Energy and Water Regulatory Commission (EWRC)
Bulgaria

Annual Report
to the European Commission

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LIST OF ABBREVIATIONS

ACER	Agency for the Cooperation of Energy Regulators
ANRE	Romanian energy regulatory authority
BOTAS	Turkish gas transmission operator
CCP	Commission for Consumer Protection
CCR	Capacity Calculation Regions
CCR SEE	Capacity Calculation Region South East Europe
CDP	Commercial dispatching platform
CEER	Council of European Energy Regulators
CEF	Connecting Europe Facility
CESEC	Central and South Eastern Europe Gas Connectivity
CPC	Competition Protection Commission
CR 3	Concentration ratio – the sum of the market shares of the three biggest market participants
DAM	Day Ahead Market
DEPA	Greek Energy Company
DESFA	Greek gas transmission operator
EA	Energy Act
EMR	Electricity Market Rules
ENTSOE	European Network of Transmission System operators - electricity
ENTSOG	European Network of Transmission System operators – gas
EPS	Electric power system
ESO EAD	Electricity system operator EAD
ETN	Electricity transmission network
EU	European union
EWRC	Energy and Water Regulatory Commission
GDN	Gas distribution network
GMS	Gas metering station
GRIPs	Gas regional investment plans
GRMB	Gas regulatory metering board
HHI	Herfindahl-Hirschman Index, sum of the squares of the market shares of the participants in the relevant market
HPP	Hydroelectric power plant
IBEX EAD	Independent Bulgarian Energy Exchange EAD
IBS	Gas interconnection Bulgaria – Serbia
IGB	Gas interconnection Greece – Bulgaria
ITB	Gas interconnection Turkey – Bulgaria
ITO	Independent Transmission Operator
MPNGAT	Methodology on pricing of natural gas access and transit in gas transmission networks owned by Bulgartransgaz EAD

NC TAR	Network code on harmonized tariff structures for transmission of gas
NDC	National Dispatching Centre
NEK EAD	National Electricity Company EAD
NGO	non-governmental organization
OEPR	Ordinance №1/2013 on electricity price regulation
ONGPR	Ordinance №2/2013 on natural gas price regulation
OLAES	Ordinance №3/2013 on licensing the activities in energy sector
OP	Operative Programme
PCI	Project of common interest
PP	Power plant
PvPP	Photovoltaic power plant
RAE	Greek energy regulatory authority
RBP	Reginal booking platform
RES	Renewable energy sources
SLP	Standardized Load Profiles
TANAP	Trans-Anatolian natural gas pipeline
TAP	Trans-Adriatic pipeline
TSO	Transmission System Operator
UGS Chiren	Underground gas storage
VTP	Virtual trading point
WPP	Wind power plant

1. FOREWORD

The efforts of the Energy and Water Regulatory Commission (EWRC, the Regulator) in the electricity sector in 2018 were focused on the continuation of the electricity market liberalization processes in line with European policies and legislation. In 2018, EWRC concentrated its activity on creating the necessary regulatory framework to remove barriers to full market opening. The regulatory framework for the participation of electricity renewable energy generaotrs at the power exchange was adopted, which would increase competition and ensure the application of fair pricing principles in the electricity market.

The main priorities and challenges the Bulgarian gas sector faces and that are also in the focus of the European Union (EU), are security of energy supply, diversification of sources and natural gas supply routes, construction of the required infrastructure and establishment of a natural gas exchange.

In 2018, EWRC continued its activities in creating the necessary conditions for competitiveness and liberalization of the Bulgarian natural gas market, as part of the EU and Eastern Europe markets, to open up the national natural gas market and secure unhindered access for all market participants, including new entrants. In this context, EWRC has taken key steps to achieve these objectives, in close cooperation with the national regulatory authorities of the neighboring EU Member States and the Eastern Balkan countries.

In fulfillment of the European legislation requirements related to natural gas market liberalization and integration, EWRC, within the scope of its powers, adopted a number of decisions, which had a positive impact on liberalization processes development in the sector and the proper functioning of the natural gas market in the country.

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Chairman
Energy and Water Regulatory Commission

2. MAIN DEVELOPMENTS IN THE GAS AND ELECTRICITY MARKETS

2.1. Main developments in the electricity market

The amendments to the Energy Act (EA) and to the Energy from Renewable Sources Act (ERSA) had a significant role in the market liberalization process in 2018. By them the next stage of the electricity market liberalization was put forward when all producers with total installed electrical capacity of and more than 4 MW, incl. those from renewable sources (RES) and high-efficiency cogeneration (HECG), have been obliged to sell all generated electricity to the various segments of the organized power exchange – respectively, the public provider had to sell the quantities exceeding the needs of the regulated market and the transmission and distribution system operators had to buy the required electricity amounts for technological costs from the power exchange. In this regard, the existing model of mandatory purchase of electricity generated by RES and HECG generators has been eliminated, as well as the obligation of the public provider to sell electricity to grid operators to cover the transmission / distribution technological costs. EWRC has been delegated additional powers related to the determination of electricity premiums for RES and HECG electricity generated by plants with total installed capacity of and more than 4 MW. EWRC also started to set the forecast market price by generators groups depending on the primary energy source, as well as to determine an estimated market price for technological costs of the transmission system operator and the distribution system operators.

The functions and role of the Electricity System Security Fund (ESSF) have significantly expanded. The fore-mentioned amendments to EA and ERSA in 2018 necessitated an amendment of Ordinance No. 1 of March 14, 2017 on regulation of electricity prices (OREP) and of the Electricity Trading Rules (ETR). The changes made in the OREP and the ETR aimed at aligning these secondary legislation acts with the amendments to the EA and the ERSA and creating the required regulatory prerequisites for the real participation of the concerned market participants in the power exchange.

The power exchange expansion raised the issue of the regulator's powers to monitor and control the market and impede attempts of market manipulation and abuse. This resulted in the implementation of Regulation (EU) No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integrity and transparency (REMIT) in the national legislation, with changes in the EA, promulgated SG 38/2018, as an important measure that allows EWRC to fulfill its functions in order to guarantee transparency and market integrity and in cases of proven manipulation, to impose effective sanctions against violators.

In the pricing decisions over the period, EWRC has consistently implemented a balanced approach that takes into account the interests of all concerned, in order to prevent sharp price changes. Regulated market electricity prices increased by an average of 2.03% in 2018 and heating prices - by an average of about 7.33%. This regulator's approach to electricity and heat prices has been of particular importance for household customers and especially for those who fall into the category of energy vulnerable customers. In order to protect them, the state needs to introduce support measures that allow the market liberalization process to pass without social disturbances.

In order to achieve cross-border connectivity, EWRC and the Energy Regulatory Authority of the Hellenic Republic (RAE) have adopted a common Cross-border Cost Allocation Decision for a project of common interest No. 3.7.1.Maritsa East 1 (BG) - N. Santa (EL), enabling ESO EAD to receive a grant of BGN 58 M under the Connecting Europe Facility. In order to bring national legislation in line with European legislation, EWRC has also adopted decisions concerning the implementation of the regulations and network codes of the Single European Electricity Market, aimed at achieving the three objectives of the European energy policy - ensuring security of supply, creating a competitive internal electricity market and reduction in carbon emissions in the electricity sector.

2.2. Main developments in the gas market

In 2018, EWRC continued its activities to create the necessary conditions for competitiveness and liberalization of the Bulgarian gas market as part of the EU and Eastern European market, as well as for opening and accessing the national gas market to all participants. An important condition about the gas market liberalization in the country is the single regional natural gas market establishment, which can be achieved by building and connecting natural gas transmission infrastructures between countries, as well as by overcoming the differences in the ways of allocating gas capacities and natural gas markets balancing regimes. Essential for the regional gas market creation is the construction and putting into operation of the infrastructure projects included in the PCI list published by the European Commission (EC), to which the regulator contributed significantly. A key in this regard is the Greece-Bulgaria interconnector, which is among the seven EU energy priorities and will be implemented in synergy with the Alexandroupolis LNG terminal. EWRC and RAE adopted a Final Joint Decision on the exemption application submitted by ICGB AD, granting the company a temporary exemption for the Greece-Bulgaria interconnector from third-party access requirements, regulated tariffs and unbundling under 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 and repealing Directive 2003/55/EC (Directive 2009/73/EC).

In accordance with Regulation (EU) No 347/2013 of the European Parliament and of the Council of 17 April 2013 on guidelines for trans-European energy infrastructure and repealing Decision No 1364/2006/ EC, and amending Regulations (EC) No 713/2009, (EC) No 714/2009 and (EC) No 715/2009 (Regulation (EU) No 347/2013), regarding an investment request by Bulgartransgaz EAD, EWRC adopted a decision defining the cross-border allocation of investment costs of PCI No 6.8.2 “Rehabilitation, modernization and expansion of the Bulgarian transmission system” - Phase 2. EWRC approved Bulgartransgaz EAD's 10-year network development plan for the period 2018-2027, which is the basis for the development of the Regional Network Development Investment Plans (GRIPs) and the EU Community Network Development Plan prepared by the European Network of Transmission System Operators – Gas (ENTSOG).

In 2018, EWRC approved a Second Annual Report of Bulgartransgaz EAD on the continued application of interim measures for the maximum time limit under Commission

Regulation (EU) No 312/2014 of 26 March 2014 establishing a network code on gas balancing of transmission networks due to lack of diversification of supply routes and sources, limited number of users operating in the short-term gas market and lack of access to a trading platform in Bulgaria and neighboring gas markets that meets the criteria of Article 10 of that Regulation.

In view of the expected significant change in the natural gas supply routes through the territory of the country (potential reduction of the quantities transited through the country and the forthcoming construction in the region of key infrastructure projects for the development of the Southern Gas Corridor), by a Decision of the National Assembly, the Energy strategy of the Republic of Bulgaria until 2020 was amended and supplemented with the concept of building a gas distribution center (hub) on the territory of Bulgaria. The creation of the gas hub aims at linking the gas markets of the Member States in the region and the Energy Community Contracting Parties with the necessary gas infrastructure, in order to achieve the main priorities of the European energy policy. In this regard, EWRC adopted a decision approving the documentation of implementing the binding phase 3 of the Open season procedure for the project "Expansion of the gas transmission infrastructure of Bulgartransgaz EAD parallel to the north (main) gas pipeline to the Bulgarian-Serbian border". Phase 3 of the economic test ended with a positive result and Bulgartransgaz EAD made a final investment decision for the implementation of the Project with an estimated investment value of BGN 2 767 115 441 (two billion seven hundred sixty-seven million one hundred and fifteen thousand four hundred forty one levs) excluding VAT.

The gas distribution center construction concept was developed in January 2019 by founding the Gas Hub Balkan EAD company, with subject of activity construction and operation of an electronic platform, which created conditions for concluding bilateral transactions and a power exchange with physical and non-physical products - natural gas, energy products, energy carriers, energy, green and white certificates, carbon emissions and other energy-related products. In this regard, amendments to national legislation are forthcoming.

In 2018, EWRC adopted amendments and supplements to Ordinance No. 2 of March 19, 2013 on natural gas prices regulation (ONGPR), which achieved clearer regulation and optimization of the terms and conditions under which price regulation of both the public supplier and of the natural gas sector as a whole will be implemented, while maintaining the existing provisions and basic principles of price regulating. The amendments introduced formation and validation of gas prices only in energy measure units under the current European legislation.

EWRC exercises its regulatory powers in the natural gas sector in accordance with the Energy Act and the European legislation towards opening, proper functioning, development of a competitive, secure and sustainable internal gas market as part of the EU single gas market, striving to achieve a balance between the interests of energy companies and customers. In its activities, EWRC is guided by the principle of close cooperation with the regulatory authorities of other EU Member States, with ACER and the EC in order to achieve a genuine opening of the natural gas market to all EU customers and suppliers and to ensure appropriate conditions for efficient and reliable operation of gas networks, taking into account long-term goals.

3. ELECTRICITY MARKET

3.1. Networks regulation

3.1.1. Unbundling

ESO EAD is a certified independent transmission operator certified by EWRC Decision in 2015, thus implementing the requirements of art.10 and art.11 of Directive 2009/72/EC and art.3 of Regulation (EU) 714/2009. The transmission operator and network assets are separated into a legal entity within the vertically integrated undertaking, which carries out the generation and supply activities. By Decision No DPRM-2 of 2 November 2018, EWRC approved the Ten-year Transmission Network Development Plan of ESO EAD for the period 2018 - 2027, which contains basic information about the electricity transmission infrastructure that is planned for construction, expansion, reconstruction and modernization over the next ten years. The annual estimated values of all expenses for construction, extension, reconstruction and modernization of the electricity transmission network facilities and of the protection and management systems of the electric power system (EPS) for the ten-year plan, amount to BGN 1 291 773 thousand, of which 148 932 thousand BGN or 11.53% are attracted European funds, mainly projects co-financing of pan-European importance.

3.1.2. Technical operation

Provision of balancing services

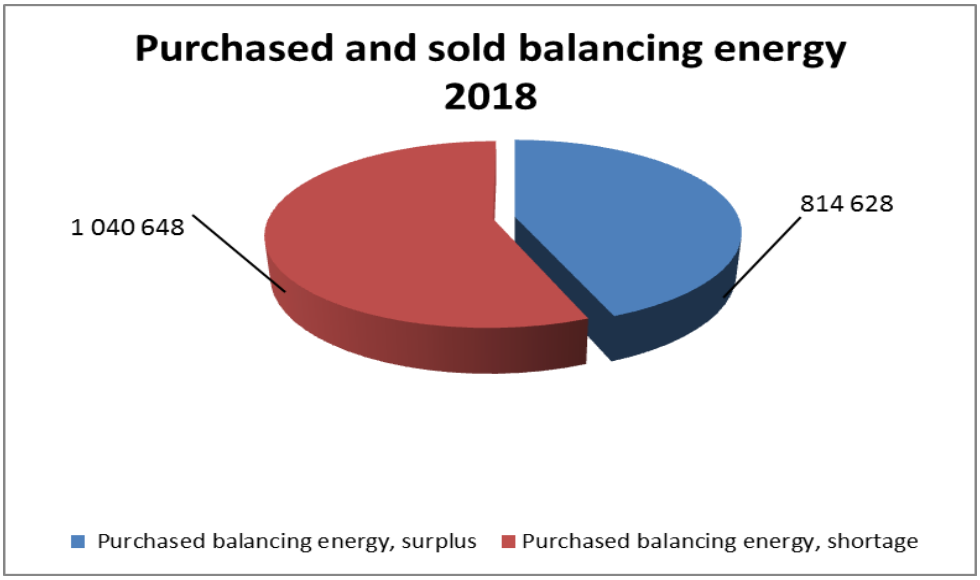
Under the EA, EWRC sets annually a marginal price for trading energy on the balancing market (BM). According to § 1, p. 2 of the EA Additional Provisions, “balancing energy” is the active electric power which the TSO activates to compensate the difference between the registered at the TSO delivery schedules and the actually realized ones, as well as the non-contracted delivery schedules load fluctuations. The provisions governing the balancing electricity market are part of the Electricity Market Rules (EMR) and regulate balancing energy sale and purchase conditions in order to ensure security and stability of the national electric power system (EPS) and reliable parallel operation of Continental European EPS. EWRC's observations on the balancing electricity market activity in Bulgaria in 2018 show that the market operates stably and provides predictable environment in the relations between all market participants. EWRC Decision № Ц-40 of 29 Dec 2017 analysis and evaluation of the balancing market state were carried out, as well as a benchmarking with the Romanian market zone, with which market coupling is anticipated as soon as possible. In developed markets, the hourly balancing energy prices of the suppliers follow those of the day-ahead market (DAM), thereby achieving cohesion in both markets and avoiding arbitrage. Such a measure ensures that the balancing costs of the market participants are proportionate to the hourly market prices. The achieved DAM price functions as the minimum price for the upward proposals and the maximum downward price. In this way, the imbalance price is always less beneficial than the DAM one, and market participants are also encouraged to participate in the balancing energy market with their reserve capacity.

By the above decision EWRC changed the approach of setting a marginal price for balancing energy market transactions that provide a system upward regulation service of 2.5* DAM price, where DAM price is the base load price on the day-ahead market of the Bulgarian

Independent Energy Exchange EAD (IBEX EAD) for the respective day. The marginal price for transactions on the balancing energy market for downward regulation remains unchanged at the amount of 0.00 (zero) BGN/MWh.

- price cap for transactions on the balancing energy market for upward regulation (in case of energy shortage) at the amount of 202.00 BGN/MWh and;
- price cap for transactions in the balancing energy market (in case of energy surplus) at the amount of 0.00 (zero) BGN/MWh.

The total power shortage in 2018 was 814 629 MWh, compared to 1 052 992 MWh in 2017, which represents decrease in power shortage by 23%. The energy to cover the energy surplus in 2018 was 1 040 648 MWh, which is almost 11% less than the previous year, when it was 1 171 181 MWh.



Balancing energy price is set for each settlement period as two balancing energy prices. The minimal energy shortage price in 2018 was 37.60 BGN/MWh and the maximal energy shortage price was 1 244.97 BGN/MWh. The average 2018 energy shortage price was 186.48 BGN/MWh. The minimal energy surplus price in 2018 was 0.00 BGN/MWh and the maximal energy surplus price was 30.00 BGN/MWh. The average energy surplus price in 2018 was 12.65 BGN/MWh.

In 2018 the following were registered in the balancing energy market:
- 66 standard balancing groups' coordinators, compared to 57 in 2017;
- 15 special balancing groups' coordinators;
- 15 combined balancing groups' coordinators, compared to14 in 2017.

3.1.3. Connection and access network tariffs

Transmission and distribution network tariffs to end consumers are approved by EWRC upon the companies' proposal, in the terms and conditions specified under *Ordinance № 1 of 14 March 2017 on electricity prices regulation* (OEPR).

Different consumers' groups and tariff structures are specified according to companies' proposals and are grouped according to the voltage level and different day zones. Network services are paid based on electricity consumption, excluding the access price for non-household customers connected to the distribution network of CEZ Distribution Bulgaria and Elektrorazpredelenie Yug EAD, which is paid in KWh/day connected capacity. Transmission and access services are paid by consumers connected to the electricity transmission and distribution networks, traders with export transactions and traders with transactions on behalf of a network services user.

By Decision № Ц-11 of 1 July 2018, EWRC approved electricity and networks services prices after analysis and evaluation of the reported results from the electricity companies during the ongoing pricing period.

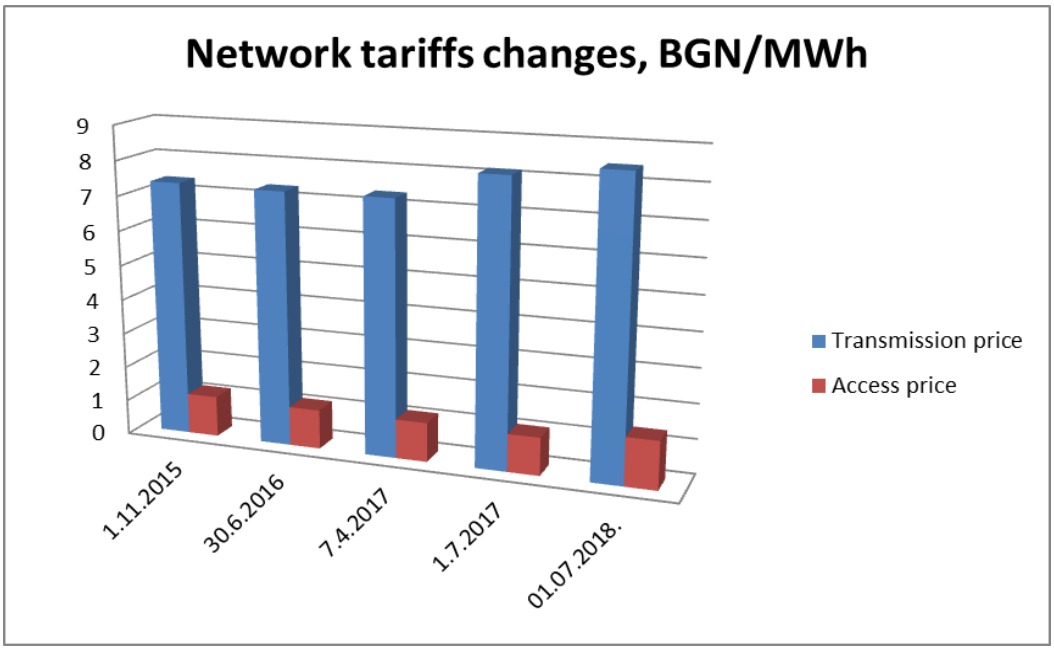
Transmission and access to the electricity transmission network

When regulating the network tariff for transmission through the transmission network EWRC uses the regulation method "rate of return on capital".

