NATIONAL REPORT 2018

July 31, 2019

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Abbreviations

ATC – Available Transmission Capacity

BRM - Romanian Commodities Exchange

CPC - Competitive Market Component

ENTSO-E – The European Network of Transmission System Operators for Electricity

ENTSO-G - The European Network of Transmission System Operators for Gas

SoLR – Supplier of Last Resort

HHI – Herfindahl-Hirschman Index

HV - High Voltage

LV - Low Voltage

MV - Medium Voltage

TSO – Transmission System Operator

DSO – Distribution System Operator

CMBC-OTC – Centralized Market of Bilateral Contracts with Double Continuous Trading

CMBC - Centralized Market of Bilateral Contracts

CMBC-CN – Centralized Market of Bilateral Contracts by public auction with Continuous Negotiation

PCR - Price Coupling of Regions

BM - Balancing Market

IDM - Intra-Day Market

DAM – Day Ahead Market

NPS – National Power System

NTS – National Gas Transmission System

1. Introduction

The institutional and legal framework based on which the Authority must make decisions and the quality of the decisions it makes represent defining decisions for the elaboration of an efficient set of regulations, able to support a good performance of the electricity sector. The creation of a consumer-oriented regulatory system, aimed to meet as well the requirements of a truly operational electricity market, represents one of the objectives that ANRE pursues in view to develop a clearer and more transparent secondary legislation.

In this context, in 2018, the Authority worked in a new structure, fact that made it be more attentive and more flexible in the communication with the market participants and be better prepared at the same time for the fulfilment of the regulatory objectives, actual and perspective. For a unitary and coherent approach of any issues related to the energy sector and the market regarding the secondary legislation, ANRE went through a complex process for its revision.

Thus, for the analysis of the investment and maintenance works performed in electricity transport and distribution networks, as well as in natural gas transmission, storage and distribution systems, including for the improvement of their energy efficiency, it has been established the *Directorate for Investment Monitoring and Analysis.*

Another important and newly established organizational entity is the *REMIT Monitoring Directorate*, which is in charge with the monitoring of the operation of the internal electricity and natural gas markets, in order to assess the level of market transparency, competition and efficiency, to identify any anticompetition practices, the market abuse, including the practices that may affect the security of the national energy system and/or the security of the supply of the final customers.

An important contribution towards ensuring a good functioning of the energy sector has been represented by the activity of control and protection of consumers carried out in 2018, an increased attention being paid to the monitoring of the observance by the economic operators from the sector of the obligations provided for by the national legislation and the European legislation in the field.

The priority objectives of the ANRE continue to be those related to the permanent update and completion of the secondary legislation in view of ensuring the development of the energy sector under conditions of competition, transparency and non-discriminatory treatment, as well as of elaboration of an adequate regulatory framework, aimed to offer the necessary support for the encouragement of some large-scale investment projects, meant to contribute to the diversification of the Romanian sources of energy, in the benefit of final consumers.

ANRE shall continue to focus on aspects related to the increase of the efficiency of electricity markets, the harmonization of the secondary legislation with the provisions of the primary legislation and the European codes, the ensuring of the integration of renewable energy sources in a safe and reliable manner, at the same time with the encouragement of the investments and last, but not least, the information and the protection of consumers.

Dumitru Chiriță

President

2. Important achievements regarding the electricity and natural gas markets

This document represents the national report drawn up by the National Energy Regulatory Authority - ANRE for similar institutions from Member States and who are members of the Council of European Energy Regulators - CEER, the Agency for the Cooperation of Energy Regulators - ACER and the European Commission for the fulfilment of the reporting obligations stipulated in the provisions of art. 37, par. (1) (e) of Directive 2009/72/EC and Art. 41, par. (1), let. (e) of Directive 2009/73/EC. The report also meets the reporting requirements stipulated by Article 9, par. (1), let. ș), par. (4), (5), (6) and (7) of Law no. 160/2012 for the approval of GEO no. 33/2007 regarding the organization and operation of ANRE. The report contains information on the evolution of the electricity and gas markets for the period comprised between 1 January 2018 – 31 December 2018, in accordance with ACER-CEER requirements.

2.1. Electricity market

Significant developments on the electricity market during the analyzed period consisted of:

- The data collected monthly from a number of 124 producers holding dispatchable units for electricity from hydro, nuclear, thermal, wind, photovoltaic and biomass sources, showed that **61.97 TWh** of electricity was produced in 2018 compared to **61.32 TWh** produced in 2017, while the electricity delivered by the said producers in the networks represented **58.31 TWh,** compared to **57.48 TWh** delivered in the previous year by the dispatchable producers.

- The highest market share, both from the point of view of the electricity produced, and the electricity delivered in the network, is held by the producer Hidroelectrica (27.8% for the electricity produced and 29.02% for the electricity delivered) which, with over 17.2 TWh produced in its hydropower groups, moved up the producer CE Oltenia in 2018, with approx. 3 TWh.

- Overall, 2018 was characterized by **an increase in domestic electricity consumption** (calculated based on the electricity delivered in the networks by the dispatchable producers and on the import-export commercial balance) **by 2.2%** compared to 2017 and **5.4%** compared to 2016.

- Electricity entering the transmission network (RET) in 2018 **increased by 0.3%** compared to the previous year, against a background of a rising net internal consumption, under the conditions of the increase of the electricity received from the distribution network by approx. 7%, of the increase by approx. 0.8% of the electricity produced by the generating groups that debit directly the RET and of the decrease of physical import flows by approx. 11% (364 GWh). **RET's own technology consumption increased by 14% compared with the previous year**.

- Against a background of a decreasing number of accidental events with electricity not delivered in 2018 compared to the previous year, **it is found an improvement of the performance indicators regarding the continuity of the electricity transmission service** corresponding to the unplanned interruptions with electricity not delivered to the consumers owed to the TSO (ENS 118.81 MWh in 2018 / 289.46 MWh in 2017 and AIT 1.127 minutes/year 2018 / 2.762 minutes/year 2017).

- In the case of the distribution networks, at a country aggregate level, **SAIDI planned interruptions** registers **a decrease in the average value to 183.58 min./year (compared to 193 min/year in 2018),** above the value of approx. 40 – 150 min/year registered in advanced European countries. Also at country level, **SAIDI unplanned interruptions** registers **a decrease to the value of 224 min./year**

(compared to 284 min/year in 2017), remaining nevertheless above the range of approx. 20 – 100 min/year registered in advanced European countries

- **The average duration of the LV connection process** had a value of 90 days at level of the entire country (compared to 83 days in 2017), and the **average duration of the MV connection process** had a value of 235 days at level of the entire country (compared to 234 days in 2017). On the other side, the average costs of connection decreased in both cases.

- **Producers' access to the promotion scheme for the production of electricity from renewable sources** (E-RES) based on green certificates had as deadline 31 December 2016[1]. The number of accredited renewable energy producers at the end of 2018 was 766 (of which 6 have plants for 2 types of production technologies), distributed by types of sources as follows: 66 use wind energy, 102 use hydraulic power in power plants with installed power of maximum 10 MW, 576 use solar energy and 28 use biomass, including waste fermentation gas and sludge fermentation gas from waste water treatment plants. At the end of 2018, the installed capacity accredited in the E-RES production units was 4785 MW. Still in this year it has been introduced the concept of **prosumer** and it is facilitated its participation in the market.

