meters of household customers.

The average percentage of household customers who have been disconnected due to non-payment in the period 2017 – 2021 is relatively constant and amounts to about 2%.

Although all gas distribution companies provide their customers with information on the switching procedure and that energy service users do not owe any additional payments when changing supplier, there has been no change of supplier by household customers yet. They remain

customers of the end suppliers. The lack of a well-developed liquid gas market caused by the dominant role of the public provider Bulgargaz EAD can be cited as the reason.

4.3. Security of supply (if and insofar NRA is competent authority)

The Ministry of Energy is the state body that conducts the energy policy in the country. The Minister of Energy is the competent authority concerning security of supply in the meaning of Art.3, paragraph 2 of Regulation (EU) 2017/1938 of the European Parliament and of the Council of 25 October 2017 concerning measures to safeguard the security of gas supply and repealing Regulation (EU) № 994/2010 (Regulation (EU) № 2017/1938). Pursuant to Art.8, para.2, letters (a) and (b) of Regulation (EU) 2017/1938 the competent authority of each Member State, shall, after consulting the natural gas undertakings, the relevant organizations representing the interests of household and industrial gas customers, including electricity producers, electricity transmission system operators, and, where it is not the competent authority, the national regulatory authority, establish: a preventive action plan containing the measures needed to remove or mitigate the risks identified, including the effects of energy efficiency and demand-side measures in the common and national risk assessments and in accordance with Article 9; an emergency plan containing the measures to be taken to remove or mitigate the impact of a disruption of gas supply in accordance with Article 10. In compliance to Regulation requirement, an interdepartmental group has been established, appointed by the Minister of Energy, which shall draft the above-mentioned documents. Representatives of EWRC have been included and they have participated in the documents drafting process.