The approved by EWRC Decision № Ц-11 of 1 July 2018 prices and pricing elements for the activity of transmission and access to the transmission network, are shown in the following table:

Pricing decisions		**2017**	**2018**
		01.07.2017	**01.07.2018**
Transmission price	BGN/MWh	8.15	8.45
Annual revenue requirements	thousand BGN	326 475	338 345
Estimated power amounts for the regulated period	MWh	40 077 648	40 025 348
Access price	BGN/MWh	1.09	1.39
Annual revenue requirements	thousand BGN	43 580	55 621
Estimated power amounts for the regulated period	MWh	40 077 648	40 025 348

The next graph shows the change in transmission and network access prices over the last four years. It shows that the access price decreased in the period 2015-2017 and increased by 28 % compared to 2017.The transmission price increases as a result of the smaller amount of electricity and the increase in the company's revenues requirements for carrying out the licensing activity.



Monitoring the time taken to connect and repair

EA regulates the obligations of the transmission and distribution companies, respectively, to connect all generation units and consumers to the respective network. Pursuant to Article 116, paragraph 7 of EA, the terms and conditions for connection to the respective network, disconnection or power supply interruption and the boundary of ownership between separate electrical equipments, shall be determined by a EWRC ordinance.

In connection with the implementation of the legal requirements regarding the technical conditions, methods and deadlines for connection of customers and producers to the electricity distribution networks, by EWRC decisions, the following by-laws and administrative acts regulating the connection to these networks were adopted:

Ordinance No. 6 of 24 February 2014 on the Connection of Electricity Producers and Customers to the Transmission or Distribution Electricity Networks (Ordinance No. 6);

Ordinance No. 3 of 21 March 2013 on Licensing the Activities in the Energy Sector and *General Conditions of Contracts for Electricity Supply and Distribution*, including Rules on work with consumers of energy services. For the purpose of providing information to consumers, the abovementioned administrative acts are public, prominently displayed in customer service centers and published on the websites of supply and distribution companies.

In fulfillment of the obligations under Article 37 (1) (b) (m) of Directive 2009/72/EC and in accordance with the powers laid down in EA, EWRC controls the activities performed by licensed energy undertakings in accordance with their licenses and monitors the time that network operators take to realize the connections between electricity producers and customers to the respective electricity grids, with the aim of reducing and facilitating the connection procedures and reducing administrative burden by creating a unified service procedure.

Scheduled inspections of licensed companies were conducted in 2018 as follows:

1. A scheduled inspection of documents and an on-site inspection on CEZ Distribution Bulgaria AD activities regarding the license conditions fulfillment of carrying out the activity “electricity distribution” concerning connection procedures compliance. Due to

the large number of procedures started - 34 548, the verification period was extended till 28.02.2019;

2. A scheduled inspection of documents and an on-site inspection on Elektrorazpredelenie Yug EAD activities regarding the license conditions fulfillment of carrying out the activity "electricity distribution" concerning connection procedures compliance. Due to the large number of procedures started - 27 815, the verification period was extended till 28.02.2019;
3. A scheduled inspection of documents and an on-site inspection on Elektrorazpredelenie Sever EAD activities regarding the license conditions fulfillment of carrying out the activity "electricity distribution" concerning connection procedures compliance. Due to the large number of procedures started - 18 227, the verification period was extended till 28.02.2019.

Access price for renewable energy sources (RES) generators – solar and wind

In order to maintain the EPS balance, ESO EAD balances at any time the unintentional random deviations, including those resulting from accidents, electricity load, generation capacities and interconnection exchanges. In addition, the electricity generation from PvPP and WPP, unlike the electricity generation from HPP and biomass power plants, has a mutable nature, as it is heavily dependent on variable meteorological conditions and adds to the cost of ancillary services availability, to the costs for the full-bodied participation in power plants regulation, to the turn on/off costs and reserve costs.

These variations are able to offset each other, but very often are cumulative, leading to even greater deviations and require additional balancing costs.

On the basis of the data submitted by the transmission operator and the justification made, EWRC by Decision № Ц-11 of 01.07.2018 approved a price of access to the electricity transmission network of ESO EAD paid by electricity generators with dynamically changing generation (PvPP and WPP), connected to the electricity transmission and distribution networks, at the amount of 3.02 BGN/MWh.

Transmission and access to the electricity distribution networks

Regulating the network tariffs for the electricity distribution companies, EWRC applies incentive-based (revenue cap) regulation. Under Article 3, para.2, p.2 of OEPR when incentive-base (revenue cap) method is used, EWRC approves the revenue requirements of the energy utility for the first year of the regulatory period and analyses and may adjust them for each subsequent year of the regulatory period in compliance with Chapter three of OEPR. With EWRC Decision № Ц-11 of 1 July 2018, the revenue requirements and prices of the electricity distribution companies were approved for the first price period of the fifth regulatory period. In this regard, according to Art. 38, para. 3 of OEPR, the annual revenue requirements, prices respectively, can be adjusted with an inflation index for a previous period on the basis of data from the National Statistics Institute (NSI), according to its impact on the eligible operating expenses (excluding depreciation costs). They can also be adjusted by performance improvement ratio, using performance indicators (power quality and service quality) and the eligible revenue requirements of the energy company are adjusted for non-fulfillment of the target indicators set by EWRC and for the presence of difference between the forecast and realized investments, based on reliable data about the assets by type of activity according to the submitted reports and

/or inspections done. The annual revenue requirements, respectively prices, are adjusted by differences in the cost of buying and selling electricity, as well as the difference in costs caused by a change in the number of customers – Art. 38, para. 4 of OEPR. The annual revenue requirements may also change due to changes in the cost of electricity needed to offset the distribution technology costs, the cost of access and transmission to / through the transmission grid and the public service obligation.

3.1.4. Cross-border issues

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

Auction rules were developed in line with Regulation (EC) № 714/2009 on conditions for access to the network for cross-regional cooperation between operators, by introducing common rules and procedures for the allocation 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 a guidelines on capacity allocation and congestion management (Regulation (EU) 2015/1222). The purpose of these rules is to ensure optimal transmission networks bottlenecks management, promoting energy exchanges development and coordinated allocation of cross-border capacity through non-discriminatory market-based solutions.

At the Bulgarian-Romanian border in 2018 Transelectrica (Romania) organized monthly and annual auctions. The draft 2018 rules remained unchanged in the roles allocation as well as without a substantial change in the auctions conditions for the transmission capacities allocation between the two bidding zones. It was ESO EAD who used to organize the daily auctions at the Bulgarian-Romanian border in 2018. The 2018 rules remained unchanged in the roles allocation as well as without a substantial change in the auctions conditions for the transmission capacities allocation between the two bidding zones.

Agreements on bilateral coordinated auctions between ESO EAD and MEPSO (North Macedonia) and between ESO EAD and TEIAS (Turkey) were not concluded in 2018. In this regard, the independent transmission operator conduct annual, monthly and daily auction procedures to provide 50% of the commercial capacity for commercial exchanges at the relevant border.

At the Bulgarian - Greek border, ESO EAD organizes the monthly PTCR auctions and IPTO (Greece) organizes the annual and daily auctions.

At the Bulgarian - Serbian border ESO EAD organizes the annual and monthly transmission capacities allocation auctionsas well as the secondary market.

Daily auctions at the Bulgarian - Serbian border are to be organized by EMS (Serbia). The 2018 rules remain unchanged in the roles allocation and with no substantial change in the auctions conditions on the PTCR allocation between the two bidding zones.

Monitoring of national development plans and investment plans related to the 10-year network development plan of ESO EAD and PCIs

In line with the provisions of art.81d of EA, ESO EAD shall develop and annually submit at EWRC Ten-year network development plan (TYNDP) which is drafted in compliance with section three of the Electricity Power System Management Rules and under the requirements of ENTSO-E. The ten-year network development plan contains the main electricity transmission

infrastructure that is planned for construction, expansion, reconstruction and modernization over the next ten years. It provides timely and harmonious construction and commissioning of new elements in the transmission network in order to ensure economical and reliable operation of the electricity system, in compliance with security criteria and the current quality of electricity supply standards.

By EWRC Decision No ДПРМ -2 of 2 November 2018, pursuant to Article 21, Paragraph 3, Item 8 and Article 81d of the EA, Article 112 and Article 113 of Ordinance No. 3 of 21 March 2013 on licensing the activities in the energy sector, EWRC approved the ESO EAD 2018-2027 TYNDP of Bulgaria.

Cooperation in relation to the application of EC Regulations

Over the past year, EWRC carried out a number of activities and adopted a number of decisions in the electricity sector related to the implementation of the regulations and network codes defining the single European electricity market. The network codes and related guidelines have been developed to meet the three objectives of the European energy policy - to ensure security of supply, to create a competitive internal electricity market and to reduce carbon emissions in the electricity sector. All these to happen, network codes and related guidelines need to be applied and implemented across Europe.

Regulation (EC) 2015/1222 of the Commission of 24 July 2015 establishing a guideline on capacity allocation and congestion management (Regulation (EC) 2015/1222) sets out rules on cross-border capacity calculation, defining and reviewing of bidding zones and the operational day-ahead and intraday markets. Regulation 2015/1222 sets out the day-ahead and intraday markets allocation capacity methods and outlines the way that capacities can be calculated in different zones. The introduction of harmonized cross-border markets will result to a more efficient single European market and will benefit consumers. These rules provide the basis for the implementation of a single energy market in Europe.

Commission Regulation (EU) 2016/1719 of 26 September 2016 establishing a guideline on forward capacity allocation. The European Commission adopted Regulation (EU) 2016/1719 establishing a guideline on forward capacity allocation (Regulation (EU) 2016/1719, Regulation FCA), which became mandatory in the EU Member States on 16 October 2016. Regulation (EU) 2016/1719 establishes guidelines that set detailed rules on interconnection capacity allocation in the forward markets, on the establishment and operation of a single allocation platform at European level, that should provide long-term transmission rights and on the possibility to return the long-term transmission rights for further allocation or transfer them from one eligible market participant to another.

Regulation (EU) No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integrity and transparency (REMIT). Regarding the REMIT requirements, in 2018 the EWRC experts continued maintaining the national register of market participants. The register provides each market participant with a unique identifier and contains sufficient information to identify the market participant, including details relating to the VAT identification number, registered office and the person responsible for its operational and trading decisions. The market participants registration through EWRC is done using the application Centralised European Register of Energy Market Participants, CEREMP, created by ACER.

3.1.5. Compliance

The regulatory authority obligation under art.37, § 1, d of Directive 2009/72/EC on the application and control of the execution of legally binding decisions of the European Commission or ACER, has been transposed in EA, art. 21, para.1, item 31.

Under Article 21, para.1, item 27 of EA, EWRC shall monitor the obligations performance of the independent transmission operator. In cases where the independent transmission operator fails to perform its obligations, pursuant to Art.21, para.3 of EA and within its regulatory powers, EWRC shall:

1. impose sanctions for discrimination behaviour of the operators in favour of the vertically integrated undertaking;

2. monitor the communications between the operator and the vertically integrated undertaking, in order to guarantee that the operator fulfills its obligations;

3. act as an authority for dispute settlement between the vertically integrated undertaking and the operator;

4. request information and documents, related to the commercial and financial relations, including loans between the vertically integrated undertaking and the operator;

5. approve commercial and financial agreements between the vertically integrated undertaking and the operator in cases, where they influence the market development conditions;

6. request justfication by the vertically integrated undertaking on the presented by the compliance officer decisions about the network development plan or some investments done by the operator, including observation of the requirements for non-discrimination behaviour in favour of the vertical integration undertaking;

7. carry out inspections on sites of the vertically integrated undertaking and the operator;

8. approve the TYNDP, monitor and control its implementation under the conditions and procedure of the Ordinance under Art. 60;

9. assign all or certain tasks of the independent transmission operator to an independent system operator, proposed by the network owner, in case the operator violates systematically its obligations, related to the independence requirements, under Chapter Eight "a", Section II of EA, including in cases of systematically discriminatory behaviour in favour of the vertically integrated undertaking.

Pursuant to Art.21, para.4, point 4 of the Energy Act and in connection with the exercise of its powers to regulate the activities of the Independent System Operator of the transmission system, EWRC shall approve a 10-year transmission network development plan and shall monitor and control its implementation under OLAES conditions and procedure. Under Art.114, para 1 and and seq. of OLAES, EWRC shall monitor and evaluate continuously the implementation of the ten year network development plan. When the independent transmission operator fails to execute an investment under the ten-year network development plan, which was to be executed in the following three years, EWRC shall require a written explanation about the reasons, together with supporting data and documents. EWRC, by a decision, shall oblige the operator to execute the investments in question, if they are still to be executed, as well as to provide the costs reimbursement for such investments through the network services prices, unless the non-execution is due to overriding reasons beyond the control of the network operator.

ACER provides for an integrated framework within which NRAs cooperate in order to perform their tasks at EU level. This framework is designed, among others, to support the development of EU-wide rules (network codes) and their consistent implementation across the European Union, and other activities where NRAs are expected to coordinate their actions.

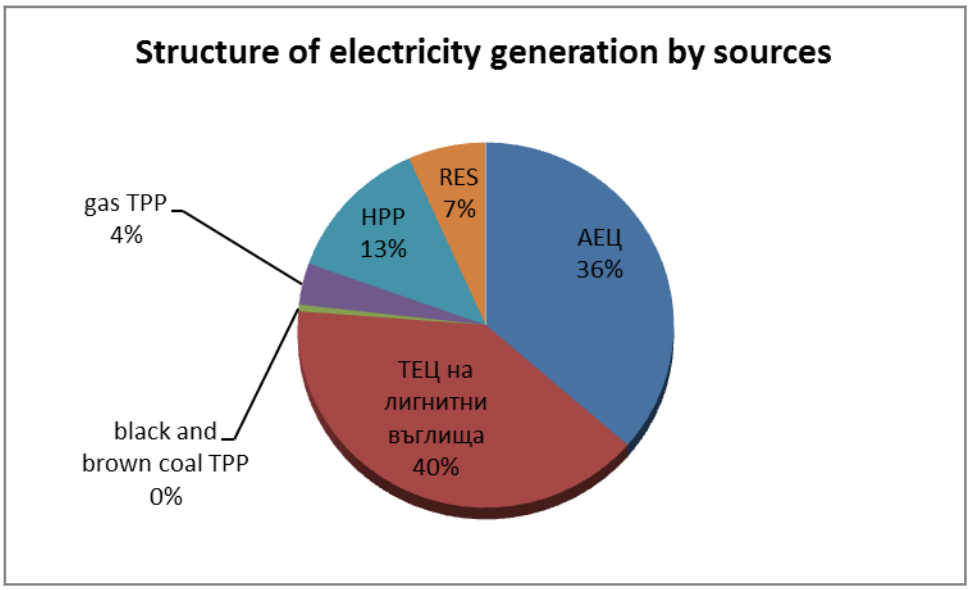
3.2. Promoting competition

In 2018 EWRC continued to try creating conditions for the development of the electricity market complete liberalization process, leading to effective market competition development. The regulator focused its efforts on eliminating barriers to full market opening and ensuring the necessary regulatory framework. The amendments and supplements to EA and ERSA played an important role in this respect, which allowed transition to the next stage of the electricity market liberalization. All electricity generators with total installed capacity of and more than 4 MW, including RES and HECG, the transmission/distribution system operators and the public supplier were obliged to sell all quantities of generated electricity exceeding the regulated market needs, respectively to buy the necessary technological costs energy amounts on /from the different power exchange segments.

3.2.1. Wholesale market

Electricity generation

In 2018 the generated in Bulgaria electricity, depending on the primary resource and the generation technology used, was as follows:



The largest share in the overall structure of the installed capacity in the country was that of the conventional thermal (lignite) power plants – 40 %, next was the nuclear power share – 36 % and the share of energy generated from renewable sources (hydro – 12 %, wind, solar and biomass – 7%).

When analyzing the electricity generation dynamics in 2018, compared to 2017, two trends could be observed. In some of the primary electricity generation technologies there was a decline in the energy generation. Decrease was realized in the electricity generation from lignite coal – 5.04% less, gas TPP – 4.05% less and RES – 7.96% less. The second trend shows an increase in the NPP generation by 3.89% and in the HPP by 58.81%. In 2018, compared to 2017, the needed for the PSPPP pumping operation was reduced by 34.34%, and the ratio of produced

in Bulgaria electricity, was 42 002 868 MWh in 2018 compared to 40 630 018 MWh in 2017 or an increase of 3.38%.

Power Plant Type	Installed capacity in MW		Net electricity generated in MWh		Change in% generated electricity
	2017	2018	2017	2018	2016=100
1. NPP	2 000	2 000	14 718 368	15 291 204	3.98
2. Lignite coal TPP	4 119	4 119	17 605 902	16 717 934	-5.04
3. Black and brown coal TPP	362	362	246 111	245 766	-0.14
4. Gas TPP	563	983.265	1 609 514	1 544 381	-4.05
5. HPP including:	3 204	3 204	3 395 131	5 391 795	58.81
5.1. PSHPP generation	1 399	1 399	899 639	986 848	9.69
5.2. PSHPP pumps	933	933	647 485	425 127	-34.34
6. RES including:	1 822	1 825	3 054 993	2 811 788	-7.96
6.1. WPP	701	701.35	1 414 564	1 315 757	-6.98
6.2. PvPP	1 043	1 046	1 325 472	1 238 788	-6.54
6.3. Biomass PP	78	76.847	314 956	257 243	-18.32
***Total**: 1+2+3+4+5+6*	12 070	12 493	40 630 018	42 002 868	3.38

The installed capacity and net electricity generation data in 2017 and 2018 were provided by Electricity System Operator EAD.

Main electricity generation market players (primary electricity) are the subsidiaries of BEH EAD: NPP Kozloduy EAD, TPP Maritza East 2 EAD and NEK EAD; Bobov Dol EAD, AES 3 Maritza East 1 EOOD and ContourGlobal Maritza East 3 AD participate in the market with over 5% market shares.

Competition environment assesment

EMR regulate two indexes to assess the market competition environment by measuring the market concentration - Hirschman Herfindal Index - HHI[1] and Concentration Index C3[2].

Based on the data provided by ESO EAD, it was found that for the reported period the total market share of the three main market players was over 82% based on the energy produced.

According to the EMR thresholds at CR3 concentration index value of 70 to 100%, the market is defined as highly concentrated with limited competition. Efficient competition exists when no market participant, alone or jointly with other commercial participants, has a significant impact on the market. With the existing market structure with the dominant participation of BEH EAD's subsidiaries, the 2018 concentration indexes are high - the Hirschman Herfindal Index is above 4700, defining the market as highly concentrated with limited competition in the primary electricity generation market.