- Starting from July 1, 2018, **the average electricity transmission tariff** increased by 7.53 % compared to the value approved for the previous year, respectively the period between 1 July 2017 – 30 June 2018.

- **Average electricity distribution tariffs** varied, recording a variation of 2.46% for high voltage, -1.25% for medium voltage and 1.91% for low voltage.

- In 2018, the highest annual average value of the degree of utilization of the total interconnection capacity allotted, calculated as the average of monthly values was recorded, like in the previous year, for the Serbian border for exports (about 64%), followed by exports to Hungary (47%), and imports from Bulgaria (about 41%). On the export relationship with Serbia, the utilization rates were high every month, reaching in July-August rates over 95%.
- With regard to achieving the 15% interconnection target for 2030, this objective is intended to be achieved mainly through the implementation of PCIs and other RET development projects included in the RET Development Plan between 2018-2027.

- **The volume of electricity transactions** carried out on the wholesale market in 2018 is as follows:

Components of the wholesale market	2014 (GWh)	2015 (GWh)	2016 (GWh)	2017 (GWh)	2018 (GWh)	Evolution compared to 2017 - % -	Percentage of internal consumption in 2018 - % -
Regulated contracts market	9058	6413	4152	1741	-	▼100,0	-
Directly negotiated contracts market	4611	1509	1283	616	438	▼28,9	0,8

[1] under art. 2554 of the New Civil Code and Regulation (EC, Euratom) No. 1182/71 of the Council of 3 June 1971 determining the rules applicable to periods, dates and time limits

Components of the wholesale market	2014 (GWh)	2015 (GWh)	2016 (GWh)	2017 (GWh)	2018 (GWh)	Evolution compared to 2017 - % -	Percentage of internal consumption in 2018 - % -
Centralized bilateral contracts, of which:	37284	56717	65337	59829	67005	▲12,0	120,2
CMBC -EA	34319	31407	21729	22821	22736	▼0,4	40,8
CMBC -CN	1621	7915	12718	11474	15273	▲33,1	27,4
CMBC-OTC	1344	17394	30890	25534	28996	▲13,6	52,0
Centralized market for universal service	-	4592	8046	5601	2208	▼60,6	4,0
Day Ahead Market	21496	22496	25810	24716	23541	▼4,8	42,2
Intra-Day Market	64	76	131	152	159	▲4,3	0,3
Balancing Market	4169	4861	4001	4497	3305	▼26,5	5,9
Export*	8200	10504	8587	6548	5479	▼16,3	9,8

Source: Monthly reports of participants on the wholesale electricity market, OPCOM SA and CNTEE Transelectrica SA - ANRE processing

*The quantity related to the export contracts in 2018 includes both the quantities exported by the suppliers/traders, and those exported through CNTEE Transelectrica S.A., in its capacity as shipping agent for the coupled DAM.

- In 2018 **the predominant trading was on centralized bilateral electricity contract markets, organized at OPCOM SA** (CMBC-OTC, CMBC EA and CMBC-CN), which mainly provides for transactions on medium or long-term contracts, followed by DAM in the case of short-term transactions. At the same time, **the volume of electricity traded on negotiated bilateral contracts registered a steady decrease**, reaching in 2018 the lowest share as compared to domestic consumption (about 0.8%), the quantities pertaining to contracts concluded by competitive producers and suppliers prior to the entry into force of the Law 123/2012.

- Overall, it can be found the fact that Romania maintains its position of net exporter in the region, even though the difference between the exported quantities and the imported quantities diminishes gradually from year to year.

- The comparative analyses of the annual average prices resulting from the transactions concluded on the components of the wholesale market in 2018, compared to the previous year reveals **the increase of the annual average prices on the majority of the components of the wholesale market**, except for the day-ahead market and the intra-day market, in the following market context:

    - the completion, on the date of 31.12.2017, of the last stage provided for by the road-map for phasing-out regulated tariffs, comprised in the Memorandum of Understanding signed by the Romanian Government with the European Commission on the date of 13.03.2012;
    - the increase of the internal consumption;
    - the regional context characterized by weather conditions similar to those in Romania;
    - the high hydraulicity recorded in the first part of the year and the decrease of the hydro resource in the second part of the year;
    - the average temperature increased by 1.35^0C then the multiannual average registered in the period between 1981 – 2010, 2018 being the third hottest year registered in Romania from

1901 to the present, according to the Press Release of the Ministry of Environment published on the internet page of the National Meteorological Administration on the date of 14.01.2019;
- the scheduled or accidental unavailability of some important dispatchable units;
- the increase of the quantities tendered at purchase and of the availability of the participants to purchase electricity at high and very high prices.

- Throughout 2018, on the **retail market 97 electricity supplier's license holders** activated, of which 5 are suppliers assigned by ANRE as suppliers of last resort and 25 also hold licenses for the commercial exploitation of power generation capacities.

- At level of the entire year, **the consumption of electricity of final customers was about 50 TWh, 3.3% higher compared to that of 2017**. Out of this, the highest quantity (about 74.5% of the final consumption) was the amount of electricity supplied to non-household customers (over 37 TWh, an increase by 4% compared to 2017), while the consumption of household customers (about 12.8 TWh) registered an increase of only 1.4%. In 2018, **the number of household customers who moved to the competitive market was the double of the number existing at the end of year 2017**, with an increased consumption of about 2.3 times than the one registered in the previous year.

- According to the road map for phasing-out regulated tariffs, stipulated by the Memorandum of Understanding signed by the Romanian Government with the European Commission on 13 March 2012, starting from 2018, **the entire consumption of electricity of the customers who did not make use of eligibility is guaranteed from the competitive market.** In 2018 they have started to be active the suppliers of last resort, bound and optional. In 2018, for final customers, the average price of sale of electricity, excluding the cost of network services and fees, registered an increase compared to the previous year by 19.8% (37 lei/MWh). In case of non-household customers, this value increased by 21.3%, and in case of household customers by 16.7%. This evolution has been determined by the prices at which they have been concluded the transactions on the centralized markets for contracts and on the DAM.

- At the end of 2018, **691 participants on the wholesale electricity and natural gas markets and 3 RRMs (Registered Reporting Mechanisms)** - OPCOM SA, the Romanian Commodities Exchange and SNTGN TRANSGAZ S.A. - had **ACER codes** issued by ANRE, being thus third parties authorized by ACER to report transaction data and fundamental data pursuant to the Commission Implementing Regulation (EU) No 1348/2014.

- So far, they have been notified **9 cases of suspicions regarding the infringement of the provisions of art. 3 and/or 5 of the REMIT**, during the analyzed year being notified **3 cases.** The notified cases are in different stages of analysis, from the preliminary analysis to their reassignment to the investigation department. For 3 cases, ANRE collaborated with other institutions, providing them with the results of the preliminary analyses.

- The cooperation of the regulatory authorities at European and regional level has materialized in the analysis and the approval of the regulations necessary for the implementation of the network codes.

2.2. Natural gas market

The significant developments on the natural gas market consisted of:

- **The annual gas consumption** registered **a slight decrease**, compared to 2017, reaching about 129.54 TWh, with a decrease by 0.25% in 2018 compared to 2017.

- **The domestic natural gas production** in 2018, current production and extracted from storage, which came into consumption accounted for approximately **87.42%** of the total sources. The first two producers (Romgaz and OMV Petrom) covered together about 95.95% of this source.

- **The import** which came into consumption in 2018, current import and extracted from storage, accounted for **12.60%** of the total sources. The first three importers – internal suppliers - covered together about 59.70% of these quantities.
- Natural gas is transported via mains pipelines of a total length of over 13,381 km, and the 35 natural gas distribution operators that hold licenses provided by ANRE have in total as of 31.12.2018, gas distribution pipelines and connections in a total length of 51,015 km. Out of these, a rate of 59.84% of the total are polyethylene networks, that developed gradually in the past 20 years.

- *The Development Plan of the National Gas Transmission System for the period comprised between 2018-2027* (referred to hereinafter as the *PDSNT*) elaborated by SNTGN TRANSGAZ S.A. has been approved by ANRE Decision no. 1954/2018. *PDSNT 2018-2027* represents the update and completion of the PDSNT corresponding to the period 2017-2026, respectively:
  - the update of technical characteristics of the pipelines, values and estimated terms of completion of projects of common interest, as well as of the national projects of major interest comprised in the PDSNT 2017-2026, following the conclusion of some contracts or the update of some technical documentation;
  - the inclusion of the investment works regarding the development and modernization of the internal SNT in the period between 2018-2027, respectively of the rehabilitation and maintenance works scheduled for the period between 2018-2027;
  - the introduction of some new projects for:
    - the taking over of the quantities of natural gas from the reserves newly discovered in the North Sea, on the basis of the final results obtained through the exploration processes in view of the exploitation of some natural gas commercial deposits and the evolution of the request for capacity;
    - the SNT interconnection with the natural gas transmission system from Ukraine, on the route Gherăești – Siret;
    - the modernization of the infrastructure of the natural gas storage system corresponding to the storage deposits from Bilciureşti, Sărmăşel, Moineşti and Ghercești in which SNGN Romgaz SA-the natural gas storage agency from DEPOGAZ Ploieşti has the capacity of operator, as well as of the storage deposit from Târgu Mureș, project initiated by Depomureș, in the capacity of holder of a concession agreement.

- The estimated value of the investments in transmission scheduled in 2018 was 687 million RON, an increase by 60% compared to the value of the investment program for 2017, that amounted to 429.6 million RON. Of this value, about 501 million lei represent the value scheduled for the major works

of interconnection and 185.6 million RON represent the investments for modernization and development

- of the internal system. The total value achieved on 31.12.2018 is 378 million RON, representing about 55% of the value programmed of 687 million RON.

- The estimated annual average value of the investments in the distribution systems, for the period 2019-2023, according to the investment plans transmitted by the distribution operators amounts to about 439 million RON.

- From the analysis of these plans, in 2019 new pipelines are planned for the distribution of natural gas as well as to replace other pipelines and connections, both steel and polyethylene, in total length representing 3% of the length of the distribution pipelines and connections in operation on the date of 31.12.2018. New pipes represent 1% of the total length of the pipes and connection in operation at the end of 2018.

- **The calculation methodology of the tariffs corresponding to the process of connection to the systems of transmission and distribution from the natural gas sector** has been revised. Compared to the old calculation method of the tariffs corresponding to the connection process, the methodology introduced new principles of calculation, based on the direct and indirect costs of the operators corresponding to the activity of connection and through the establishment of a profit rate of maximum 5% for the activities performed by the licensed operators in the connection process. ANRE approved through the **ANRE Order no. 165/2018** maximum values for:
  - the tariff for the analysis of the request for connection;
  - the component of the tariff for connection corresponding to the costs related to the design of the connection installation;
  - the component of the tariff for the connection correspondin to the costs related to the verification of the technical documentation/technical project of the connection installation;
  - the elements taken into account in the calculation of the component corresponding to the costs related to the execution of the connection installation.

- In 2018, **the quantities traded on the centralized markets**, on the platforms administered by the operators of OPCOM and BRM totalized a volume of **70.51 TWh**, of which 68.01 TWh for the wholesale market and 2.50 TWh for the retail market.

- In 2018 on the natural gas retail market **80 suppliers** have been active, of which:
  - 35 suppliers who are active on the regulated retail market; and
  - 78 suppliers who are active on the natural gas competitive retail market.

- **The total number of final gas customers** in December 2018 was approximately 3,865,456, of which 204,454 non-household customers (about 5.29%) and 3,661,002 household customers (about 94.71%).
- **The total gas consumption** registered in 2018 was approximately 130 TWh, showing a decrease of 0.25% compared to 2017. In 2018, the rate of the quantities consumed by household customers of the total consumption delivered by suppliers is **28.48%,** and the number of these customers represents **94.71%** of the total final gas customers. Even though the number of non-household customers represents only **5.29%** of the total gas final customers, the rate of the quantities consumed by them is **71.52%** of the total consumption delivered by the suppliers in 2018.

- **The total number of customers supplied in a competitive regime** in the month of December 2018 was 424,387. In 2018, it is observed **an increase by approximately 2 percentage points of the real natural gas market opening degree** compared with 2017 that reached to approximately 74% of the total consumption of the final customers.

- "*The document of concept for the development of an entry/exit system on the natural gas market from Romania and the implementation of European network codes*" elaborated by a working group formed of representatives of the European Commission, ACER, ENTSOG, ANRE and SNTGN TRANSGAZ S.A. has been implemented through the approval of the **ANRE Order no. 167/2018** *on the amendment and completion of the network code for the national natural gas transmission system*, approved through the ANRE Order no. 16/2013, that came into force on the date of 19 September 2018.

2.3. Consumer protection and dispute resolution in the electricity and natural gas sector

- **As of 01.07.2018, subsequent to the completion of the deregulation calendar, there will no longer be any regulated tariffs approved by ANRE**, the consumption of household customers being invoiced at tariffs/prices for the universal service endorsed by the ANRE. Consequently, household customers may conclude a contract for supply with any supplier who is active on the electricity market. They have the unconditional right to the universal service (US), respectively for the supply of electricity to be made under conditions of quality and reasonable, transparent, easily comparable and non-discriminatory prices, according to the regulations of the ANRE. Household customers may make use anytime of the eligibility, having the right to change the supplier of electricity in accordance with the provisions of the procedure approved through the **ANRE Order no. 105/2014.** They are also entitled to the US **non-household customers** with less than 50 employees and an annual turnover or total value of the assets marked in the balance sheet according to the annual fiscal reports not higher than 10 million EUR, these customers having the possibility to benefit from this right based on the request and supporting documents sent to the Supplier of Last Resort (FUI).

- In 2018, ANRE introduced the obligation for all suppliers of electricity active on the retail market to complete the price comparison software developed by ANRE in 2017, in order to increase the degree of information of final customers, for the selection of the supplier. Both software applications, for electricity and natural gas sector, have been improved.

- Following the actions of control carried out, in 2018 they have been drawn up **1125 reports of findings and sanctioning of contraventions,** being applied for the irregularities found a number of **1448 civil sanctions,** distributed as follows: 485 in the field of electricity, 907 in the field of natural gas, 56 in the field of energy efficiency.