[1] Hirschman Herfindal Index is calculated as the sum of market shares of the market participants raised in a square.
[2] The index is calculated as a sum of the first three market participants with the largest market share.

Physical electricity exchanges

In 2018, the largest electricity exchange volumes within given schedules by market participants from Bulgaria were in direction Greece, followed by North Macedonia.

EXCHANGES	
Realized commercial electricity exchange by schedules of market participants	
border/direction	
	2018
Bulgaria - Romania	1 748 940
Romania - Bulgaria	876 509
Bulgaria - Serbia	2 044 026
Serbia - Bulgaria	603 179
Bulgaria – North Macedonia	2 220 507
North Macedonia - Bulgaria	229 376
Bulgaria - Greece	3 896 681
Greece - Bulgaria	224 866
Bulgaria - Turkey	1 021 001
Turkey - Bulgaria	1 183 688
Physical electricity exchange between Bulgarian EPS and neighbouring EPSs	
border/direction	
	2018
Import	
Physical border – total	2 223 157
Including:	
- Romania	2 083 540
- Serbia	38 522
- North Macedonia	395
- Turkey	93 111
- Greece	7 589
Export	
Physical border – total	10 029 707
Including:	
- Romania	1 212 105
- Serbia	2 304 215
- North Macedonia	2 332 318
- Turkey	2 062 672
- Greece	2 118 398

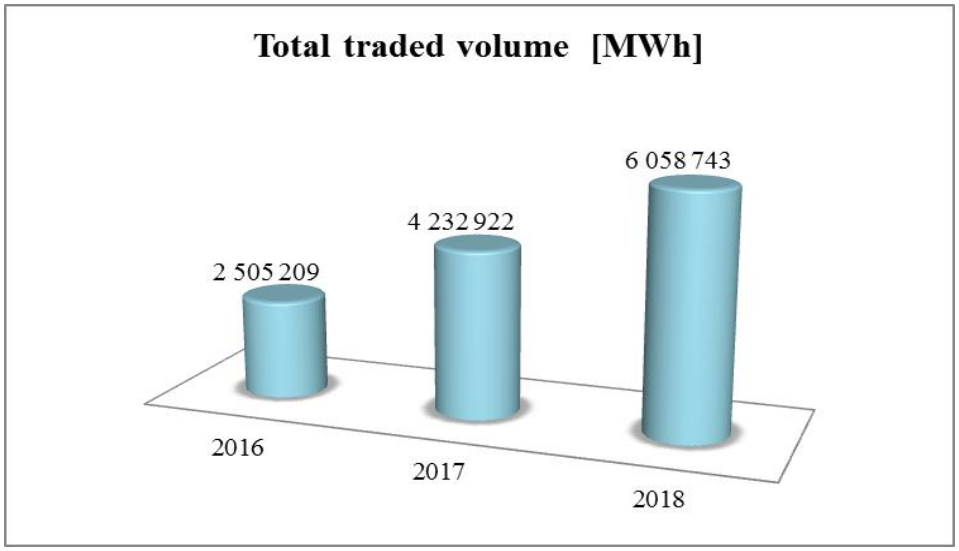
Total physical exchange of electricity imports in 2018 was 2 223 157 MWh. That decrease was greatest at the borders with Serbia and Romania. Total physical exports were 10 029707 MWh.

Wholesale market development through trading on the Bulgarian Independent Energy Exchange EAD (IBEX EAD)

Day-ahead market

Comparative analysis of the trade and prices of the day-ahead market for the period 2016-2018

For the period January 2016 - 2018, traded volumes of basic energy on the day-ahead market (DAM) recorded a steady upward trend within 143.13% growth in 2018 compared to 2017 and a 241.84% increase compared to 2016.

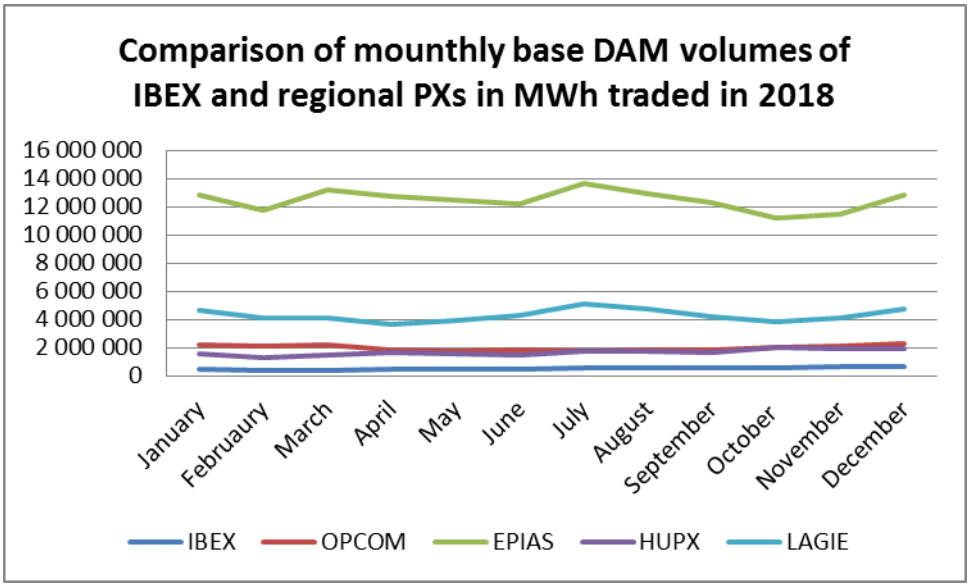


The total traded volume increased from 4 232 922 MWh in 2017 to 6 058 743 MWh in 2018. The weighted average annual price in 2018 was 82.84 BGN / MWh. The traded primary energy amount in the day-ahead market in 2018 was 4 698 677 MWh, which represents 77.55% of the total traded energy.

DAM anuual data	2016	2017	2018
Traded and supplied qualities [MWh]	2 505 209.2	4 232 921.6	6 059 050.3
Weighted average price	67.30 BGN	79.56 BGN	82.84 BGN
Market participants number	46	54	73

BEH EAD subsidiaries: Kozloduy NPP, Maritza East 2 TPP and NEK EAD provide 92.78% of the primary energy, which defines the holding's dominant position in the primary energy supply in the day-ahead market. The company is not subject to real competitive pressure by the other 7 primary electricity suppliers, as only 2 of them have more than 2% market share.

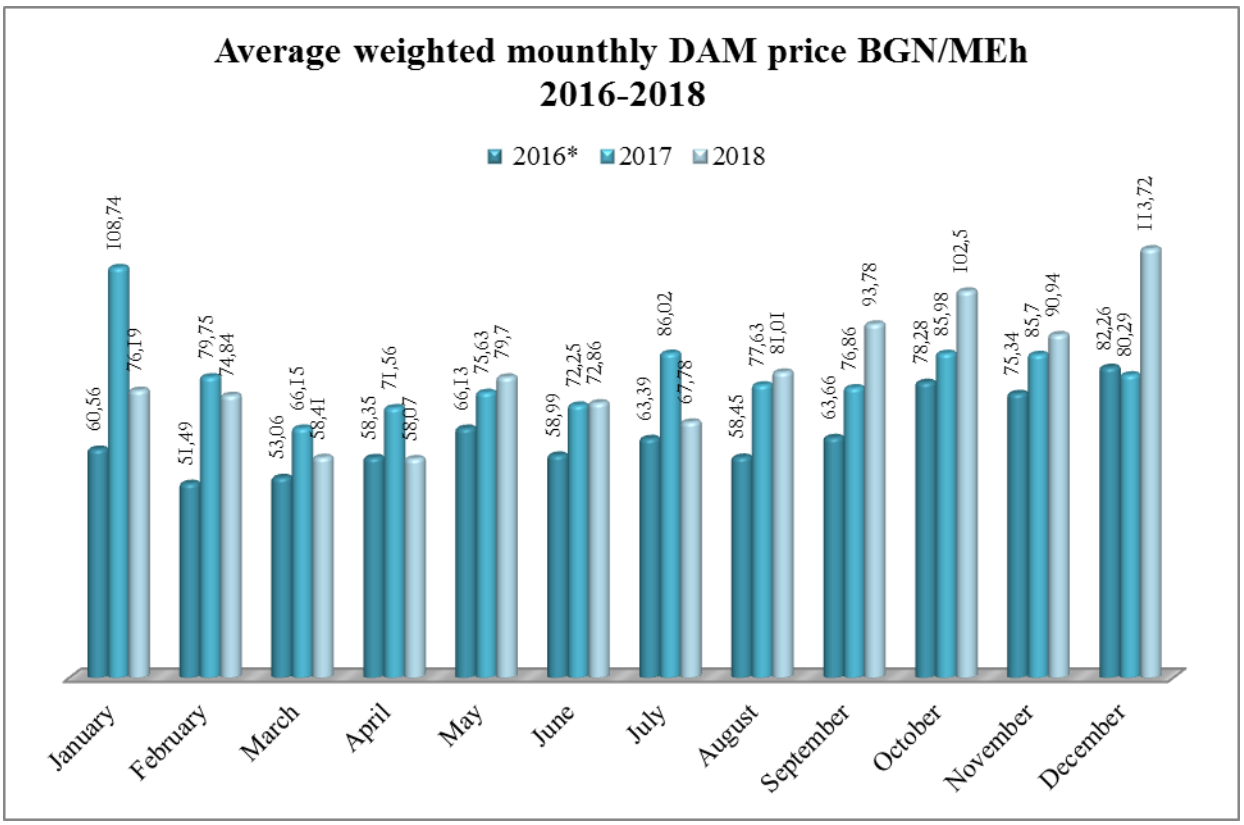
For the period 2016 - 2018, the number of active DAM participants increased from 46 in 2016 to 73 in 2018. Despite the remarkable growth of the traded volumes, they are significantly lower than the traded base quantities on the power exchanges in the region.



Month 2018	IBEX	OPCOM	EPIAS	HUPX	LAGIE
January	421 262	2 216 518	12 796 171	1 589 261	4 680 792
February	390 637	2 084 970	11 709 760	1 301 131	4 128 797
March	386 902	2 141 149	13 227 556	1 475 135	4 136 234
April	475 580	1 802 029	12 709 717	1 641 063	3 638 561
May	415 388	1 706 289	12 435 312	1 537 398	3 912 063
June	454 420	1 841 644	12 144 131	1 469 567	4 315 354
July	547 203	1 752 198	13 663 777	1 759 832	5 064 852
August	581 891	1 806 207	12 957 019	1 752 494	4 726 820
September	547 594	1 852 552	12 272 894	1 648 878	4 180 045
October	590 270	1 966 824	11 196 707	1 980 430	3 839 531
November	607 330	2 105 471	11 493 375	1 884 400	4 064 769
December	640 266	2 264 981	12 790 169	1 869 194	4 765 597
2018 Average	**504 895**	**1 961 736**	**12 449 716**	**1 659 065**	**4 287 785**

Comparative analysis of the weighted average monthly price of the day-ahead market for the period 2016-2018

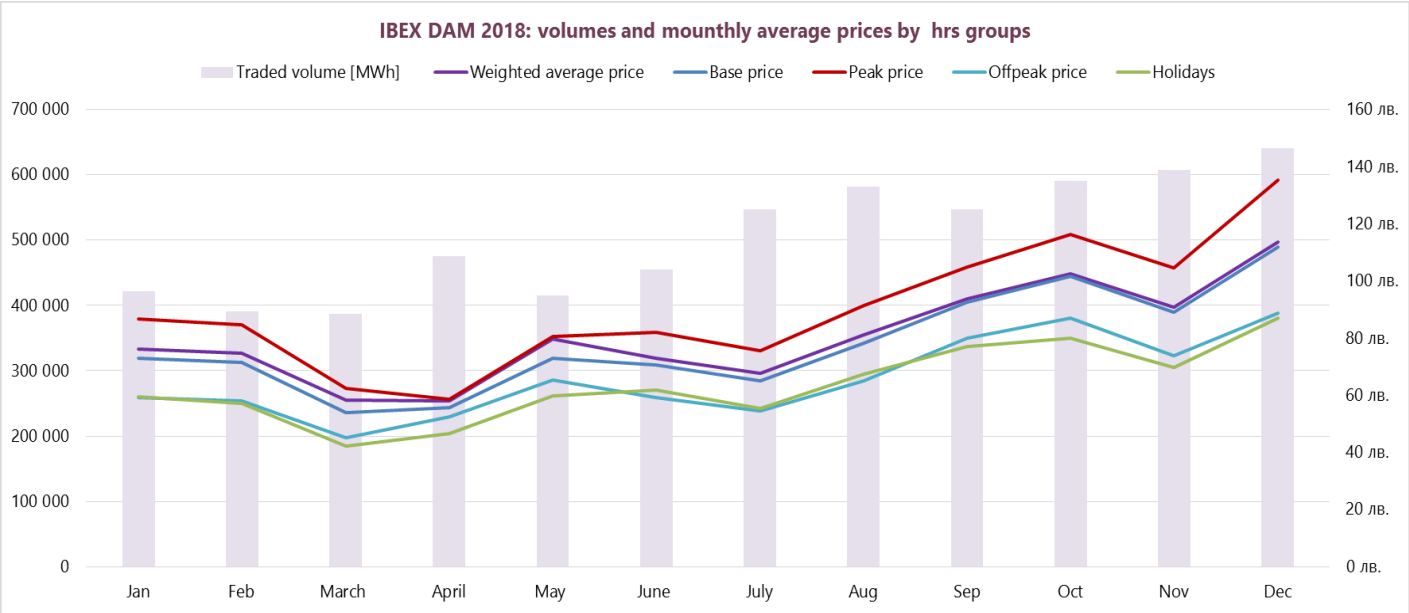
For the period 2016 - 2018, the weighted average monthly prices gradually increased. After August 2018, there was a sharp increase in the weighted average monthly price, which in September was 93.78 BGN/MWh and 102.50 BGN/MWh in October, reaching by the end of the year the highest level for the whole three-year period - 113.72 BGN/MWh. That represented an increase of 143.64% compared to December 2017.



∗January data is not full month data

Traded monthly quantities analysis and types of monthly prices on DAM

The chart below summarizes the day-ahead market traded quantities by months in 2018 and the respective monthly prices achieved - weighted average price, base price, peak price, off peak price and holiday price.



Source: IBEX

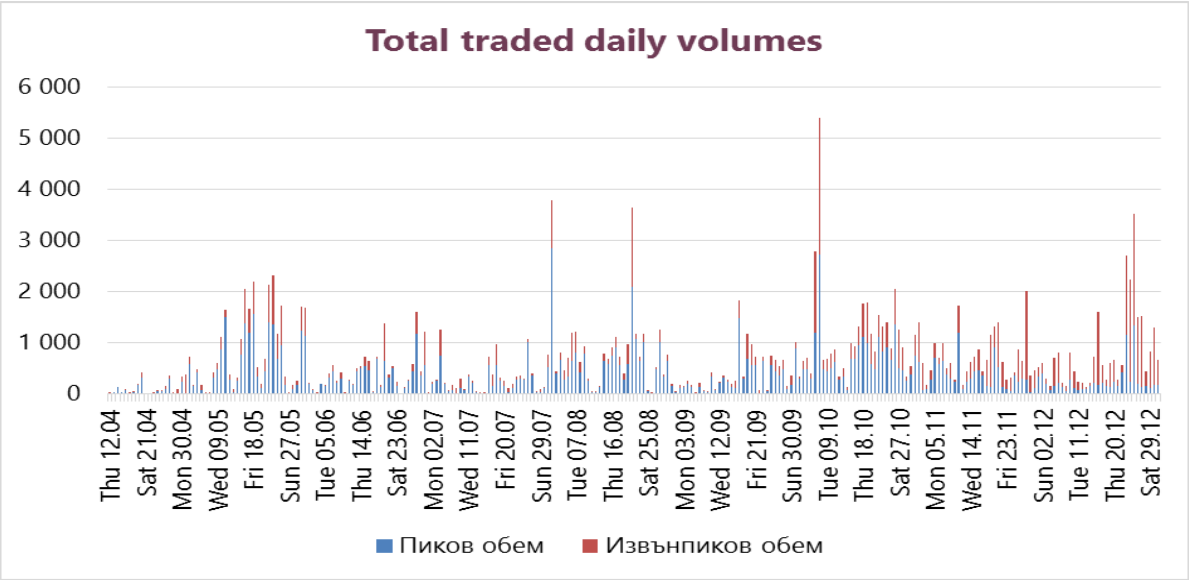
In 2018 a steady upward trend was reported in the quantities traded after July till December, with a slight decline in September.

The trend of increasing the traded quantities is in line with the trend of increasing all types of prices reported by IBEX EAD - weighted average price, base price, peak price, off peak price and holiday price. There is no significant difference between the weighted average and the base price. The trend of holiday and off-peak prices is paralleled without significant price differences. There was a decrease in all prices in November compared to October and a significant increase in December, when all prices reached the highest values for 2018.

Intraday market

On 11 April 2018, IBEX EAD started the trading on the intraday market segment (ID). Till the end of 2018 the segment trading had been steadily developing. The total quantities traded in 2018 were 170 774 MWh at an average weighted price of 84.90 BGN/MWh. NEK EAD held a significant share of the traded quantities - 61%. NPP Kozloduy EAD and TPP Maritza East 2 EAD had traded quantities below 1%. The active participants on the intraday market were 43.