- Through the reports of findings and sanctioning of contraventions, they have been applied **fines in a total amount of 19,721,935.15 RON.**

3. The electricity market

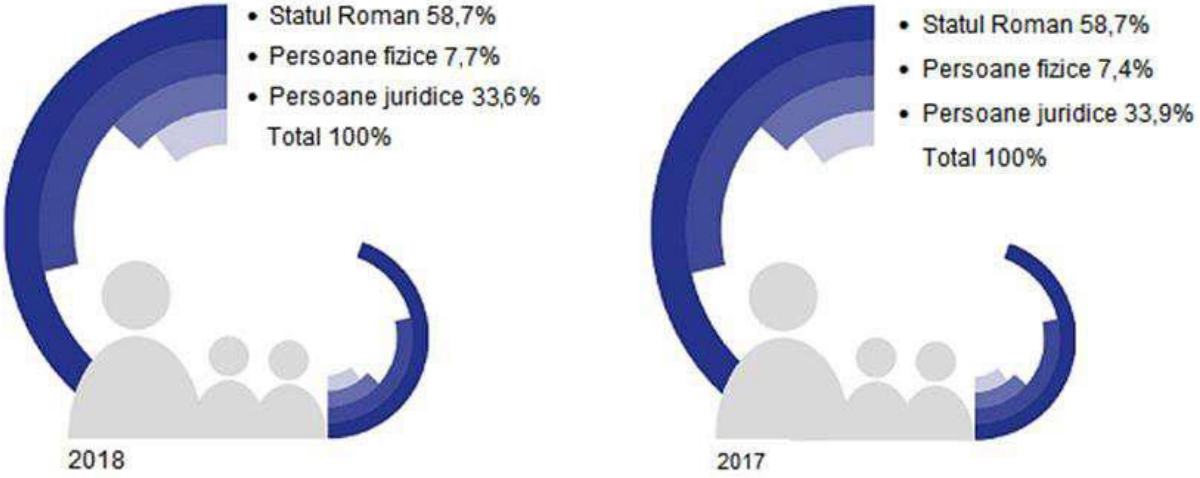
3.1. Aspects related to network regulation

3.1.1. Unbundling

Compania Naţională de Transport al Energiei Electrice "Transelectrica" - S.A., a transmission system operator within the national power system, is certified according to the **ownership unbundling model**. In 2018 ANRE continued to monitor the compliance with the certification conditions, prompted by the changes in the company's management (members of the board of directors and the supervisory board). For each change notified by the operator, ANRE verified that the unbundling conditions were maintained, finding that the relevant legal requirements were met.

CNTEE Transelectrica S.A. manages and operates the power transmission system and ensures electricity exchanges between the countries of Central and Eastern Europe as a member of ENTSO-E (The European Network of Transmission System Operators for Electricity). The length of the overhead electrical networks operated by CNTEE Transelectrica S.A. is approximately 8834.4 km.

The ownership structure of CNTEE Transelectrica SA as at 31.12.2018 was the following: 58,7 % – Romanian State, 33,9% - legal entity shareholders, 7,4% - natural person shareholders. As at 31.12.2018, the *legal entity shareholders* position also includes the holding by DEDEMAN SRL of 5,72% of shares. The company has been listed on the Bucharest Stock Exchange since August 2006.



Source: CNTEE Transelectrica S.A.

In 2018, **51 licensed electricity distribution operators** activated in Romania, similarly to 2017, of which 8 service over 100,000 customers each. All eight companies have completed the process of legal separation of the distribution activity from that of electricity supply. Electricity distribution operators with less than 100,000 customers do not have to separate the distribution activity from the other activities of the company pursuant to the provisions of Directive 72/2009/EC concerning common rules for the internal market in electricity.

Both the transport and the distribution companies have their own headquarters, logos and websites.

The general conditions associated to licenses for the electricity distribution service granted by ANRE to distribution operators were approved by Annex 1 to ANRE Order no. 73/2014, published in the Official Gazette of Romania, Part I, no. 599/12.08.2014, the 8 concessionaire operators' obligations to respect them being stipulated by individual administrative decisions issued by ANRE. Art. 49÷51 of Annex 1 to the Order stipulate the obligations of these distribution operators in terms of independence, pursuant to the legal provisions for the unbundling of the power distribution activity from the supply thereof, including obligations regarding the maintenance of separate identities in relation to affiliated economic operators (Article 51: " In carrying out the power distribution service, including communication and advertising, the licensee must avoid creating confusion among affiliated economic operators as to the separate identity.").

ANRE monitored the enforcement by the concessionaire distribution operators of the provisions of Order no. 5 from 4 February 2015 for the approval of the *Regulation on the ANRE's monitoring of the compliance programs set up by the electricity distribution operators*.

Analyzing the compliance agents' reports for 2018, which, according to the above-mentioned regulation, were received from the 8 concessionaire distribution operators at the end of 2018, ANRE found that the measures included in the compliance programs are in line with the unbundling objectives established by the law and by the ANRE procedure.

In 2018, ANRE has been informed by the changes incurred by the management (members of the board of directors and supervisory board, general directors), at some of the distribution operators. For each change notified by the operator, ANRE verified the maintenance of the unbundling conditions, finding that the requirements of the applicable regulations are met.

In order to emphasize the unbundling process and avoid any confusion with the related supply companies, ANRE found it necessary for distribution system operators to undergo a detailed *rebranding* program as part of the *compliance program*. Thus, this program started in 2016, and from the reports transmitted by the compliance officers it resulted that the *rebranding* program ended in 2018, as originally foreseen.

It has been found that all eight distribution operators implemented the *rebranding* timetable and performed the activities included in the program by the indicated deadlines, namely:

1 Updating the compliance program, submitting it to ANRE and publishing on the distributor's website;
2 Implementation of name, sign, logo, emblem;
Registration with the Trade Register, change of stamps;
3 Commencement of customer notification campaign, including contracts;
4 Signaling of locations to which customers have access: headquarters, branches, customer relations centres, information points;
5 Workers' identification cards, badges, uniforms for employees providing the user interface at the headquarters, customer relations centres, information points;
6 Amendment of the website content and contact email addresses given to customers;
7 Amendment of name/logo in software programs used directly by customers;
8 Amendment of document headers: opinions, contracts, certificates, invoices, customer correspondence (which shall be printed at the same time as the contents of the correspondence)
9 Amendment of licenses;
10 Workers' identification cards, badges, uniforms for employees not providing user interface;

11 Change of pre-printed document headers: invoice books, forms, leaflets, stationery etc.;
12 Signaling of locations to which customers have access: interior elements (banners, stands, other personalized decoration items);
13 Working and protective equipment for workers who perform interventions on users' electrical installations interface;
14 Signaling of vehicles used for interventions on users' electrical installations interface.

The shareholding structure of the 8 distribution operators providing the service to more than 100,000 users is:

1. **Distribuţie Energie Oltenia**: CEZ a.s., share on benefit and loss: 99.9999986019%/99.9999986019%; CEZ POLAND DISTRIBUTION B.V., share on benefit and loss 0.0000013981%/0.0000013981%.

2. **E-Distribuţie Banat:** Enel Investment Holding B.V., share on benefit and loss: 51.0036% / 51.0036%; Societatea de administrare a participațiilor în energie (SAPE) S.A., share on benefit and loss: 24.8683% / 24.8683%; Fondul Proprietatea S.A., share on benefit and loss: 24.1281% / 24.1281%.