Intraday Annual Data	**2016**	**2017**	**2018**
Traded and supplied qualities [MWh]			170 773.5
Weighted average price			84.90 BGN
Market participants number			43



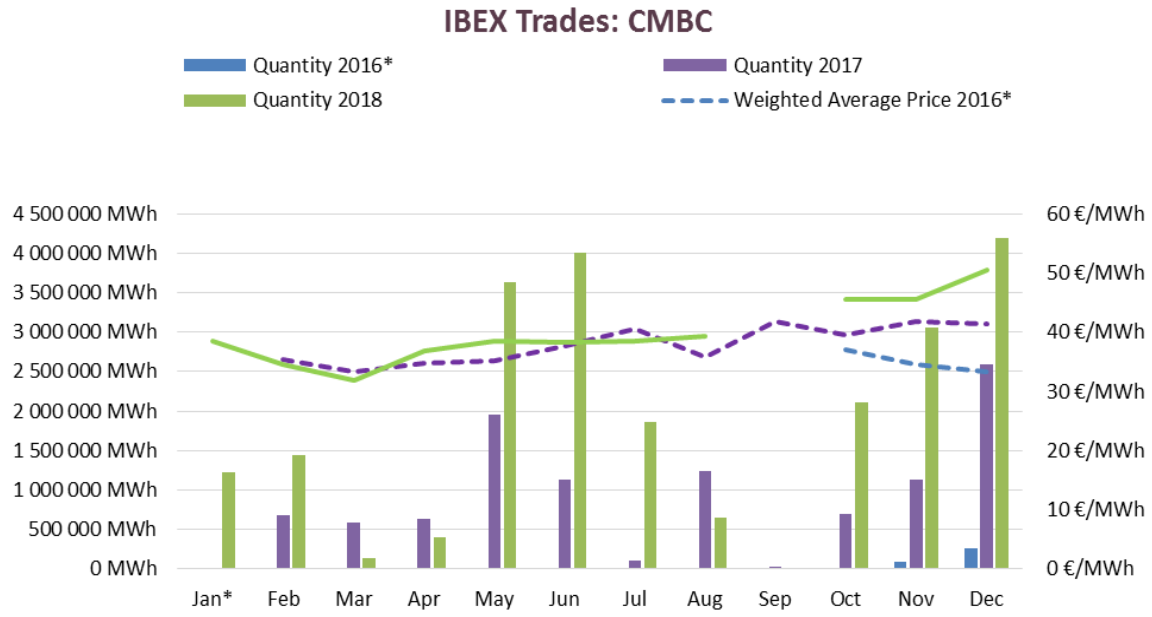
peak volume *off-peak volume*

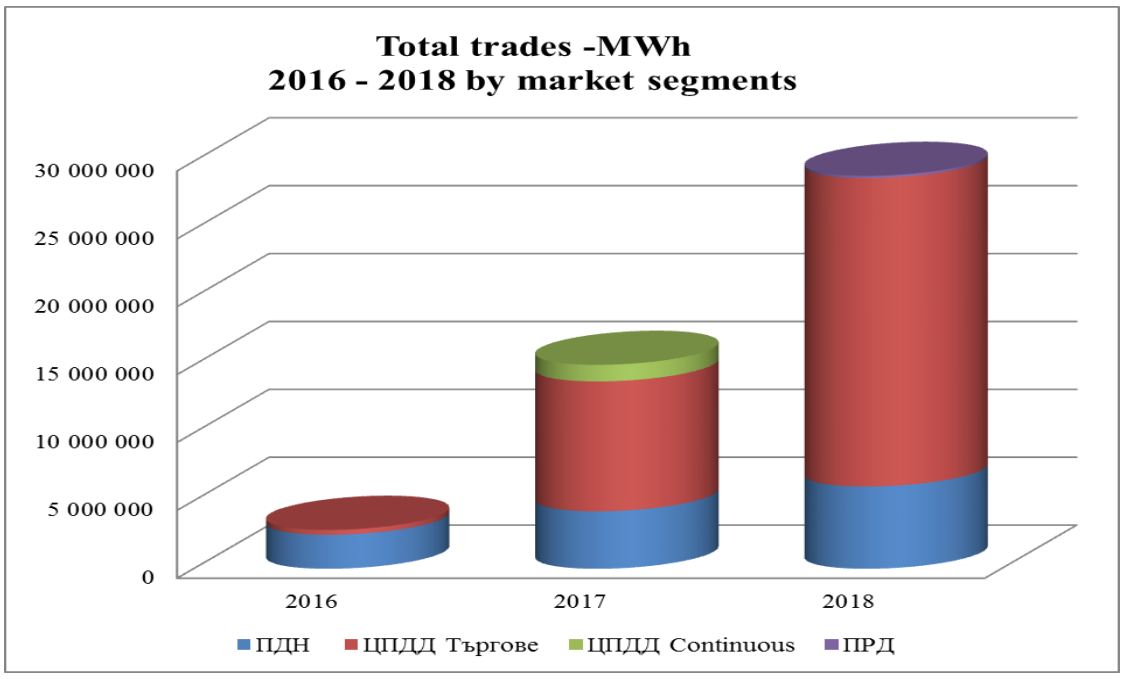
Significant quantities were traded in August, October and the end of December. The peak volume was 102 300.7, which is 60% of the total volume traded.

Annual data	**2018**
Total traded volume [MWh]	170 773.5
Peak volume	102 300.7
Off-peak volume	68 472.8
Weighted average price	84.90 BGN
Average base load	82.33 BGN
Average price peak load	88.59 BGN
Average price off-peak load	74.49 BGN
Average daily amount	654.3
Average hourly amount	27.3
Lowest price for 1 hour	0.00 BGN
Highest price for 1 hour	296.3 BGN

Centralized bilateral contracts market segment

In 2018 the quantities traded in the centralized bilateral contracts market segment (CBCM) increased, with the largest quantities being traded in May-June and November-December. A total of 22 711 566 MWh were traded, of which 16 981 026 MWh were delivered, 89% of which were offered by BEH EAD companies. NPP Kozloduy EAD had the largest share - 62.48%. The weighted average price had been also steadily growing and at the end of 2018 it reached 98.91 BGN/MWh, which was an increase of 2.38% compared to December 2017.



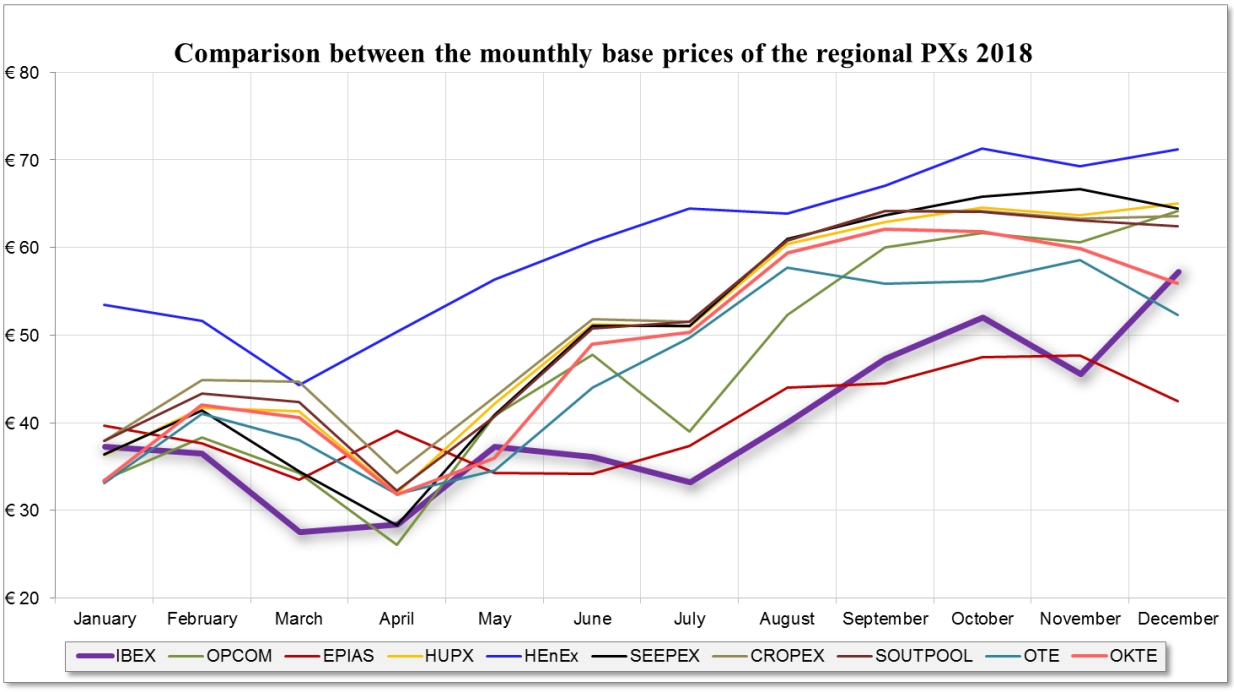


ПДН- DAM; ЦПДД търгове – bilateral contracts auctions; ПРД - ID

Traded volumes	DAM	CBCM auctions	CBCM continuous	Intraday
2016	2 505 209	362 165		
2017	4 232 922	9 566 734	1 221 670	
2018	6 059 050	22 711 566		170 774

The largest share of the traded quantities was realized at the CBCM auctions. That share in 2017 was 63.68% and increased to 78.47% in 2018.

CBCM auctions – traded prices - BGN/MWh												
Month	**January**	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
Weighted average price 2016*										72.55	67.50	65.02
Weighted average price 2017		69.15	65.11	68.05	68.87	73.51	80.15	81.24	81.66	77.30	81.84	80.82
Weighted average price 2018	75.22	67.58	62.22	72.16	75.25	74.94	75.36	76.78		88.87	89.24	98.91



In 2018, when comparing IBEX EAD's base monthly prices with those of the regional exchanges, the following trends emerged: the average annual price remained the lowest compared to the prices reached on regional power exchanges. Comparing the monthly prices, after July, an unfavorable price trend emerged, when prices started to rise sharply and at the end of the year reached a value of 57.26 EUR/MWh, which exceeded the prices of the power exchanges in Turkey, the Czech Republic and Slovakia.

3.2.2. Retail market

Major role in the retail market competition development play distribution system operators, who should ensure a level playing field for market participants in their access to distribution networks and to customers. These conditions are crucial in order to develop efficient market competition that attracts investment and benefits consumers.

Four electricity distribution network operators hold licenses for electricity distribution to customers connected to the low and medium voltage distribution grids in the respective retail areas:

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

Electricity supply market participants in the retail market

From supply point of view, the market consists of three groups of suppliers:

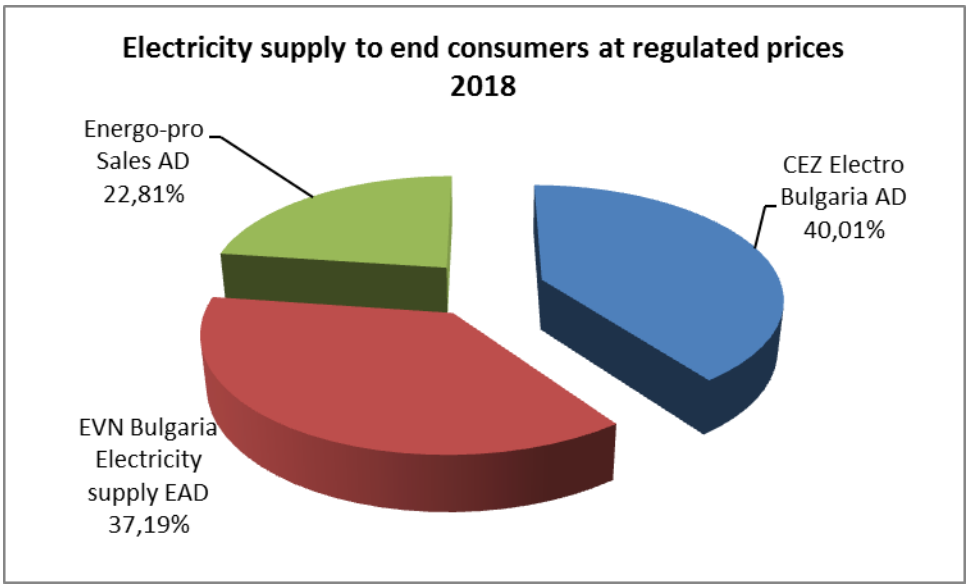
- Supplier of last resort (SLR) – a supplier that guarantees the universal service provision as a last resort in accordance with a license obtained from EWRC. It has the obligation to supply electricity to customers who are connected to the distribution network and have not chosen an electricity trader or when the electricity trader they had chosen fialed 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 cites of household and non-household end consumers connected to the electricity distribution network at regulated prices determined by EWRC;
- Free market supplier - a trader who supplies electricity to household and non-household customers at prices based on demand and supply.

Three vertically integrated energy companies actively operate in the energy retail market.

End suppliers market shares are calculated on the basis of reported by them energy sales to household and non-household customers by years for the period 2016-2018.

MARKET SHARE			
End Suppliers	**2016**	**2017**	**2018**
CEZ Distribution Bulgaria AD	40.71%	40.79%	40.01%
EVN Bulgaria Electricity Supply EAD	35.24%	35.83%	37.19%
Energo-Pro Sales AD	24.05%	23.38%	22.81%

Analysing the market share data, it can be concluded that *CEZ Electro Bulgaria AD* has the largest market share, but it drops slightly between 2016 and 2018, from 40.71% to 40.01%. In 2018 the market share of *ENERGO-PRO Sales AD* was 22.81% and the one of *EVN Bulgaria Electricity Supply EAD* was 35.24%. *Electrodistribution Zlatni Piasaci AD* was not included in the analysis because it has a market share below 1% and has no significant impact on the market.



In terms of demand, the retail market consists of two segments - household customers and non- household customers.

The total number of non-household customers in 2018 was 611 717, which is a growth compared to 2017 with 606 055. The total consumption of non-household customers was 13 TWh.

The total number of household customers in 2018 was 4 495 921, which is a growth compared to 2017 when they were 4 476 040. Total electricity consumption in the retail market was 11 068 GWh. The annual electricity consumption of a household customer was 2 438 kWh.

Retail electricity market suppliers

As a result of the measures taken to liberalize the electricity market, new entrants have been actively entering the retail market over the last few years, placing competitive pressure on incumbent suppliers, part of the three vertically integrated companies. In 2018 the number of active suppliers in the market was 51, which enables retail market customers to take advantage of the growing diversity of suppliers and to choose from different offers. In the household market segment the active suppliers in 2018 were 36, and in the non-household were 47.

In the retail market the C3 index standed at 83% and in the non-household market the concentration index was 70%. New market entrants still had small market shares. For example, in the non-household market, 3 suppliers had a market share of over 5%. The number of suppliers with a market share below 1% was 28. The concentration index HHI was 3 493 for the households market and 1 771 for the non-household market.

Entry/exit of market suppliers

Two new suppliers entered the household market in 2018 and other six exited the market. Eight suppliers entered the non-household market and 12 other exited the market. From the entry and exit data analysis of the market suppliers, the following conclusions can be drawn: on one hand, the significant number of new entrants in the market in 2018 is a sign that it is sufficiently open, with low entry barriers. On the other hand, in 2018 large number of participants (12) exited the market. This is a signal that the retail market is dynamic and unsustainable, which can lead to customer insecurity and loss of confidence in the benefits of the free market. As a result, customers in the two segments may not only refrain from moving from the regulated market to the free market, but also those who are in the free market may go back to the regulated market. Such customer behaviour in the two market segments may hamper the market liberalization process.

The conclusion that customers may easily lose confidence in the benefits of the free market can be illustrated by the switching supplier index.

Switching the supplier

The switching supplier index is one of the key indicators to assess competition development in the retail energy markets. Typically, the index has high values for well-developed markets that guarantee customers a wide choice of suppliers and offers. An unobstructed change of supplier is a sign that market participants are subject to efficient competitive pressure that can provide quality customer service. Low values of the switching supplier index, on the other hand, show that there is no efficient competition in the market or its development is hampered.

SWITCHING DATA	
Total number of switchings (as to 31 Dec 2018)	109 056
Including:	
Total number of household customers that switched supplier	2 748
Total number of household customers that switched supplier within the group	727
Total number of household customers that moved to the free market together with a supplier from the group	81
Total number of household customers that moved to the free market together chosing a different supplier	964
Total number of household customers that moved from the free market to the regulated market at regulated prices	1 108
Number of household customers that switched supplier within the free market	**1 613**
Including:	
Within the economic group	337
With another supplier	1 276
Total number of non-household customers that switched the supplier	**105 698**
Number of non-household customers that switched supplier on the free market	**72 365**
Number of non-household customers that returned to the regulated market at regulated prices	**24 496**

From the data in the table it can be concluded that in 2018 there was a tendency to return back to the regulated market for a significant number of customers, both from the household and non-household segments. In the household segment 1 108 customers have returned to the regulated market from the free market and 1 014 customers moved from regulated to free market. In the non-household segment a total of 105 698 customers have changed the supplier and 24 496 have returned to the regulated market.

The 2018 data on the index "number of customers moved from free to regulated market (at regulated prices)" indicates an unfavorable trend which, if persisting in the coming years, could hamper further retail market liberalization.

This trend would not be favourable if we should to consistently follow the policy on the long-term goal of full electricity market liberalization in Bulgaria and its joining the European internal energy market, part of the Energy Union.

3.3. Security of supply

Implementation of safeguard measures under Article 42 of Directive 2009/72/EC

According to art.4 para.2 item 4 and 5 of EA, the Minister of Energy determines by an order mandatory indicators of the electricity supply reliability level, including measures for their implementation, and defines the necessary new generation capacities and promulgates an inventory listing these capacities in State Gazette.

Given the established regional cooperation and operational arrangements for the coordinated allocation of cross-border capacity with neighbouring system operators, as well as the agreed mutual support at emergencies, the safe and reliable operation has been ensured both in the internal and external electricity markets.

3.3.1. Monitoring the supply and demand balance

The Bulgarian ten-year transmission network development plan ensures timely and harmonious construction and commissioning of new elements of the electricity transmission network for economical and safe operation of the EPS, observing safety criteria and current electricity supply quality standards.

NPP and TPP are part of the base capacities. They provide ancillary services, guarantee the safety of the EPS operation and the security of electricity supply, regulated by Directive 2009/72/EC and Directive 2005/89/EC.

Measures envisaged to be taken in order to ensure the safety of the EPS operation, are:

- to build new balancing sources and expand existing ones characterized by high maneuverability in terms of turning on/off and high speed of change in operational active capacity; these are to participate in load regulation in the condition of modified structure of the generation capacities involved in the generation - consumption process;
- participation of industrial users as suppliers of tertiary reserve through the balancing energy market mechanism.

These measures relate both to an increase in construction and commissioning investment and increase in balancing costs.

In order to secure the operation of the electricity transmission network, in compliance with the above mentioned principles (ensuring the necessary reliability of the electricity transmission and the stability of generation capacities), the following new power lines in the Bulgarian 400kV network ought to be constructed:

- substation Maritsa East – substation Nea Santa (Greece);

- substation Plovdiv – substation Maritsa East;
- substation Maritsa East – switchyard TPP Maritsa East 3;
- substation Maritsa East – substation Burgas;
- substation Burgas – substation Varna.

The construction of the new interconnection 400kV substation Maritsa East – substation Nea Santa (Greece) is agreed by the two neighbouring countries and the main benefits are the following:

- increase the net transfer capacity (NTC) between Bulgaria and Greece, observing the safety criterion "n-1";
- increase the capacity (NTC) between Bulgaria and Turkey due to a large decrease in the transit flow from Bulgaria to Greece through Turkey;
- facilitating the implementation of the annual repair programs of the electricity transmission networks of Bulgaria and Greece;
- improving the conditions of mutual energy assistance between the two countries in case of system accidents or critical balance.

4. NATURAL GAS MARKET

4.1. Network regulation

In exercising its regulatory powers EWRC is guided by the following principles: stimulating investment in infrastructure in a non-discriminatory way, equal access for new entrants to the networks and the market; achieving high standards for services of public interest, securing customers' choices and switching, providing protection of energy services consumers; creating incentives for energy companies to improve the effectiveness of regulated activities.

EWRC exercises control over the activities of the independent transmission operator and the distribution system operators in terms of compliance with the adopted by EWRC:

- *Ordinance № 3 of 21 March 2013 on licensing of activities in the energy sector*;
- *Ordinance № 4 of 5 Nov 2013 on natural gas transmission and distribution networks connection*;
- *Natural Gas Transmission Networks Management and Technical Rules;*
- *Rules on Natural Gas Distribution Networks Management;*
- *Rules for access to the gas transmission and/or gas distribution networks and storage facilities.*

Bulgartransgaz EAD gas transmission system and the gas market are balanced according to the adopted by EWRC *Natural gas trading rules, Natural gas market balancing rules* and *Daily imbalance charge calculation methodology* and the approved by EWRC interim measures: balancing platform alternative, a temporary fee for imbalance and tolerance in accordance with the requirements of Regulation (EU) No 312/2014.

4.1.1. Unbundling and TSO certification

In accordance with Directive 2009/73/EC, Bulgaria has chosen the "independent transmission operator" (ITO) model, according to which the transmission operator and network assets are separated into a separate legal entity within the vertically integrated undertaking.

Bulgartransgaz EAD is an independent entity within the vertically integrated undertaking

Bulgarian Energy Holding EAD (BEH EAD) and Bulgartransgaz EAD owns the assets used for the activity "natural gas transmission" including the gas transmission network; the activities of the transmission network operator Bulgartransgaz EAD are unbundled legally, functionally and financially from the other activities of the vertically integrated undertaking.

In line with EWRC Decision № C-4 of 22 June 2015 and Decision № C-6 of 5 November 2015, pursuant to article 10, paragraphs 1 and 2 of Directive 2009/73/EC, Bulgartransgaz EAD is certified as an independent transmission operator (ITO) of the transmission system in Bulgaria. EWRC continuously monitors the company's compliance with the legal independence requirements and its duties as an independent transmission operator.