3. **E-Distribuţie Dobrogea** (as at 25.08.2018): Enel Investment Holding B.V., share on benefit and loss: 51.003% / 51.003%; Societatea de administrare a participațiilor în energie (SAPE) S.A., share on benefit and loss: 24.903% / 24.903%; Fondul Proprietatea S.A., share on benefit and loss: 24.094% / 24.094%.

4. **E-Distribuţie Muntenia**: Enel Investment Holding B.V., share on benefit and loss: 78% / 78%; Societatea de administrare a participațiilor în energie (SAPE) S.A. share on benefit and loss: 10% / 10%; S.C. Fondul Proprietatea S.A., share on benefit and loss: 12% / 12%.

5. **Delgaz Grid** (as at 16.04.2018): ALLIANZ TIRIAC ASIGURARI SA, share on benefit and loss: 1.2292% / 1.2292%; ALLIANZ INFRASTRUCTURE LUXEMBOURG I S.A.R.L., share on benefit and loss: 28.7708% / 28.7708%; E.ON Romania S.R.L., share on benefit and loss: 56.4853% / 56.4853%; MINISTERUL ENERGIEI, share on benefit and loss: 13.5147% / 13.5147%.

6. **SOCIETATEA DE DISTRIBUŢIE A ENERGIEI ELECTRICE MUNTENIA NORD S.A.**, (as at 16.04.2018): ENERGETICA ELECTRICA SA, share on benefit and loss: 99.9999696922382% / 99.9999696922382%; SOCIETATEA DE DISTRIBUȚIE A ENERGIEI ELECTRICE TRANSILVANIA SUD SA, share on benefit and loss: 0.00002821951748% / 0.00002821951748%.

7. SOCIETATEA DE DISTRIBUŢIE A ENERGIEI ELECTRICE TRANSILVANIA SUD S.A., (as at 16.04.2018): SOCIETATEA DE DISTRIBUȚIE A ENERGIEI ELECTRICE TRANSILVANIA NORD SA, share on benefit and loss: 0.01% / 0.01%; ENERGETICA ELECTRICA SA, share on benefit and loss: 99.99% / 99.99%.

8. **SOCIETATEA DE DISTRIBUŢIE A ENERGIEI ELECTRICE TRANSILVANIA NORD S.A.**, (as at 16.04.2018): SOCIETATEA DE DISTRIBUȚIE A ENERGIEI ELECTRICE MUNTENIA NORD S.A., share on benefit and loss: 0.00002693500685% / 0.00002693500685%; ENERGETICA ELECTRICA SA, share on benefit and loss: 99.9999829770757% / 99.9999829770757%.

The financial statements of TSOs and distribution operators are published separately.

The regulator sets out detailed rules on cost separation. These rules are included in the licensing conditions applicable to transmission and distribution activities as well as in the specific network tariff calculation methodologies. The normative acts in force provide sanctions in case of violation of the requirements on unbundling.

3.1.2. Technical operation

The Balancing Market

The balance between electricity demand and production is established on a commercial basis, in real time, on the **Balancing Market** (BM).

In order to ensure the availability of enough energy so as to balance the system, TSO contracts reserves (ancillary services) for periods of up to one year (contracts that are regulated or concluded on the ancillary services market). Each reserve contract stipulates the seller's obligation to provide the TSO hourly with a certain amount of reserves of a certain type, the energy corresponding to the reserved power must be available on the BM.

The BM starts the day before, after the physical notifications have been accepted by the TSO, and is concluded at the end of the delivery day. The BM is a mandatory market, which means that participants operating dispatchable units must market all the available electricity here. The BM consists in trades of balancing energy pertaining to the secondary reserve, the fast tertiary reserve and the slow tertiary reserve.

The balancing energy is ensured by:

a) increase of power, namely by increasing the output of a dispatchable unit or by reducing the consumption of a dispatchable consumer or of a pumping storage plant registered as dispatchable consumption;
b) decrease of power, namely by reducing the output of a dispatchable unit or increasing the consumption of a pumping storage plant registered as dispatchable consumption.

Each license holder must take financial responsibilities to the TSO to ensure the physical balance between the measured output, the scheduled purchases and electricity *imports* on one hand, and the measured consumption, scheduled sales and electricity *exports* on the other, for one or more *connection points* and/or for one or more *transactions*. Responsibility for balancing is taken via the party in charge with the balancing (BRP), set up by TSO at the request of the license holders. A license holder may register as a BRP or may transfer the balancing responsibility of an existing BRP.

If a BRP is in a negative imbalance, it will pay for the amount of electricity it bought from the TSO for balancing purposes at the hourly energy deficit price, and if a BRP is in a positive imbalance, it will sell to the TSO the surplus energy at the hourly energy surplus price.

For Romania, a single balancing zone is defined, operated by a sole licensed system operator/ balancing market operator, CNTEE Transelectrica SA. Interaction with other control areas is carried out through inter-TSO mutual assistance exchanges, and not by accepting offers that are integrated in a common merit order.

In 2018 it has been approved the **ANRE Order no. 31/31.01.2018** on the approval of the Regulation for the operation and settlement of the balancing market and the Regulation for the calculation and settlement of the imbalances of the parties responsible with the balancing.

The main amendments brought by the two regulations to the provisions of the Commercial Code of the Energy Wholesale Market refer to: the removal of the limitation regarding the maximum difference admitted, of 250 RON/MWh, between the maximum price and the minimum price of the offers on the balancing market, the maintenance of the energy effectively transmitted as basic amount based on which they are constituted the rights of collection/obligations of payment, but taking into consideration the same amount as a contractual obligation of reference for the BRP, the introduction of the obligation to register

as a BRP any license holder/ holder of the rights of supplier/trader at the beginning of their activity on the energy market, the consolidation of the transparency of the balancing market, the presentation of any clarifications in order to identify the manner of settlement of any network restrictions and the manner of establishment of the corresponding costs.

Performance standards and aspects regarding connection to the grid

The regulatory framework in force, based on which ANRE fulfils its legal powers to impose to network operators firm obligations regarding the completion of the investment and maintenance works necessary to maintain the electrical networks at a high level of safety, reliability and efficiency, and to monitor the technical state of the electrical networks of public interest, is comprised of:

- *the Procedure for the elaboration and approval of the investment programs for concessionaire economic operators, performing electricity distribution services*, approved through the ANRE Order no. 8/2016, as further amended and supplemented;
- *the Performance standard for the power distribution service*, approved through the ANRE Order no. 11/2016, as further amended and supplemented;
- *the Performance standard for the power transmission service and for the system service*, approved through the ANRE Order no. 12/2016;
- *the Regulation for the organization of the maintenance activity*, approved through the ANRE Order no. 96/2017;
- the ANRE Order no. 145/2014 on *the implementation of the energy smart metering systems,* as further amended and supplemented.

The safety level and the technical state of the networks are reflected directly in the annual level of performance indicators for services, especially those related to the continuity of electricity supply. Every year, ANRE draws up a report on the achievement of the performance indicators for the power transmission, system and distribution services and on the technical state of the transmission and distribution networks, which it publishes by June 30 on website www.anre.ro at http://www.anre.ro/ro/energie-electrica/rapoarte/rapoarte-indicatori-performanta.