4.1.2. Technical functioning

Bulgartransgaz EAD is a combined operator performing the activities of natural gas transmission and storage. The company holds licenses № Л-214-06 and № Л-214-09 of 29.11.2006 for the activity “natural gas transmission” and license № Л-214-10 of 29.11.2006 for the activity “natural gas storage”. Bulgartransgaz EAD is the operator of the:

- national gas transmission network on the territory of Bulgaria transporting gas to the natural gas distribution networks and business customers;
- transit gas transmission network for gas transportation through Bulgaria to the neighbouring countries of Romania, Turkey, Greece and North Macedonia;
- underground gas storage facility Chiren for the storage of natural gas primarily intended to cover seasonal fluctuation in demand and to ensure natural gas security of supply.

The transmission network operator ensures: the unified management and reliable operation of the gas transmission network; the transmission via the gas transmission network and its metering; the maintenance of gas transmission network facilities and equipment in accordance with the technical and safety requirements; the transmission network development in accordance with long-term forecasts and gas supply development plans and beyond them, where economically justified and ancillary networks maintenance and development. In order to ensure reliable, safe and efficient operation of its natural gas transmission networks and associated facilities and reliable transmission, Bulgartransgaz EAD performs its activities in accordance with the regulations, technical norms, applicable standards in this area and safety work rules, respecting European rules on environmental protection and transmission system development plans. Bulgartransgaz EAD by its Central Dispatching Division provides unified management, reliable operation and transmission of natural gas transmission system and its metering in compliance with the quality requirements.

To ensure the security and reliability of gas networks operation the independent transmission operator performs preventive activities in the gas transmission networks and related facilities.

The transmission system operator shall prepare a schedule of planned repairs and reconstruction of gas networks facilities, which contains data on the type of repairs, their expected duration, as well as alleged restrictions on natural gas transmission. The transmission system operator develops emergency situations procedures as well.

TSO provides preventive actions in time of accidents and emergency situations. To this end, it develops and implements an emergency plan for carrying out rescue and emergency recovering works in case of disasters, accidents and catastrophes, which is consistent with the Emergency action plan approved by Order of the Minister of Energy as a competent authority. In the event of crisis situations when the transmission networks modes are disrupted, the operator

acts according to the said Plan, developing and coordinating the regime schemes of the network operation, reporting and analysing all entry-exit boundary conditions (bids, pressure, volumes, etc.), the gas transmission networks status, weather forecast, neighbouring transmission systems status and inertness degree. TSO also shall manage the required human and technical resources for the technological process, maintaining readiness for emergency notification and emergency situations in Central Dispatching Division, operating regions, compressor stations and the underground gas storage facility. In accordance with Regulation (EU) 2017/1938 of the European Parliament and of the Council of 25 October 2017 year concerning measures to safeguard security of gas supply and repealing Regulation (EU) No 994/2010 (Regulation (EU) 2017/1938), in 2018 EWRC experts participated in the work of the established interdepartmental group within the Ministry of Energy for updating the Preventive action plan and an Emergency action plan.

In pursuance of Art.81d of EA and art.22 of Directive 2009/73/EC the transmission network operator has developed the Ten-year network development plan for the period 2018-2027, following public consultations with stakeholders. The Plan is consistent with the upcoming changes in production, consumption and exchanges with other countries. Investment plans for regional networks and networks within the European Union have been taken into account. In the TYNDP Bulgartransgaz EAD foresees investments in gas transmission infrastructure and in Chiren UGS. The Plan contains all the investments decided to be performed and the new investments to be made over the next three years, as well as a schedule for the investment projects implementation. By Decision № ДПРМ-7 of 25 July 2018 EWRC approved the TYNDP of Bulgartransgaz EAD for the period 2018-2027.

The total length of distribution networks is 4916 km. Typical for them is that they are new, built in the last twenty years. Given that distribution networks are still under development they are loaded below their design capacity.

4.1.3. Network and LNG tariff for connection and access

Connection tariffs

EWRC regulates the terms and conditions of price formation for connection to gas distribution and transmission networks.

Prices for connecting customers to the gas distribution networks (households and industrial customers) are formed by customers groups according to the requested maximum capacity and pressure and the relevant eligible costs of the consumer group. The costs of additional equipment for connection of a customer shall be on its account.

Transmission network connection prices of extraction pipeline networks, gas storage facilities, liquefied natural gas facilities, production units of gas from renewable sources, distribution networks and non-household customers outside the above groups are individual and include the actual costs of constructing the network connection facilities of the undertaking concerned. Tariffs are formed on the basis of the costs incurred for all connection activities, the value of gas pipelines and facilities in accordance with the regulatory and technological requirements ensuring a direct connection from the technologically approved connection point of the respective network to the customer/customers group point of connection.

Access and transmission through the gas transmission system

In connection with the introduced by Bulgartransgaz EAD entry-exit tariff model for pricing natural gas access and transmission through the gas transmission system since 1 October 2017, in 2018, EWRC carried out an ongoing monitoring of the activity of the natural gas transmission operator, analysing monthly the data provided by the TSO on allocated capacities,

reserved capacities and their usage by the users, as well as on the operating income. The prices for access and transmission of natural gas through the gas transmission networks owned by Bulgartransgaz EAD for gas year 01.10.2018-30.09.2019 are determined in accordance with EWRC Decision № НГП-1 of 1.08.2017 and were adopted by Decision under item 6 of Protocol № 276 of 29.05.2018 of the Management Board of Bulgartransgaz EAD.

In 2018, capacity notification and allocation for both interconnection points and internal system entry and exit points were realized at RBP regional capacity booking platform.

Bulgartransgaz EAD organizes the gas balancing market in accordance with the provisions of the EA, Natural gas trading rules and Natural gas market balancing rules, concluding transactions for purchase and sale of balancing gas with network users at prices determined under the Daily imbalance charge calculation methodology. In this regard, EWRC approved a cost component in the natural gas balancing price for Bulgartransgaz EAD for gas year 01.10.2018-30.09.2019.

Access and storage of a storage facility

EWRC regulates the prices of access and storage of natural gas storage facilities in compliance with EA, the Ordinance on natural gas prices regulation (ONGPR) and the Guidelines on pricing access and storage of natural gas storage facilities, applying "rate of return on capital" regulation adopted by EWRC. Gas access and storage prices, which the operators of gas storage facilities, respectively a combined operator, offer for one and the same service to different customers under equivalent terms and conditions, ensure compliance with the principle of non-discrimination to all network users and at the same time the special characteristics of the national market are taken into account.

Access and transmission to the gas distribution networks

EWRC approves the prices for natural gas transmission and distribution to final consumers on gas distribution companies' proposals according to ONGPR.

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 (household and non-household), consumption evenness and unevenness and the relevant consumption.

In the cases of access provision by the respective gas distribution network operator and use of gas facilities owned by non-household customers, under the Energy Act, this shall be done after a contract conclusion and at a price determined under a methodology approved by EWRC.

4.1.4. Cross-border issues

The effective opening of the internal market and the development of a regional gas market are a prerequisite for the establishment of a single gas market in the EU, which is in the interests of citizens and industry. Key to that regional gas market establishment is the construction and putting into operation of the infrastructure projects included in the list of projects of common interest published by EC.

In accordance with Regulation (EU) No 347/2013 and in connection with an investment request from Bulgartransgaz EAD, EWRC adopted a Decision determining the cross-border investment costs allocation for a project of common interest 6.8.2 "Necessary Rehabilitation,

Modernization and Expansion of the Bulgarian Transmission System" - Phase 2. The main project objective is the existing gas infrastructure on the territory of Bulgaria to be adapted to the new market requirements and infrastructure development plans in the region, thus contributing to market integration increase, competitive gas market establishment and stimulating trade development.

In 2018, EWRC approved the Ten-Year Network Development Plan of Bulgartransgaz EAD for the period 2018-2027, which is a basis for the development of the Regional Network Development Investment Plans (GRIPs) and the EU Community Network Development Plan prepared by the European Network of Transmission System Operators (ENTSO-G).

Transmission infrastructure in the Republic of Bulgaria

Legend:

- **National gas transmission network**
- **Transit gas transmission network**

Under EA art.170, para.1, item 9 the transmission system operator has the duty to provide sufficient cross-border capacity aiming the European gas transmission infrastructure integration, satisfying all economically feasible and technically realistic capacity requests, keeping in mind the observance of gas supply security requirements.

EWRC has approved an updated list of important points in the transmission system of Bulgartransgaz EAD in accordance with the requirements of Annex I to Regulation (EC) №

715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) № 1775/2005.

Pursuant to art.21, para.1 item 28 of EA, EWRC cooperates with regulatory authorities of other countries on cross-border issues – EU Member states and with ACER and concludes cooperation agreements with NRAs.

With regard to the realization of the Gas Iinterconnection Greece - Bulgaria (IGB) EWRC experts participated in meetings in Brussels together with the representatives of EC, the Greak regulator RAE and ICGB AD; they also participated in a meeting organized by EC on Gas Interconnection Bulgaria-Serbia (IBS) project and in the plenary of the Central and South-Eastern Europe Connectivity (CESEC) gas working group in Brussels, Belgium.

With a view to developing cooperation with the regulatory authorities of neighbouring countries, and also on the basis of agreements signed in past years, EWRC has maintained the coordination of actions between the Balkan regulators aimed at meeting European requirements, achieving consistency of regulatory regimes in terms of cross-border infrastructure and avoiding conflicts in national decision-making. In this context, and in view of the ongoing processes of establishing regional markets and their integration as a step towards a single European market in the natural gas, electricity and water and sewerage services sectors, EWRC initiated the establishment of a permanent Balkan Regulators Advisory Forum (BAF). To this end, a dedicated meeting was held on 1-2 March 2018 in Veliko Tarnovo, Bulgaria, where representatives of the Bulgarian, Greek, Serbian, North Macedonian and Montenegrin regulators expressed strong support for the initiative and shared their expectations that this would stimulate fruitful multilateral dialogue. On 29th September 2018 in Thessaloniki, Greece, the regulatory authorities of Bulgaria, Greece, Serbia, North Macedonia and Montenegro signed an agreement on the establishment of a permanent advisory forum of the national regulatory authorities of the countries in the Balkan Peninsula.

In 2018, in connection with ACER and CEER activities the following actions were implemented in the natural gas sector:

- completion of the required data for the natural gas retail market on the AEGIS/AREA platform;
- collection, analysis and delivery of data for the ACER and CEER market monitoring report;
-providing additional information about the projects of common interest for Bulgaria.

4.1.5. Compliance

The power of the Regulator under art.41, §1 d of Directive 2009/73/EC is transposed in art.21, para.1, item 31 of EA, namely to comply with and implement any relevant legally binding decisions of EC and ACER.

EWRC controls the compliance of the licensed activities with the conditions of the issued licenses, by performing preventive control of the procedures for issuing licenses under the Energy Act. EWRC continuously monitors the compliance of the licensed activities with the licensing conditions by conducting inspections of the energy companies and exercising ex-post control over the implementation of the decisions taken by the Energy Act. In that regard, EWRC controls the execution of the activities subject to licensing under the Energy Act as well as the fulfillment of the obligation to provide access to facilities and/or installations and to gas extraction network; it also controls the provision of access to these facilities and network in the cases covered by EA. EWRC requires information from all licensees and performs on-going

control over: number of interruptions, duration of interruptions, service quality, number of complaints, time to respond to complaints, time to correct errors in measurement, etc.

Regarding the role of Bulgartransgaz EAD as a certified independent transmission operator, the power of EWRC to regulate its activities are stipulated in art.21, para.3 of EA. EWRC also monitors the obligation of the ITO compliance officer to supervise the compliance programme implementation and to submit quarterly reports and an annual report indicating the measures taken. It is evident from the reports by the compliance officer received at EWRC in 2018 that there were no irregularities in the compliance programme implementation. In pursuance of Art.81d of EA, EWRC monitors and assesses the implementation of the Ten-year network development plan. EWRC shall examine whether the Plan covers all investment needs identified during the consultation process, and whether it is consistent with the TYNDPs in the European Union. When the ITO fails to execute an investment, which is to be executed in the following three years under the TYNDP, EWRC has the power to require the operator to make the investments, in case they are still needed and to provide their reimbursement through the network services prices, unless the failure is due to compelling reasons beyond the network operator's control.

4.2. Promoting competition

Under the Energy Act, no license is required for the activity of "natural gas trade", thus the natural gas trade market is 100% open. As per art.176, para.1 of EA, extractive industries or natural gas traders, on one hand, and the public provider, natural gas suppliers, storage facility operators, LNG operators, traders or customers - on the other, may enter into natural gas transactions with each other at freely negotiated prices.

Under art.180, para.1 of EA and the provisions of the Rules for access to the gas transmission and/or gas distribution networks and storage facilities, all customers have the right to choose a natural gas supplier, which is also guaranteed under the terms of the licenses for the activity of "natural gas supply by end supplier".

By the end of 2018, there were no household or non-household customers connected to gas distribution networks that had switched their natural gas supplier.

4.2.1. Wholesale markets

Key gas market participants in the country are:

- Bulgartransgaz EAD – combined gas operator, performing gas transmission and gas storage activities;
- Bulgargaz EAD – gas public provider in Bulgaria, providing gas supplies to end suppliers and customers connected to gas transmission network at prices regulated 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 the transmission/distribution network operators;
- Gas distribution companies – performing activities "natural gas distribution" and "natural gas supply by end supplier" by supplying natural gas to customers connected to the respective distribution networks in the licensed territories;
- Non-household customers connected to the gas transmission network.

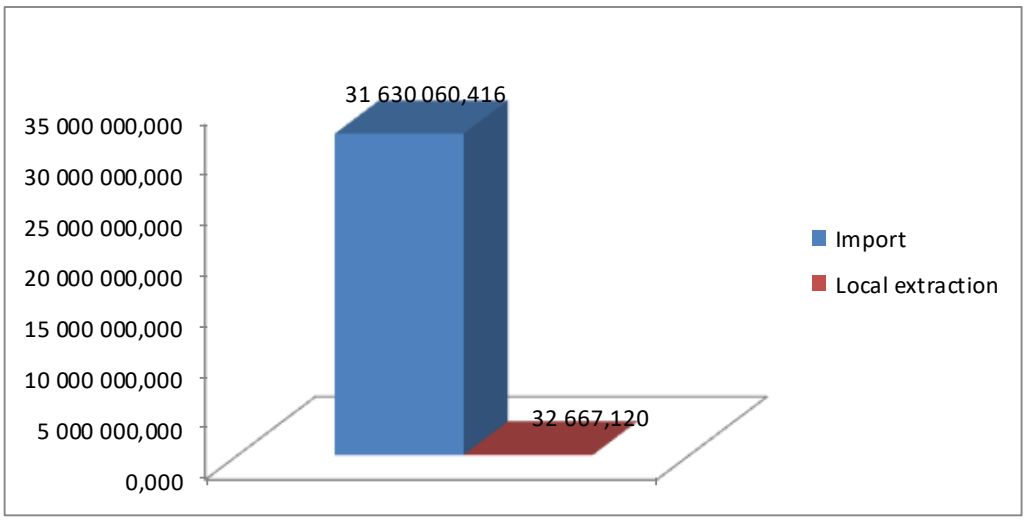
In 2018 Bulgartransgaz EAD transported 31 932 099.518 MWh natural gas from imports and local production, including for end customers in the territory of the country and for export outside the territory of the Republic of Bulgaria.

The natural gas quantities from imports and local production transported by Bulgartransgaz EAD intended for export outside the territory of the Republic of Bulgaria were 269 371.982 MWh.

Year	2018
Import, MWh	177 370.259
Local extraction, MWh	92 001.723
Total, MWh	**269 371.982**

The natural gas quantities from imports and local production transported by Bulgartransgaz EAD intended for the domestic market of the Republic of Bulgaria, were 31 662 727.536 MWh.

Year	2018
Import, MWh	31 630 060.416
Local extraction, MWh	32 667.120
Total, MWh	**31 662 727.536**



Natural gas delivery and supply in the Republic of Bulgaria is carried out in a transmission network owned by Bulgartransgaz EAD and distribution networks owned by the respective distribution companies. In the transit gas pipeline owned by Bulgartransgaz EAD natural gas transmission is carried out to the territories of Turkey, Greece and North Macedonia.

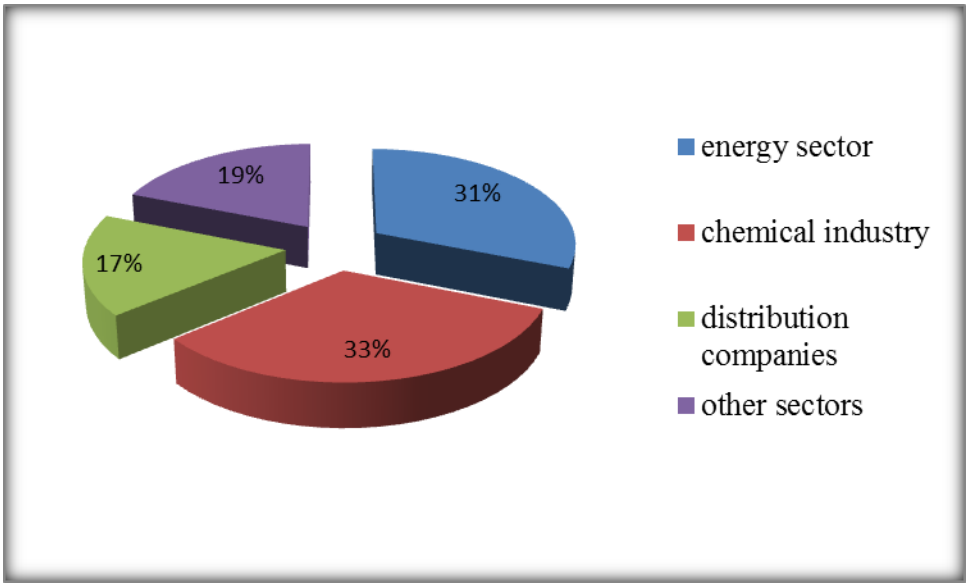
In 2018 natural gas supplies in the local market were realized by the public provider Bulgargaz EAD, by Petroceltic Bulgaria EOOD, Exploration and Production of Oil and Gas AD and natural gas traders.

Bulgargaz EAD imports natural gas for the domestic market under the conditions of Contract № 02-12-13 of 15 Nov 2012 for gas supplies with OOO Gazprom Export.

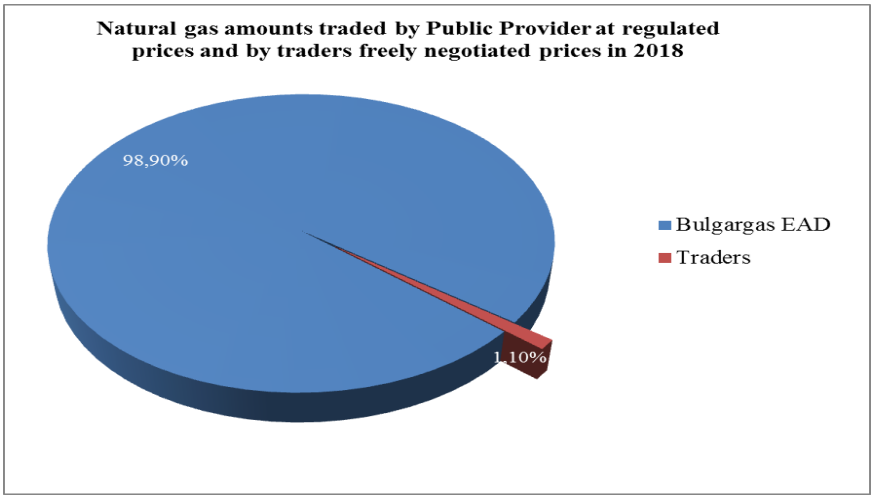
Natural gas quantities realized by Bulgargaz EAD in 2018 in the domestic market under regulated prices were 32 078 242.843 MWh.