Monitoring the technical state and maintenance level of electrical networks

The technical state of electrical networks is monitored by ANRE through the annual monitoring of the age of facilities, in relation with the volume of the investments and maintenance works carried out by the network operators, as well as through the performance indicators of power transmission, system and distribution services.

Volume and age of the power transmission network

The Power Transmission Network (RET) includes overhead electrical lines (OEL) with rated voltages of 750 kV, 400 kV, 220 kV, 110 kV and substations with an upper voltage of 750 kV, 400 kV and 220 kV, according to the following tables:

No.	U (kV)	Total OEL (km route)	
		2017	2018
1	750	3.108	3.11
2	400	4915.2	4971.7
3	220	3875.6	3875.64
4	110	40.4	40.40

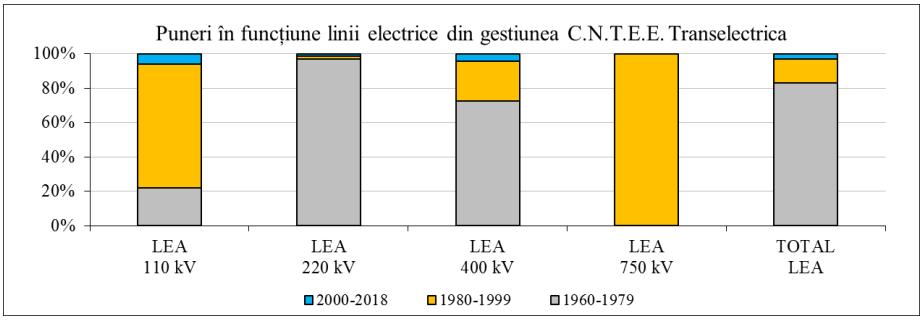
No.	U (kV)	Total substations (pcs)	
		2017	2018
1	750	1	1
2	400	38	38
3	220	42	42

Note: The lines with the constructive voltage 750 kV Isaccea – Stupina and Stupina – Varna operates at the rated voltage of 400 kV, being classified in this category.

The total length of the electric transmission network is 8,890.87 km, of which the interconnection lines are 489.04 km long.

Overhead electrical lines:

PIF period	OEL category									
	110 kV		220 kV		400 kV		750 kV		TOTAL	
	Length (km route)	% of the category total	Length (km route)	% of the category total	Length (km route)	% of the category total	Length (km route)	% of the category total	Length (km route)	% of the category total
1960-1979	8.9	22	3764.3	97.1	3613.67	72.7	-	-	7386.85	83.08
1980-1999	29.1	72	61.1	1.6	1144.42	23.0	3.11	100	1237.75	13.92
2000-2018	2.42	6	50.3	1.3	213.6	4.3	-	0	266.29	3.00



Of the total OEL, 83% have the year of implementation in the period 1960 – 1979, 14% between the years 1980 and 1999. It is found that a large part of the OEL have a duration of use at the limit of the lifespan, with an exceeded technological level, but it is also recorded a reduced rate of implementation after year 2000, of 3%.

The degree of utilization of the OEL represents the percentage ratio between the duration of operation and the standard duration of normal life (48 years according to the latest edition of the Catalogue on the Classification and Normal Operating Time of Fixed Assets) and it is presented hereinafter:

	PIF period	OEL category				
		110 kV	220 kV	400 kV	750 kV	TOTAL

Degree of utilization (%)	1960-1979	112.5	98.06	97.51	-	97.8
	1980-1999	63.3	77.08	71.71	66.67	71.76
	2000-2018	10.42	20.26	13.26	-	14.55

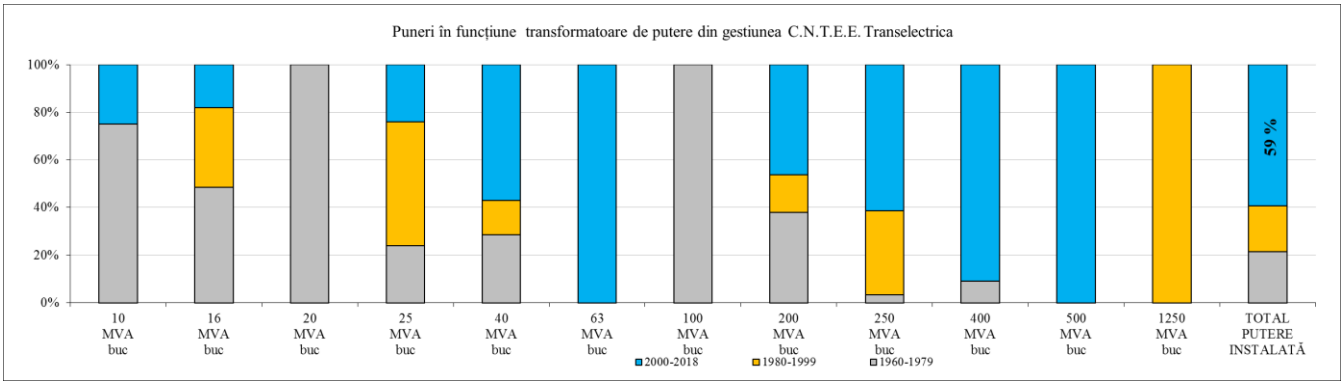
Note: They have been taken into consideration the constructive voltages of the OEL. In case that the same OEL comprises pillars sized for different constructive voltages, it has been taken into consideration the lowest voltage. The degree of utilization by OEL category has been calculated as a weighted mean with the length of the degrees of utilization of the OEL.

It is noted a very high degree of utilization (97.8 %) for the OEL commissioned until 1979, given that they represent 83.06 % of the total overhead electrical lines from the administration of the TSO.

Transformers and autotransformers:

	PIF period	Trafo apparent power [MVA]												TOTAL [MVA/%]	
		10	16	20	25	40	63	100	200	250	400	500	1250		
Trafo number [pcs]	1960-1979	6	16	1	6	2	-	1	31	1	2	-	-	7916	21.42
	1980-1999	-	11	-	13	1	-	-	13	11	-	-	1	7141	19.32
	2000-2018	2	6	-	6	4	2	-	38	19	20	2	-	21902	59.26

Note: It has been used as reference the year of the first commissioning



From the total power installed in the transformers/ autotransformers, around 21.42% has been commissioned between 1960 and 1979, 19.32% between 1980 and 1999, and 59.26% after 2000.

The degree of utilization of transformers/autotransformers represents the percentage ratio between their duration of operation and the standard duration of useful life (24 years) and it is presented hereinafter:

	PIF period	Trafo apparent power [MVA]												Total
		10	16	20	25	40	63	100	200	250	400	500	1250	
Degree of utilization [%]	1960-1979	186.81	180.21	233.33	183.33	187.5		175	182.8	162.50	186.11			>100 %
	1980-1999	-	134.47	-	141.03	91.67			141.03	123.86			133,33	
	2000-2018	16.67	23.61	-	15.28	30.21	25		33.64	42.11	47.22	54.86		42 %

It is found that the duration of operation of the majority of the transformers/ autotransformers commissioned before 2000 (having the installed power of approx. 41% of the total power installed in the transformers and autotransformers) is exceeded. For the rest of the transformers/ autotransformers, the average degree of utilization compared to the power installed is approx. 42%.