The consumption structure by sectors was the following:

- Energy sector – 9 954 598.558 MWh or 31%;
- Chemical industry – 10 674 636.732 MWh or 33%;
- Distribution companies – 5 446 597.263 MWh or 17%;
- Other industries – 6 002 410.290 MWh or 19%.



The public provider Bulgargaz EAD sells natural gas at regulated by EWRC prices and its share in the natural gas sale in 2018 was 98.90%. The remaining 1.10% was realized by traders at freely negotiated prices. The following chart presents the ratio of the natural gas quantity sold by the public provider at regulated prices (to gas distribution companies and customers connected to the gas transmission network) and by traders at freely negotiated prices (to gas distribution companies and customers).



Oil and Gas Exploration and Production AD has sold 165 029 MWh of natural gas from local extraction, of which 38 495 MWh were sold to three gas distribution companies and 126 534 MWh to natural gas traders.

Petroceltic Bulgaria EOOD has sold 55 205.264 MWh of natural gas from local extraction to traders.

Natural gas transmission in the national transmission network

In 2018 the main users of the "natural gas transmission" service in gas transmission and distribution networks in the country were the public provider Bulgargaz EAD, extraction companies and traders. Natural gas supply to consumers in the Republic of Bulgaria is carried out mainly via the national gas transmission network, a complex facility consisting of 1835 km gas pipelines and high pressure gas branches, three compressor stations – CS Kardam-1, CS Valchi Dol and CS Polski Senovets, with total installed capacity 49 MW, gas regulation stations, metering stations, electrochemical protection systems, communication system, information system and other auxiliary facilities. There was no physical congestion in the gas transmission network at national and cross-border level in 2018. The project capacity of the national gas transmission network is 7.4 billion m^3 and by the end of the year about 45% of the system's maximum technical capacity has been used. The maximum working pressure is 54 bar.

Due to the introduction of the entry-exit tariff model and in accordance with the requirements of the European and national regulatory framework, the unit of measure used by Bulgartransgaz EAD for reporting natural gas to national exit points has been changed from a unit measuring quantities (nm^3) to metric unit of energy (MWh).

The natural gas quantities transported through the gas transmission network in the country in 2018 were 6.80% less than the previous year 2017, as a result of reduced consumption in the country and reduced quantities of local extraction.

Natural gas transit transmission to the borders with Greece, Turkey and North Macedonia

Gas transmission network for transit transmission of natural gas whose main purpose is transmission of natural gas to the neighboring countries is also used for the transmission of gas to customers connected to the network in Bulgaria. It comprises high pressure gas pipelines of total lentgh of 953 km, six compressor stations – CS Kardam-2, CS Provadia, CS Lozenets, CS Strandja, CS Ihtiman and CS Petrich, with total installed capacity of 270 MW, electrochemical protection system, cleaning facilities, communications system, information system and other ancillary facilities. It transports mainly natural gas from an entry point at the Bulgarian-Romanian border to the exit points to Turkey, Greece and North Macedonia. Its technical capacity for natural gas transit transmission in all three directions altogether amounts to 17.8 bcm/y and the maximum working pressure is 54 bar. Quantitative and qualitative analysis of natural gas inflows in the transit direction is performed in gas metering stations Negru Voda 2 and 3. The natural gas transmission in the corresponding transmission direction is performed at Malkochlar GMS, Strimonohori GMS, and Zhidilovo GMS for Turkey, Greece and North Macedonia, respectively.

Bulgartransgaz EAD has constructed and brought into commercial operation two reversible stations for measuring the quantities of natural gas between the two natural gas transmission networks, Ihtiman GMS and Lozenets GMS, with which the operator can transfer natural gas to the users of those networks.

In 2018 transit volumes transported through the transmission network to neighboring

countries were 14.301 billion m³ or 12.73% less than those in 2017 (16.387 billion m³) and a decrease in the quantities transported to Turkey and North Macedonia has been observed. In 2018 gas quantities transited were as follows: Turkey 10.756 billion m³ or 18.42% less compared to 2017; Greece 3.291 billion m³ or 12.47% more compared to 2017; North Macedonia 254 million m³ or 7.72% less compared to 2017.

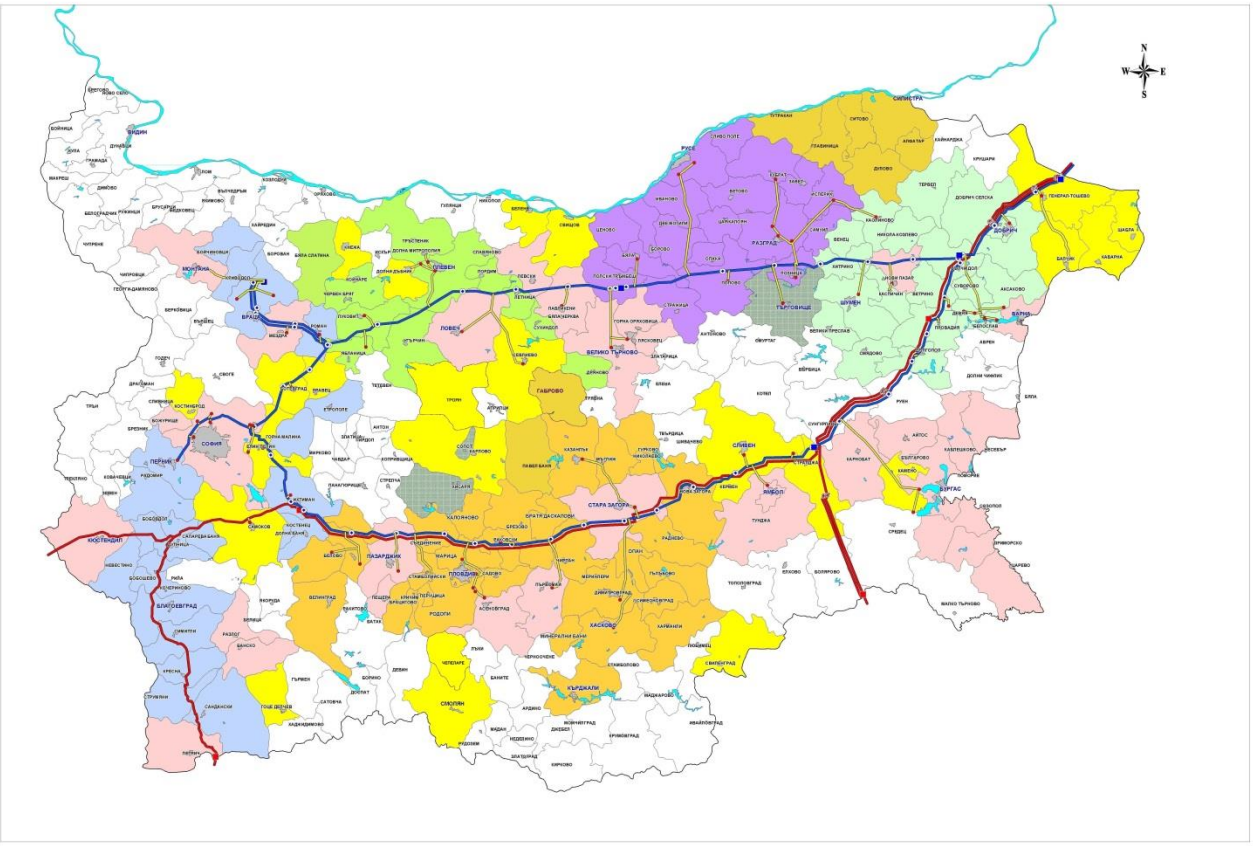
Natural gas storage

Natural gas storage activity is performed in the only one in the country underground gas storage facility Chiren (Chiren UGS), owned by Bulgartransgaz EAD. Technological process associated with the natural gas storage activity is a seasonal (cyclical) one and represents injecting gas from/to the underground gas storage. In 2018, 319 million m^3 were injected to Chiren UGS by Bulgartransgaz EAD and 324 million m³ were withdrawn, and to 31.12.2018 in the gas storage facility there was availability of 1112 million m ³ natural gas, of which 750 million m ³ buffer gas.

4.2.2. Retail market

Natural gas supply in the territory of the Republic of Bulgaria is carried out in the gas transmission network owned by Bulgartransgaz EAD for the customers directly connected to it and in gas distribution networks owned by the respective gas distribution companies.

At the end of 2018, 24 companies encompassing 35 areas are licensed on the territory of Bulgaria covering 172 municipalities representing 65% of all municipalities in the country. Nine of the companies carry out supply through compressed natural gas supply to customers in parts of the municipalities that have no connection to the transmission network. The map below illustrates the location of the licensed territories for the activities of natural gas distribution and supply.



The needed natural gas distribution infrastructure in the country is still in process of construction and household consumers connected to the natural gas distribution network are few. Household consumption is very low - 3.25 % of the total consumption in the country. EWRC applies a regulatory mechanism, which ensures incentives for the natural gas distribution enterprises to continue the development of the networks and the connection of new consumers aiming the increase of consumption. One of the incentives enhancing market competition is that EWRC approves marginal prices for the gas sale and the gas distribution companies have the right to sell to consumers at prices lower than the approved, which promotes market competition.

EWRC permanently monitors the market with the view to ensure non-discrimination between all market participants, as well as between participants of one and the same category and to promote efficient competition and proper market operation. Regarding the latter, when exercising its controlling powers, EWRC carries out scheduled inspections of the energy companies, as well as surprise inspections in case of filed complaints and signals.

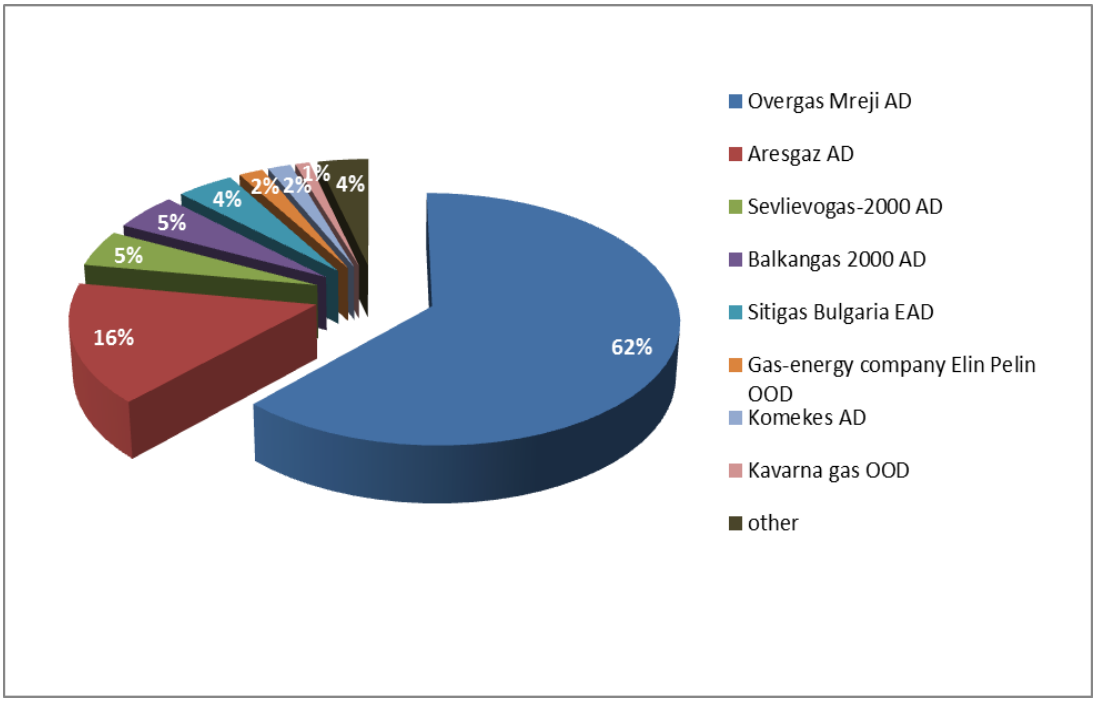
The Regulator monitors and inspects the gas distribution companies regarding the compliance of the set in their approved business plans parameters connected with their duties under the licenses for the activities of natural gas distribution and supply by end supplier.

Gas distribution companies' activity results for 2018 are given below:

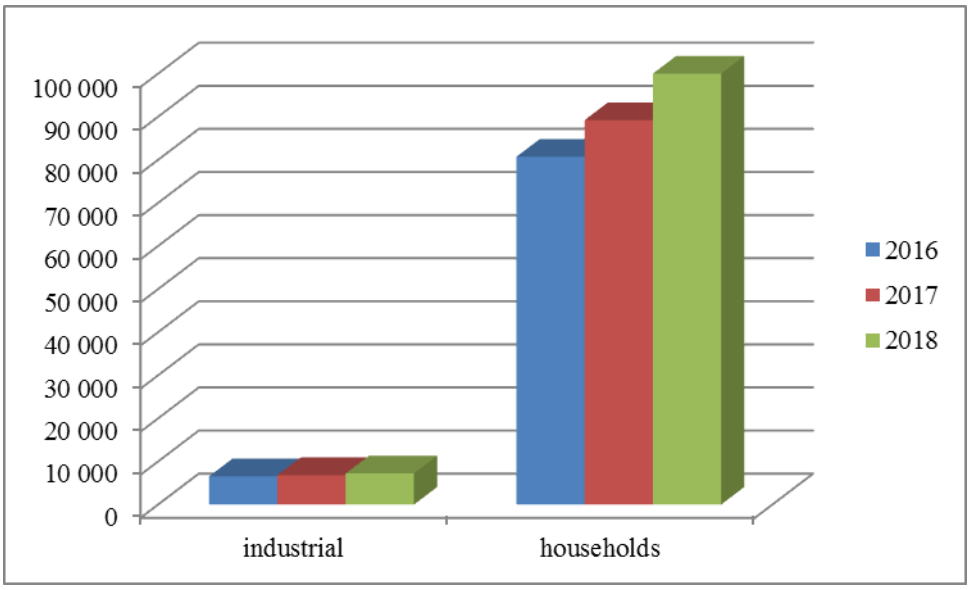
Parameter	Constructed network in 2018	Investment 2018	Number of consumers (accumulative) as of 31.12.2018		Natural gas consumed, thousand norm m³ 2018	
Gas distribution companies	m	Thousand BGN	Non-households	Households	Non-households	households
Total:	**160 080**	**23 376**	**7 230**	**100 439**	**432 243**	**98 893**

According to data of distribution companies, total number of natural gas customers in 2018 was 107 669, 100 439 (93%) of them households and 7 230 (7%) non-household customers.

The breakdown of natural gas consumers by companies' share in servicing them is shown in the graph below:



Overgas Mrezhi AD serves most of the customers – 66 860, which is 62% of all natural gas consumers in the country, followed by Aresgas AD with 16%, Sevlievogas - 2000 AD and Citygas Bulgaria EAD with 5%. The value of Herfindahl-Hirschmann index, which is a commonly accepted measure of market concentration and monopoly existence in terms of natural gas supplied by gas distribution companies to household consumers in Bulgaria, is 4316 and shows high market concentration. The index was indicated for calculation in the CEER annual gas indicators. The number of customers (household and non-household) of gas distribution companies in 2018 rose from 96 057 in 2017 to 107 669, which is 12% increase per year. The number of household customers increased by 13% and of non-household - by 6%.



In 2018, an increase in the number of household customers has been observed compared to 2017, which is associated with the implementation of the project *Demand Side Residential Energy Efficiency Through Gas Distribution Companies In Bulgaria* (Project DESIREE GAS). This project aims to provide a dedicated and efficient mechanism to support gasification of Bulgarian households in accordance with the requirements of Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC. It encourages the most efficient technologies and supports the transition from carbon-intensive sources of energy to natural gas, thereby reducing energy consumption and carbon emissions in the residential sector in Bulgaria. DESIREE GAS project is funded by the Kozloduy International Support Fund, which is managed by the European Bank for Recconstruction and Development, with the Ministry of Energy being the project's Managing Authority. The project started in September 2015 and was scheduled to last 36 months. On 5 July 2018 the duration of the project was extended to June 2020. With effect from 9 July 2018, grants for Bulgarian households' gasification under the project DESIREE GAS increased from 20% to 30% of eligible expenditure for building installation. In addition, the connection fee is fully funded.

4.2.3. Recommendation on supply prices, investigations and measures to promote effective competition

The provision of Article 30, para.2 of EA stipulates that the prices of electricity, natural gas and services provided by energy companies are not subject to regulation by EWRC when the later finds out the existence of competition, which creates pre-conditions for the free negotiation of prices under market conditions for each energy sector activity. In this respect, as far as natural gas sector is concerned, pre-conditions for existence of market competition are provided by the legislature through the provision of art.180, para.1 of EA: "Every customer connected to the gas transmission and/or gas distribution network may choose a natural gas supplier, regardless of the European Union member state in which the supplier is registered, provided the supplier complies with the rules under art.173, para.1 and the security of supply requirements".

In line with art.181 of EA, natural gas contracts are concluded at regulated by EWRC prices for services of public interest regarding transmission, distribution and supply and at freely negotiated prices among the parties – prices outside the public interest services.

The problems that the gas market is facing can be summed up in three points: main natural gas supply from only one source, insignificant local extraction and absence of reversible interconnections with neighbouring countries. These factors result in an unstable supply due to lack of diversification of natural gas sources, as well as scarce competition in the gas market.

To boost competition, which is a prerequisite for free negotiation of electricity and natural gas prices at market conditions, an effective market opening is needed, as part of the establishment of a single EU natural gas market, which is in the interest of both the citizens and the industry. This can be achieved through the implementation of interconnection projects, which will enable natural gas supply from other sources and will increase competition and the possibilities to choose a supplier. The interconnection projects are a priority for Bulgaria and have a significant influence on the security of supply in the region.

On 30 November 2018, the National Assembly adopted an amendment of the Energy Strategy of the Republic of Bulgaria until 2020. The changes are prompted by the fact that after 1 January 2020, a significant change in the routes of gas supply through the territory of the Republic of Bulgaria is expected from North-South to South-North, as well as the possible risk of a significant decrease in the quantities transited through the country, and hence the revenues from them. This is due to the following facts: the forthcoming construction of key projects in the region that will change the main direction and routes of the flows - Turkish Stream, projects in the Southern Gas Corridor, the Trans-Anatolian Gas pipeline (TANAP), the Trans-Adriatic gas pipeline (TAP), Greece-Bulgaria interconnection (IGB), the project for a new LNG terminal in Alexandroupolis (Greece), the East Med gas pipeline (with Mediterranean gas sources), and Gazprom Export's position that after 1 January 2020 the company has no interest in using the current infrastructure providing input capacity from Romania and output capacity to Turkey. The strategy amendment states that the concept of a gas distribution center (hub) construction on the territory of the Republic of Bulgaria is based on the idea to receive significant quantities of natural gas from different entry points of the gas transmission system from different sources for the purpose of trading them on the hub, as well as for further transportation. At the same time, a gas trading venue (gas exchange) will be organized at this point, where any market participant could conduct natural gas transactions on a commercial basis. This concept will be realized through the implementation of the Balkan Gas Hub project. The aim is to connect the natural gas markets of the Member States in the region - Bulgaria, Greece, Romania, Hungary, Croatia, Slovenia and through them the markets of the Member States of Central and Western Europe, as well as the with the markets of the Energy Community Contracting Parties - Serbia, Ukraine, North Macedonia, Bosnia and Herzegovina, etc. The implementation of the gas hub concept aims to preserve Bulgaria's role on the gas map of Europe as a major country providing natural gas inputs and trade and cross-border transportation for the region and the EU, as well as to ensure the security of natural gas supplies to Bulgaria, the region and Europe.