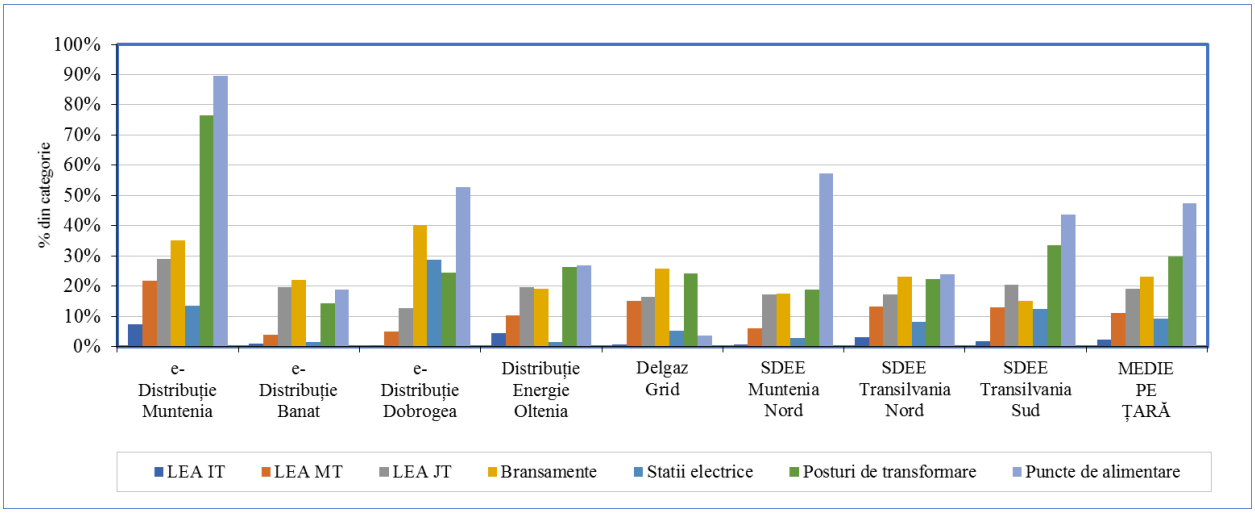
Volume and age of power distribution networks

At level of the entire country they are found the following start-ups:

PIF	OEL+UEL HV [km route]	OEL+UEL MV [km route]	OEL+UEL LV [km route]	LV connections [km route]	Electric stations [pcs]	Transformations substations [pcs]	Supply point [pcs]
before 1960	1,718	9,991	7,981	7,950	38	2,030	25
1960-1979	14,809	73,497	88,791	70,300	720	29,626	345
1980-1999	5,159	23,485	51,631	50,392	303	19,026	176
2000-2018	520	13,339	35,320	38,361	109	21,424	493
TOTAL	**22,205**	**120,312**	**183,724**	**167,204**	**1,170**	**72,156**	**1,039**

PIF	% of the total category						
	OEL+UEL HV	OEL+UEL MV	OEL+UEL LV	LV connections	Electric stations	Transformation substations	Supply points
before 1960	7.7	8.3	4.3	4.8	3.2	2.8	2.4
1960-1979	66.7	61.1	48.3	42.0	61.5	41.1	33.2
1980-1999	23.2	19.5	28.1	30.1	25.9	26.4	16.9
2000-2018	2.3	11.1	19.2	23.1	9.3	29.7	47.4

The share of energy capacities commissioned between 2000 and 2018 out of the total capacities is:



Most of the installations pertaining to transmission and distribution networks currently in operation have a long duration of useful life, predominantly over 35 years.

High voltage transmission and distribution lines commissioned after 2000 have a small share, on average less than 3 %, of the total length of these categories of electrical installations. Medium and low voltage power lines (including connections) commissioned after 2000 represent a larger percentage of the total length of these categories of electrical installations, reaching up to 11% for medium voltage and 21% for low voltage.

As regards the situation of the transformers/ autotransformers from the electric stations belonging to the TSO, it is found that a rate of 59% of their power installed has been commissioned after 2000 (21,902 MVA of the total installed of 36,959 MVA).

At the same time, it is found the fact that the number of electric stations in the distribution networks, commissioned after 2000 represents about 9% of the total, and the number of transformation substations and supply points reached approx. 30% of the total number pertaining to the two categories of electrical installations in 2017.

Given that only a small part of the power capacities managed by network operators has been rehabilitated or upgraded, ANRE requested network operators to apply consistent programs for restoring and upgrading existing facilities, enhancing and streamlining maintenance activities for the maintenance of electric appliances at nominal operating parameters and to perform adequate monitoring and assessment of the state of the networks.

The achievement of the maintenance schedule

The achievement of the maintenance schedule in RET in the period between 2016 and 2018 by CNTEE Transelectrica S.A., by types of works is presented in the table below:

<table>
<tr><th colspan="3"></th><th>2016</th><th colspan="2">2017</th><th colspan="2">2018</th></tr>
<tr><td colspan="3">Planned value</td><td>126,263,977</td><td colspan="2">106,979,224</td><td colspan="2">88,545,234</td></tr>
<tr><td colspan="3">Achieved value</td><td>83,661,301</td><td colspan="2">79,496,413</td><td colspan="2">86,825,665</td></tr>
<tr><td rowspan="10">Achievement degree [%]</td><td rowspan="2">Major</td><td>Capital Repairs (KR)</td><td rowspan="2">46.9</td><td>61</td><td rowspan="2">64.28</td><td>97.5</td><td rowspan="2">98.7</td></tr>
<tr><td>Current Repairs (CR)</td><td>65</td><td>99</td></tr>
<tr><td rowspan="8">Minor</td><td>Accidental Interventions (AI)</td><td rowspan="8">82.4</td><td>82</td><td rowspan="8">80.05</td><td>99,6</td><td rowspan="8">97.8</td></tr>
<tr><td>Technical Inspections (TI)</td><td>99</td><td>99.8</td></tr>
<tr><td>Special Works (SW)</td><td>75</td><td>94.5</td></tr>
<tr><td>Materials</td><td>29</td><td>96.3</td></tr>
<tr><td>Current repairs derived from minor maintenance work (TCR)</td><td>89</td><td>98.9</td></tr>
<tr><td>Technical Revisions (TR)</td><td>97</td><td>99.9</td></tr>
<tr><td colspan="3">Total</td><td>66</td><td colspan="2">74</td><td colspan="2">98</td></tr>
</table>

The degree of achievement of the maintenance schedule by type of installations is presented in the table below:

Category	Program achievement in 2016 [%]	Program achievement in 2017 [%]	Program achievement in 2018 [%]

Stations	75	77	97.97
OEL	53	70	98.89
Transformers/Autotransformers	86	81	97.05
Buildings	64	50	97.97
Total	**66**	**74**	**98**

In 2018, in terms of value, the maintenance schedule has been achieved in a rate of 98%, given the significant decrease of the planned value compared to the previous years, of about 18% compared to 2017, respectively about 30% compared to 2016.