4.3. Security of supply

Pursuant to art.4, para.2, item 4a of EA, the Ministry of energy is the competent authority concerning security of supply in the meaning 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) No 994/2010. In line with art.72 a of EA, the Minister of Energy, after consultations with natural gas companies, with organizations

representing household and non-household customers' interests and with EWRC, implements at national level:

1. Preventive action plan containing the measures needed for the removal or limitation of the identified risks impact in compliance with the risk assessment.

2. Emergency action plan containing the measures needed for the removal or mitigation of natural gas supply interruption impact.

With reference to Regulation (EU) 2017/1938, in 2018 EWRC experts took part in the interdepartmental group within the Ministry of Energy concerning the updating of the Preventive action plan and an Emergency action plan.

Achieving security of gas supply, energy independence and real competition in a functioning gas market is possible by building additional gas infrastructure, modernizing the existing gas routes on the territory of the country and providing alternative gas supply sources. The expectations are that in the forthcoming years the number of entry points through which gas shall flow into the gas transmission network will increase significantly as a result of the interconnection projects with Greece, Turkey and Serbia. These projects will provide the opportunity to supply natural gas from various sources, which in turn will result in enhanced competition and will have a positive effect on natural gas consumers. The new gas interconnections will significantly increase the entry capacity towards Bulgaria from Greece and Turkey, while at the same time ensuring a possibility for gas supply from LNG terminals from these countries. With the planned expansion of the only underground storage Chiren UGS by drilling new exploitation wells and replacing part of the surface equipment, the volume of active gas in the gas storage is expected to increase to 1 billion m³, which will allow the daily production of natural gas from the gas storage to increase as well.

4.3.1. Monitoring supply and demand balance

In 2018 Bulgargaz EAD purchased natural gas from Gazprom Export OOO which it sells on the domestic market, covering 98.9% of consumption. The rest of the natural gas for the needs of the domestic market is covered by Petroceltik Bulgaria EOOD and Oil and Gas Exploration and Production AD, which provide natural gas quantities from local production and from traders.

4.3.2. Measures to cover peak demand or shortfalls of suppliers

In 2018 the national gas transmission network operated considerably under its project capacity using about 45% of this capacity. Gas distribution networks are relatively new and most of them are loaded also significantly under their project capacity.

Bulgargaz EAD provides gas for its clients (end suppliers and non-households connected to the transmission network) on the basis of a contract with Gazprom Export OOO. A major part of the end suppliers provide natural gas quantities to their customers, connected to the gas distribution networks under gas supply contracts with Bulgargaz EAD.

In the approved by EWRC TYNDP of Bulgartransgaz EAD for the period 2018-2027 a scenario has been presented concerning capacity demand and sources to cover natural gas demand in Bulgaria for the period 2018-2027, taking into consideration: forecast of the expected natural gas demand for a period of one year and peak demand levels per day; sources to meet the demand in the country with forecasts for the period 2019-2023; capacity demand forecast for cross-border transmission through the existing Bulgartransgaz EAD infrastructure for the same period.

In the TYNDP measures to safeguard security of natural gas supplies were described, including risk assessment and N-1 formula pursuant to art. 5 of Regulation (EU) 2017/1938,

which describes the ability of the gas infrastructure technical capacity to satisfy total natural gas demand in the calculated area in case of disruption of the largest single gas infrastructure on a day with exceptionally high demand occurring with a probability of once in twenty years. In case of such disruption, the capacity of the remaining infrastructure should be able to deliver the necessary gas amounts in order to satisfy gas demand in the area. The results of the formula N-1 for the next 5 years are given in table in million m^3/d. Calculations illustrate that in case of disruption of the single largest gas infrastructure (from Russia through Ukraine), the capacity of existing infrastructure in the period 2019-2020 will not be able to ensure the necessary gas quantities to satisfy the overall gas demand in the territory of Bulgaria for a day of exceptionally high natural gas demand.

Also, the plan states that through the implementation of new gas infrastructure projects, Bulgaria will meet the infrastructure standard in 2021. Several major projects have been planned in order to fulfil the infrastructure standard, namely – a project for the modernization, rehabilitation and expansion of the existing gas transmission infrastructure (including the modernization of compressor stations) and projects for gas interconnections construction with the neighbouring countries and connections between the NGTN and the GTNTT, the project for the expansion of Chiren UGS and/or for a new gas storage facility, as well as new projects, ensuring entry capacity.

Investments foreseen for the period 2019-2028 shall facilitate the achievement of increased and quaranteed technical security, safety and reliability of the gas infrastructure and to comply with environmental protection requirements in order to meet the expected growing gas demand in the country and in the region, through: investments in reconstruction, rehabilitation and transmission networks' repairs, including investments in existing compressor stations; investments in existing linear infrastructure; investments in existing gas regulation and measuring stations and Chiren UGS; investments in new facilities construction in addition to the existing infrastructure needed to increase the efficiency of operations; investment in ancillary infrastructure, including fibre network.

The next goal is to provide an opportunity for the competitive market development and diversification of natural gas supply sources and routes, resulting in greater energy independence; the ability of local traders for access to the natural gas at different prices and the ability to create a regional gas exchange, including spot market by building the necessary facilities to connect to the existing transmission infrastructure with the future trans-European gas corridors and with Southern Gas Corridor projects - TANAP, TAP, as well as other pan-European projects intended to provide diversification of natural gas supply sources and gas transportation routes to Europe; connection of the upstream pipeline network of extraction enterprises in the country; construction and implementation of electronic systems for the management of activities.

Investments shall ensure the security of natural gas supplies for the country through: investments in interconnections to provide connectivity with other transmission networks; and investments in the expansion of the underground gas storage, both in terms of facilities for the extraction and compression, and the ability to store a greater volume of natural gas.

Another major goal is to provide new municipalities and new end customers with access to natural gas, which will contribute to the improvement of the environment, quality of life, energy efficiency and bring about savings from cheaper fuel by expanding existing gas transmission networks to new regions of the country and construction of new gas metering and regulating stations, providing an opportunity for new end users or gas distribution networks to connect to the gas networks.

Measures to cover peak demand or shortage of suppliers are:

- Network configuration, real gas flows, including possibilities of physical flows in both directions - there are possibilities for reverse physical flow of natural gas from Greece and Turkey (2.4 million m³/day in the event of complete Russian gas supplies interruption);

- Natural gas storage - the amounts stored in Chiren UGS are intended mainly for compensating the uneven consumption as well as for guaranteeing security of supplies in the event of deficit. The storage facility has 23 exploitation wells, a compressor station with a total installed capacity of 10 MW and other facilities required to secure the injection, withdrawal and the quality of the stored gas. The current storage capacity is 550 mln m^3 natural gas.

Projects, crucial to the liberalization process, diversification of natural gas supply sources and routes and gas network development in the region, with a view to ensuring continuity and security of natural gas supply, are:

Gas Interconnection Greece - Bulgaria (IGB)

Gas Interconnection Greece - Bulgaria is a Project of Common Interest of the EU.

On 17 July 2017, EWRC and RAE received an exemption application submitted by ICGB AD for the Greece-Bulgaria gas pipeline, in accordance with the provisions of art. 36 of Directive 2009/73/EC which has been sent to the European Commission on 7 August 2017, in accordance with the provisions of art. 36, paragraph 8 of the directive.

On 29 May 2018, the regulatory authorities of Bulgaria and Greece adopted a Joint Opinion of EWRC and RAE on the exemption application.

On 26 July 2018, EWRC and RAE received EC Decision C (2018) 5058 final of 25. 07.2018 on the exemption of the Interconnecton Greece-Bulgaria from the requirements of Directive 2009/73/EC regarding third party access, tariff regulation and ownership unbundling (the Decision). According to the Decision, provided that the Bulgarian and Greek Exemption Decisions are amended in accordance with this Decision and that the NRAs take duly into account the Commission's Decision when taking decisions adressed to ICGB on the basis of this exemption decision, an exemption should be granted to the IGB in accordance with Article 36 (9) of Directive 2009/73/EC. The requirements for amendment of the Bulgarian and Greek exemption decisions made by EC in Articles 3 and 4 of the Decision concern Part 4 of the Joint Opinion of EWRC and RAE of 29 May 2018.

By decisions of 8.08.2018, a Final Joint Decision of EWRC and RAE on the exemption application, submitted by ICGB AD was adopted, reflecting the necessary changes made in compliance with the stated arguments and the conclusions reached in the EC Decision.

Bulgaria has again confirmed a state guarantee of EUR 110 million for the project in 2018 budget. The project is funded by Operational Program Innovation and Competitiveness 2014-2020, with a total value of BGN 469 832 604 (EUR 240.2 million) and grants amounting to BGN 76.2 million. Public procurements have been announced, involving procedures for selecting a consultant engineer, a pipe supplier and a pipeline builder.

An application № E-15-59-4 dated 5 November 2018 has been submitted to EWRC by ICCB AD, requesting approval of the IGB Interconnection Tariff Code in connection with Part IV Item 4.3 of the Joint Decision of EWRC and RAE on the exemption application submitted by ICGB AD. Administrative proceedings on the application are ongoing.

Gas Interconnection Bulgaria - Serbia (IBS)

The reverse gas interconnection Bulgaria-Serbia aims at connecting the national gas transmission networks of Bulgaria and Serbia. The project is one of the Bulgarian projects of

common interest in line with Regulation (EU) 347/2013 and has been included in the current Third List of PCIs.

With the realization of the project diversification of routes, interconnection and natural gas transmission to Serbia will be achieved using the planned new entry points with Turkey and Greece. At the same time, in crisis situations it could be used for natural gas supply from Serbia.

According to data of the technical design the length of the route Sofia - Dimitrovgrad - Nis is about 170 km of which about 61 km on Bulgarian territory. Minimum design annual capacity is about 1.8 bcm, and the maximum is 3.2 bcm.

Bulgartransgaz EAD is about to conduct the procedures required for updating the project documentation and aligning it with the current regulatory requirements, completing the archaeological studies, granting real rights over properties for the sites to the gas pipeline and establishing an easement for the gas pipeline linear part, developing an Engineering Design, granting Building permit. With the amendment of the Operational Programme Innovations and Competitiveness 2014-2020, Bulgartransgaz EAD is an eligible beneficiary of completing the preparatory activities of the project realization. The expected term of commissioning is May 2022.

Gas Interconnection Turkey - Bulgaria (ITB)

Gas Interconnection Turkey - Bulgaria is a system interconnection development project for connection of the gas transmission networks of Bulgartransgaz EAD and Botas C.A. – Turkey that will provide an opportunity for diversification of natural gas supply sources, shippers and routes, thereby enhancing security of supply in the region and competition development. ITB is a new onshore pipeline with a length of about 200 km (approximately 75 km of which on Bulgarian territory), with a capacity of 3 billion m^3/y. The Interconnection Turkey - Bulgaria has been included in the list of Projects of Common Interest of EC according to Regulation (EU) № 347/2013. The implementation of the Turkey-Bulgaria Interconnection largely depends on the development of other projects of Bulgartransgaz EAD and international ones. The commissioning of the projects, part of the Southern Gas Corridor, the Interconnection Greece-Bulgaria, as well as of the project "Expansion of the gas transmission infrastructure of Bulgartransgaz EAD parallel to the northern (main) gas pipeline to the Bulgarian-Serbian border" can provide diversification of natural gas sources, supplying partners and routes without the need for investment for the Turkey-Bulgaria Interconnection realization.

Eastring Project - Bulgaria

Eastring Project - Bulgaria is a subproject of the Eastring cluster project – a project for the construction of a transport corridor through the territory of Slovakia, Hungary, Romania and Bulgaria, providing possibilities for bi-directional natural gas supplies from alternative sources. Eastring concept, as developed so far and included in the ENTSO-G TYNDP 2017 - 2026, is envisaged to be developed jointly and in coordination between the TSOs of Slovakia, Hungary, Romania and Bulgaria. Bulgartransgaz EAD is the company committed to the realization of the Bulgarian section of Eastring.

The implementation of the Eastring Feasibility Study started in September 2017 having a one-year deadline for completion. Following its completion, the results were officially presented to the interested parties within a meeting hold in Bratislava, Slovakia on 20 September 2018. The study shows that the bi-directional gas pipeline with 1400 mm diameter and 100 bara operating pressure will have a capacity of up to 20 bcm per year in the first stage, with a potential increase of up to 40 bcm per year in the next phase. The capital cost for Phase 1 of the project is estimated

at EUR 2.6 billion. If an investment decision is made, the new pipeline will be operational in 2025.

Expansion of Bulgartransgaz EAD's gas transmission infrastructure in the section from the Bulgarian-Turkish to the Bulgarian-Serbian border

In connection with the requirements of Chapter V 'Incremental capacity process' of Commission Regulation (EU) 2017/459 of 16 March 2017 establishing a network code on capacity allocation mechanisms in gas transmission systems and repealing Regulation (EU) No 984/2013 requiring joint actions by the transmission systems operators in carrying out technical studies for incremental capacity projects, Bulgartransgaz EAD conducted a market demand study for incremental (new) capacity, Open Season, Phase 1 and Phase 2.

Given the results that justify the need of a binding capacity allocation procedure, incl. economic test and final investment decision, Bulgartransgaz EAD submitted an application to EWRC requesting approval of the necessary documentation for conducting the binding phase of the Open season procedure for the Project of development and expansion of Bulgartransgaz EAD gas transmission system (the Procedure). The new gas infrastructure envisaged for construction includes two interconnection points with neighboring gas transmission systems - IP Strandzha 2/Malkochlar (from the Republic of Turkey to the Republic of Bulgaria) and IP Kirevo/Zaychar (from the Republic of Bulgaria to the Republic of Serbia). EWRC has prepared an analysis of the information contained in the application on the basis of the Energy Act and its implementing regulations and in compliance with the requirements of Regulation (EC) No 715/2009 of the European Parliament and of the Council on conditions for access to the natural gas transmission networks, which lays down non-discriminatory rules on conditions of access to the natural gas transmission networks, taking into account the special characteristics of national and regional markets. By Decision No. Д-1 of 21.12.2018, EWRC approved the Binding rules and Methodology on price formation of booking capacities to conduct the binding Phase 3 of the Open season procedure for the Project of development and expansion of Bulgartransgaz EAD gas transmission system. With this decision, EWRC confirmed to Bulgartransgaz EAD the required annual revenues from the realization of the incremental capacity allocated in Phase 1 of the Open season procedure economic test, amounting to BGN 329 331 thousand, with a factor of allocation of the necessary revenues related to the incremental capacity (F-factor) of 0.9, as well as a rate of return on capital before tax, valid for the individual phases of the economic test of the Procedure, of 8.86%.

Regional gas hub Balkan is linked to the gas infrastructure development in the territory of the Republic of Bulgaria.

The concept for the construction of a gas distribution centre (hub) on the territory of the Republic of Bulgaria is based on the idea significant natural gas quantities from various sources to enter the country in a specific real physical point near the city of Varna for further transportation, while in this same location a market place (hub) to be organized for gas trade - where each market participant could carry out gas transactions at market principles. The idea of a regional gas hub construction was supported by the strategic geographic location of the Republic of Bulgaria, the well-developed existing gas transmission and storage infrastructure, as well as by the interconnection projects with Turkey, Greece and Serbia and completing the infrastructure with Romania.

The concept of Balkan gas hub is included in the PCI List of 18 November 2015 according to Regulation (EU) No 347/2013. The project is listed under PCI 6.25.4 in cluster 6.25,

which includes alternative projects for the supply of natural gas from new sources and new routes to Central, Eastern and Southeastern Europe.

Balkan gas hub concept includes several key elements that form the project as a whole: new gas sources; optimal use of the existing gas transmission networks and Chiren UGS; modernization and expansion of existing infrastructure and new gas hub infrastructure.

In connection with the need for a detailed feasibility study, a grant of up to EUR 920 500 (50% of the project value) was approved under the Connecting Europe Facility (CEF Call 2016-2) for “Feasibility study of Balkan gas hub project”. On 15 March 2018, a contract was signed between Bulgartransgaz EAD and the selected consortium of DZZD "AF-EMG Consult" for the preparation of a feasibility study for the Balkan gas hub. The value of the signed contract is a total of BGN 2 327 437.

Given its strategic geographical location and developed gas infrastructure, with the implementation of the planned new projects underway, Bulgaria has the opportunity to diversify the sources and routes of gas supply to the region and maintain its importance on the gas map of Europe, as well as its position as a major country providing inputs and trade in natural gas and cross-border transport for the region and EU.

5. CONSUMER PROTECTION AND DISPUTE SETTLEMENT IN THE ELECTRICITY AND GAS SECTORS

5.1. Consumer protection

5.1.1. Electricity

Pursuant to the requirements of Art.37 (1) (n) of Directive 2009/72/EC, commercial metering devices, including the devices ruling the tariffs, are located in a way that the consumer has the opportunity to observe the figures displayed, in order to ensure quick access and data provision on customer consumption. In cases where it is needed to guarantee the life and health of citizens, property, power quality, continuity of supply and security and reliability of the energy system and the commercial metering devices are put in a place with difficult access, the electricity distribution company shall be obliged to provide at its own account the possibility of visual inspection within three (3) days following a written request. In addition, energy companies have established in every major city of their licensed territory customer service centres and have their own internet sites for each user to have an access to them.

In Chapter III, Energy activities regulation, Section VI of EA, Measures to protect end consumers, in pursuance of the requirement of Art.37 (1) (n) of Directive 2009/72/EC, the energy companies have the obligation to provide their customers with information regarding:

- actual consumed quantities and value of the provided service in accordance with the contracted periodicity of the readings with no obligation of additional payment for this service;
- conditions on the provision of electronic billing information and electronic invoices;
- an energy supplier provides another energy supplier with the consumption data of a household consumer when such action has been provided for in an express agreement between the consumer and the energy supplier.

These provisions ensure customer access to energy consumption data, their providing in an easily understandable format and use. Customers have their consumption data and may, by an

agreement and without additional costs, provide these data to any licensed supply company, thus transposing the requirements of Annex I, item h of Directive 2009/72/ EC.

5.1.2. Natural gas

In exercising its regulatory powers, EWRC shall be guided by defined in the EA general principles, 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 companies customers' rights EWRC closely cooperates with the Consumer Protection Commission, 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. This type of contracts has a regulated by EA mandatory content, which ensures consumers' rights. Licensees providing services of public interest are obliged to guarantee consumers' rights protection and equality between customer groups in the contracts' *General conditions* and in the *Rules on work with energy services consumers*.

The amendments of the EA, promulgated SG, 54 of 17.07.2012, and transposing the requirements of Directive 2009/73/ EC, enhance and guarantee the existing consumer rights and include greater transparency regarding their energy rights, particularly in the gas sector. New provisions have been supplemented concerning measures to protect energy services consumers, aimed at ensuring effective and adequate protection of their rights. Provisions have been supplemented and refined concerning end-user protection measures included compulsorily in the energy services contracts.

EA requires energy companies providing services of public interest to determine in the general conditions for supply and use of networks and in the Rules for working with users of energy services, special procedures on provision of information to vulnerable customers related to their consumption and energy discontinuing. According to companies' data registered vulnerable customers in 2018 were 6.

EWRC monitors the energy companies' obligations on providing information to the customers and in regard to their work with them, as well as the submitted annual reported data on the activities and by on-site inspections.

5.2. Dispute settlement

Disputes settlement terms and conditions are regulated by EA and by *Ordinance №3 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. It involves the dispute parties and a conciliator - a member of the EWRC working group that has been designated to handle the complaint. The conciliator uses all reasonable means and efforts to resolve the dispute by proposing to the parties a resolution and if consent is achieved - to draft a written agreement.

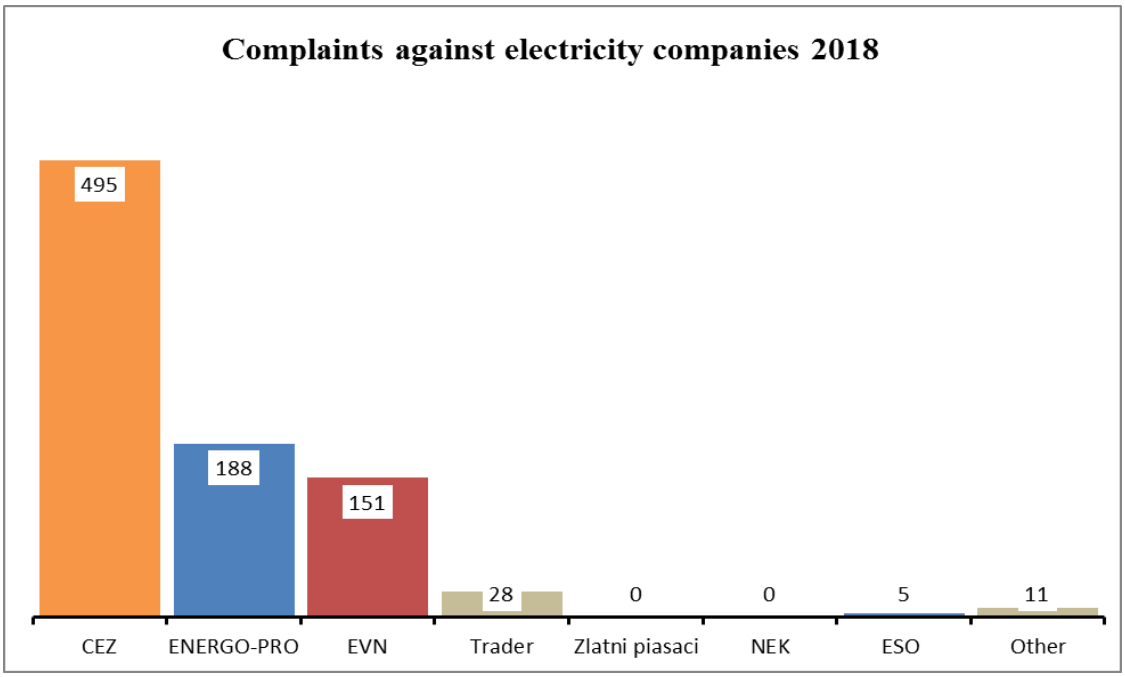
In case no amicable settlement has been achieved or the parties reject amicable settlement, EWRC shall decide on the complaint within two months after receiving it. This period may be extended by another two months if the nature of the dispute requires EWRC to collect additional data and information. Upon complainant consent the extended period may be extended again by another two 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 under the Administrative Code.

Under the legislation, EWRC has the power to fulfil the obligations set out in Directive 2009/72/EC and Directive 2009/73/EC, namely to act as a dispute settlement body in respect of any complaint against transmission or distribution operator in relation to that operator's obligations and to issue a decision within two months of the complaint receipt and the period may be extended again by another two months, when additional information is to be collected. This period may be extended with the consent of the applicant. The decisions of the regulatory authority shall have binding effect unless and until overruled on appeal.

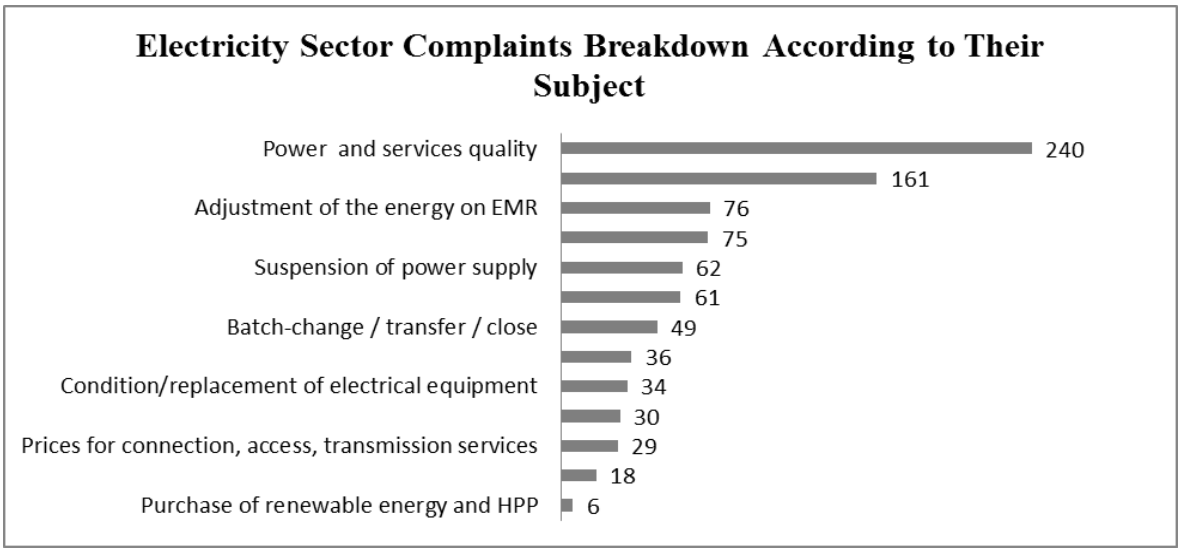
5.2.1. Electricity sector

In 2018 the total number of electricity complaints against licensed companies filed in EWRC was 877 and under the provisions of art. 22, para.1 of EA administrative proceedings have been started.

The largest number of complaints was against CEZ Distribution Bulgaria and CEZ Electro Bulgaria, followed by Elektrorazpredelenie Sever EAD and Energo-PRO Sales AD. Third were Elektrorazpredelenie Yug EAD and EVN Bulgaria Electricity supply EAD. Complaints on electricity trading were mainly related to problems with switching supplier. There were 5 complaints against ESO EAD. No complaints were registered against NEK EAD, ERP Zlatni piasaci AD and ESP Zlatni piasaci OOD.



The complaint applicants' requests may be classified in groups as follows:



The largest number of received complaints was in connection to the quality of the low voltage electricity supplied in the connection point, frequent power cuts and damage to electrical appliances. The inspections done in this regard showed that complaints were justified in a high percentage of the cases, which resulted in giving mandatory guidelines to the companies to envisage and realize measures to enhance the quality within short terms.

Second is electric energy readings and billing. This includes allegations of inaccurate readings or lack of real readings, improper operation of clock switches, billing errors in the reported quantities and network services charging.

Other causes of complaints and signals were as follows:

- adjustments to consumed electricity amounts, but inaccurately metered and measured, stipulated in the electricity metering rules, but found by customers as illegal;

- commercial metering devices – doubts about the accuracy of the devices, the remote place of installation, non-communication of planned or periodic replacements, absence of witnesses in the statement of facts document upon replacement;

- suspension of the power supply without reason and without notice;

- connection agreements of new users' and generators' sites – delays, unfair terms, unlawfully terminated contracts;

- electricity supply contracts – delays and problems with supplier switching;

- condition of electrical equipment - bad condition, dangerous installations, violated servitudes of energy sites;

- misapplication of EWRC pricing decisions;

- free electricity market - delay or non-issuance of documents for switching supplier;

- purchase and acquisition of equipment under para.4 of EA;

- connection of power plants using renewable energy to the electricity distribution networks;

- purchase of the electricity generated by RES power plants or cogeneration.

In order to clarify the causes and eliminate the preconditions for complaints from customers of energy services, EWRC plans to carry out inspections at the electricity distribution and supply companies regarding the observation of their licenses.

In connection with cases brought by and against EWRC, as well as by order of judicial panels, working groups have been set up and 16 inspections on complaints were carried out, both in documents and on-site.

In 2018 EWRC examined complaints by electricity and services consumers and had 681 decisions on the administrative proceedings, including:

- 130 justfied, with mandatory instructions;
- 253 terminated due to groundlessness;
- 249 terminated due to inadmissibility;
- 41 terminated, due to failing legal interest by the compainant;
- 2 terminated, due to consideration by the court;
- 6 terminated, due to withdrawal of the complaint.

Pursuant to Art.144, para.2 of *Ordinance № 3 on licensing the activities in energy sector*, when reviewing a filed complaint all necessary evidence must be gathered. The complaint review may involve a meeting of the parties at the EWRC's headquarters. In that regard, five meetings were held between energy companies and complaining parties to further clarify the circumstances. As a result of the talks and discussions on the issues raised, agreements and arrangements have been reached that helped to resolve disputes between the parties in a timely and proper manner.

5.2.2. Natural gas sector

In Natural gas sector a total of 31 letters, inquiries and complaints were submitted at EWRC in 2018. In relation to the received signals and inquiries, documentation checks have been performed and answers have been prepared which were sent to the addressees.

Complaints filed at EWRC were 21. EWRC has taken a decision on 19 of the complaints. Five of the complaints were well-founded and the Regulator, by its decisions, has given compulsory instructions to the licensees and set a deadline for their implementation. All

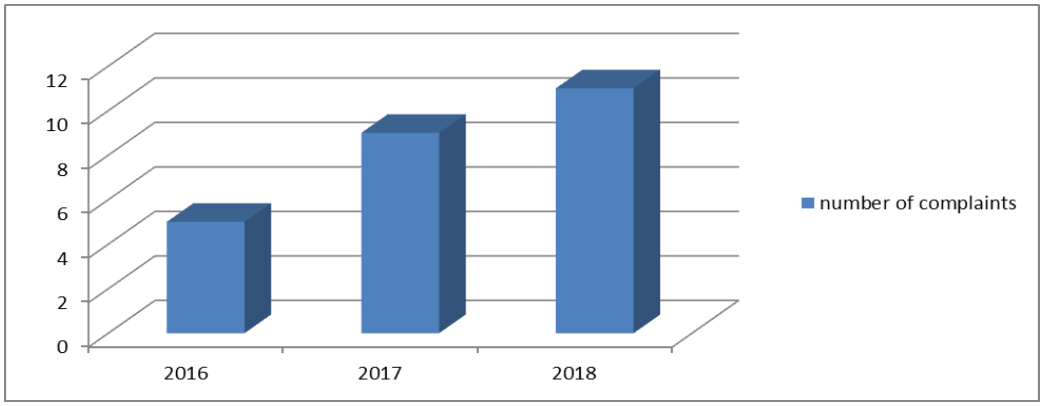
mandatory instructions given to the gas distribution companies were realized within the set time limit, for which evidence was presented. On eleven complaints, EWRC ruled that it had terminated the files as follows: on four of the complaints, the Regulator found them groundless; in three of the complaints the proceedings were terminated due to unproven legal interest; two - for withdrawal from the applicants; two of the complaints were not considered essencially and were terminated on the basis of Article 4, paragraph 3 of *Ordinance № 3 on licensing the activities in energy sector* due to non-elimination of irregularities within the statutory term. On the other three of the complaints, EWRC ruled that they were inadmissible, had terminated the proceedings and referred them for examination by jurisdiction on the basis of Article 31 (2) of the Code of Administrative Procedures.

Two complaints were filed at the end of 2018 and EWRC had its ruling in January 2019.

The Regulator also ruled on a complaint from the previous year, the administrative proceedings of which, due to the factual and legal complexity of the case, ended in the reporting year.

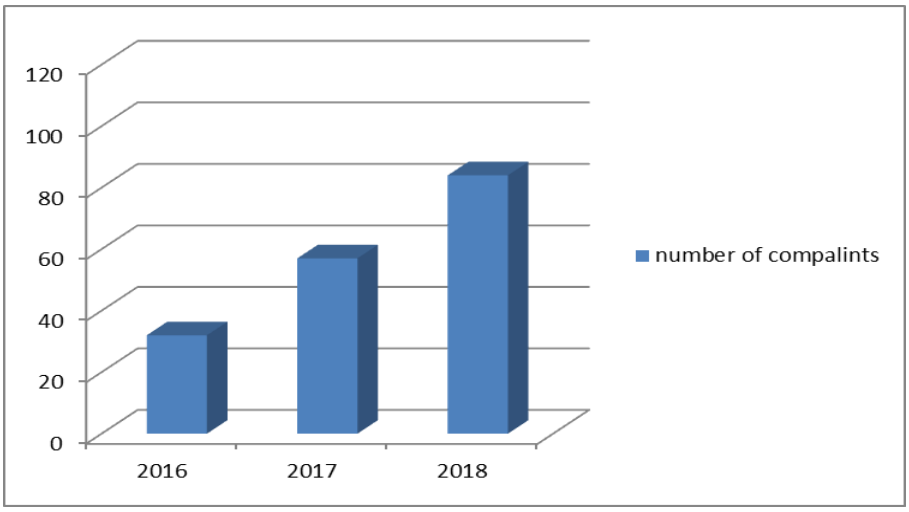
The number of complaints in the natural gas sector in 2018 was 0.02% of the total number of natural gas customers (107 669) and it keeps low compared to the other three sectors. This is mainly due to the small number of gasified cites in the country, both households and industrial. The trend of maintaining a low level of complaints in the sector is due to the fact that companies inform their clients (as it is defined in the general conditions of the contracts and the rules for working with users) about the way of submission and consideration of complaints. They also deal with complaints promptly and satisfy the justified ones.

Number of complaints at EWRC, by years



In 2018 the number of complaints submitting at the gas distribution companies was 84. In comparison, in 2017 the figure was 57 and in 2016 - 32.

Number of complaints at gas distribution companies, by years



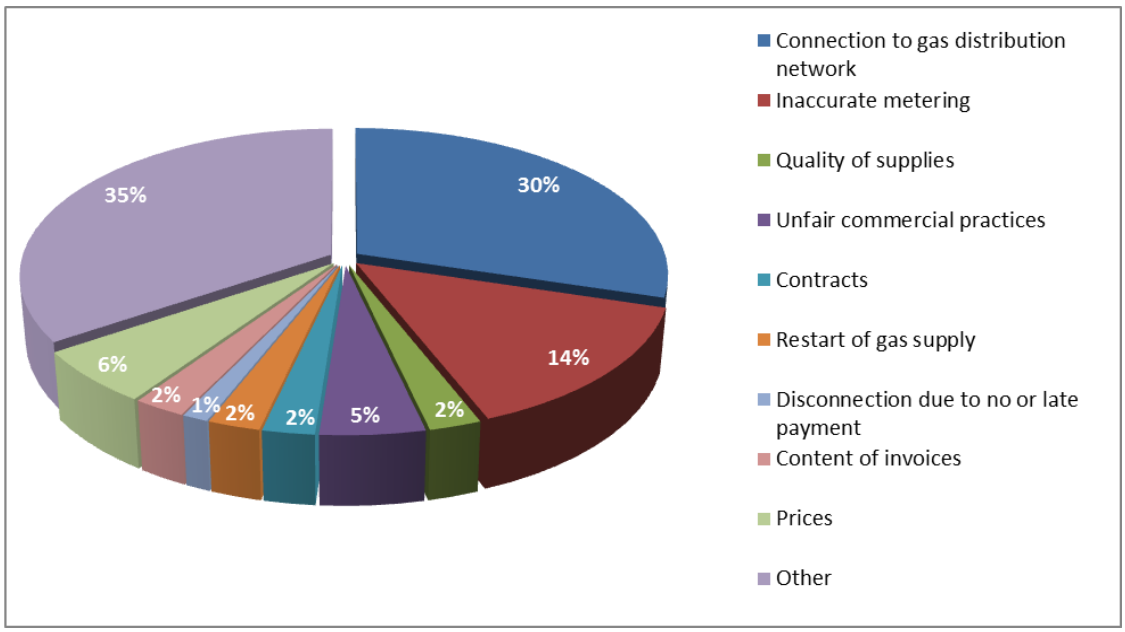
In 2018 consumers submitting complaints at the gas distribution companies represented less than 0.08% of all customers of natural gas, maintaining the trend of low number of complaints compared to the number of household customers, which in 2017 was less than 0.06% and in 2016 - less than 0.04%. From a total of 35 licensed areas in Bulgaria, complaints were filed in 15 of them. The number of natural gas users in these 13 territories (98 938) accounts for 91.9% of all natural gas consumers in the country. Most complaints were filed with Overgas Networks AD for the licensed territory of Sofia Municipality and Bozhurishte Municipality – 21 complaints (0.03% of all household customers of the company). This represents 25% of all complaints in the sector.

Complaints can be classified by subject, as follows:

Complaint subject	Number of complaints	Number of complaints satisfied
Connection to the grid	25	1
Inaccurate metering of the consumed amount of natural gas	12	3
Quality of supplies	2	1
Unfair commercial practices	14	2
Contracts	2	1
Restart of gas supply	2	0
Disconnection due to no or late payment	1	0
Content of invoices	2	1
Price	5	0
Compensation	0	0
Switching	0	0
Customer services	0	0
Other	29	14
Total Complaints:	84	23

As seen from the chart below, complaints are mainly related to connection to the distribution networks and inaccurate metering of the consumed amount of natural gas. The other

complaints are mainly related to quality of supply, contracts, restoration of gas supply, disconnection due to non-payment, content of invoices, prices and others.



One complaint was found justified and satisfied out of 25 complaints relating to connection to the grid and 24 were found unjustified. Out of 12 complaints relating to unfair commercial practices, 3 were found justified and were satisfied. Out of 5 complaints relating to prices, all were found unjustified and were not satisfied. Out of 29 other compalints, 14 were found justified and were satisfied by the companies. Unjustified complaints related to: moisture in the ground floor; disagreement with the location of the gas regulation and metering station/switch; disagreement with the installation of a neighbour; disagreement with the manner and timeframe for construction of a domestic gas system (DGS); low-quality construction works; frozen DGS; disagreement with the charging and payment of different types of bills; displacement of a gas pipeline connection; quality of supply.

No complaints were received concerning compensations, switching and cusomers' services.

Gas distribution companies examined the complaints received and accepted as valid 23 of them and satisfied them accordingly. All complaints received their replies within the provided for in the *Rules for work with customers* deadlines.

Gas companies work to increase customer satisfaction by reporting and analyzing the received calls and inquiries and the most common reasons for the complaints, on the basis of which timely corrective actions are taken. Clients are consulted on issues related to gas supply, such as preparation of an individual offer for the construction of a gas installation, recommendations for the use of gas appliances, etc. Consultations and referrences are carried out on accounts for consumed natural gas quantities, information on warranty and out-of-warranty servicing of gas appliances is provided, requests, inquiries and complaints are received and registered.

Some companies provide the option customers to optimize their energy costs through the "monthly installments payment" service, thus enabling customers to distribute the due natural gas amounts during the active heating season throughout the year.

Effotrs are in place to inform clients about the services offered and to clarify their rights in connection with filing complaints, disputes settlment and the opportunity for customers to address EWRC in case of dissatisfaction with a received response to a complaint. When signing a natural gas supply contract, the companies get the customers aqcuaited with the General Terms and Conditions and inform them about their rights and ways of protecting their interests.

Natural gas companies use different information channels:

- National information telephone;
- Internet site;
- E-mail address.

Using each one of them, customers can get assistance on issues related to gas supply, as well as to register alerts and complaints.

Some companies have organized reception time and conduct customer satisfaction surveys.

The General Terms and Conditions for the sale of natural gas, as well as the Rules for dealing with consumers, are clearly visible in the customer centers of the gas distribution companies, which also explains the ways and procedures for filing complaints and disputes settlement.