The degree of achievement of the maintenance schedule by categories of works in **power distribution networks** is presented hereinafter, for each concessionaire operator:

e-Distribuție Muntenia

Maintenance schedule		**Program achievement in 2016 (%)**	**Program achievement in 2017 (%)**	**Program achievement in 2018 (%)**
LN1	Operational Works	51.12	96.27	68.69
	Periodic Control	69.61	66.16	87.21
LN2	Technical Revision	40.82	37.07	32.23
	Accidental Interventions	-	-	-
LN3	1st Degree Repairs	129.43	111.17	77.88
	Accidental Repairs	86.81	100.05	133.88
LN4	2nd Degree Repairs	-	-	-
TOTAL		**80.29**	**95.62**	**98.2**

The maintenance schedule at level of the DO has been achieved in terms of value in a rate of 98.2% of the planned value. Of the works performed, 38.6% represents works of preventive maintenance and 61.4% represents works of corrective maintenance.

e-Distribuție Banat

Maintenance schedule		**Program achievement in 2016 (%)**	**Program achievement in 2017 (%)**	**Program achievement in 2018 (%)**
LN1	Operational Works	73.2	84	134.3
	Periodic Control	74.5	46.8	37.1
LN2	Technical Revision	55.5	51.3	33.9
	Accidental Interventions	-	-	-
LN3	1st Degree Repairs	126.5	83.8	102.5
	Accidental Repairs	100.7	104.0	143.7
LN4	2nd Degree Repairs	-	-	-
TOTAL		**89.4**	**85.9**	**112.4**

The maintenance schedule has been achieved in a rate of 112.4% compared to the planned value. Of the works performed, 42.96% represents works of preventive maintenance, and 57.04% represents works of corrective maintenance.

e-Distribuție Dobrogea

Maintenance schedule		Program achievement in 2016 (%)	Program achievement in 2017 (%)	Program achievement in 2018 (%)
LN1	Operational Works	86.8	104	101.5
	Periodic Control	95.8	54.7	52.5
LN2	Technical Revision	57.3	49.3	38.1
	Accidental Interventions	-	-	-
LN3	1st Degree Repairs	67.0	72.3	84.2
	Accidental Repairs	88.5	89.9	121.8
LN4	2nd Degree Repairs	-	-	-
TOTAL			**79.4**	**94**

The maintenance schedule has been achieved in a rate of 94% of the planned value. Of the works performed, 51% represents works of preventive maintenance, and 49% represents works of corrective maintenance.

Distribuție Energie Oltenia

Maintenance schedule		Program achievement in 2016 (%)	Program achievement in 2017 (%)	Program achievement in 2018 (%)
LN1	Operational Works	108.1	99.1	105.1
	Periodic Control	106.5	98.5	108.5
LN2	Technical Revision	97.8	101.3	99.68
	Accidental Interventions	99.27	116.2	101.85
LN3	1st Degree Repairs	114.4	109.4	105.72
	Accidental Repairs	108.4	113.4	100.44
LN4	2nd Degree Repairs	111.3	109.5	86.86
TOTAL		**106.5**	**105.3**	**103.1**

The maintenance schedule has been achieved in a rate of 103.1% of the planned value. Of the works performed, 67.18% represents works of preventive maintenance, and 32.82% represents works of corrective maintenance.

Delgaz Grid

Maintenance schedule		Program achievement in 2016 (%)	Program achievement in 2017 (%)	Program achievement in 2018 (%)
LN1	Operational Works	83.3	98	99.7
	Periodic Control	49.9	62.7	77.8
LN2	Technical Revision	80.4	90.6	99.3
	Accidental Interventions	-	-	-
LN3	1st Degree Repairs	-	88.5	100.1
	Accidental Repairs	99.7	119.4	106.2
LN4	2nd Degree Repairs	67.7	-	-

TOTAL	**82.9**	**102**	**101.8**

The maintenance schedule has been achieved in a rate of 102% of the planned value. Of the works performed, 56% represents works of preventive maintenance, and 44% represents works of corrective maintenance.

SDEE Muntenia Nord

Maintenance schedule		**Program achievement in 2016 (%)**	**Program achievement in 2017 (%)**	**Program achievement in 2018 (%)**
LN1	Operational Works	111.3	105.3	105.8
	Periodic Control	41.1	52.4	68.8
LN2	Technical Revision	63.2	57.5	80.3
	Accidental Interventions	127	103.5	112.6
LN3	1st Degree Repairs	73.6	53.1	67.2
	Accidental Repairs	152.5	260	105.1
LN4	2nd Degree Repairs	23.5	6.3	53.5
TOTAL		**92.3**	**92.3**	**99.5**

The maintenance schedule has been achieved in a rate of 99.5% of the planned value. Of the total achievements of the maintenance schedule, 63.3% represented preventive maintenance, and 36.7% represented corrective maintenance.

SDEE Transilvania Nord

Maintenance schedule		**Program achievement in 2016 (%)**	**Program achievement in 2017 (%)**	**Program achievement in 2018 (%)**
LN1	Operational Works	94.5	102.6	167.7
	Periodic Control	77.2	78.1	72.5
LN2	Technical Revision	32.7	49.6	35.7
	Accidental Interventions	118.2	102.2	95.9
LN3	1st Degree Repairs	50.6	56.2	38.04
	Accidental Repairs	191.6	121.8	60.88
LN4	2nd Degree Repairs	74.6	-	6.72
TOTAL		**101**	**88.6**	**105.2**

The maintenance schedule has been achieved in a rate of 105% of the planned value. Of the total achievements of the maintenance schedule, 78% represented preventive maintenance, and 22% represented corrective maintenance.

SDEE Transilvania Sud

Maintenance schedule	**Program achievement in 2016 (%)**	**Program achievement in 2017 (%)**	**Program achievement in 2018 (%)**

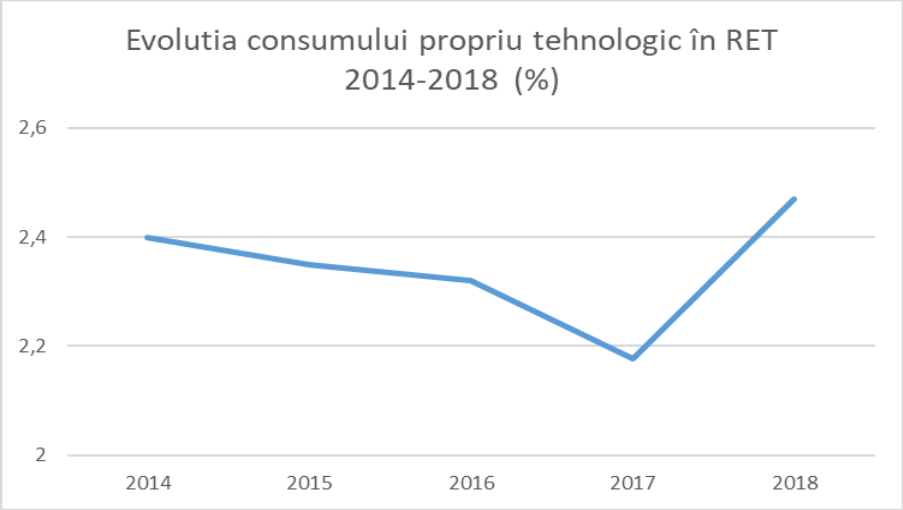
LN1	Operational Works	89.4	91.7	200
	Periodic Control	72.7	55.1	53.2
LN2	Technical Revision	104.6	52	58.6
	Accidental Interventions	132.5	135.7	109.8
LN3	1st Degree Repairs	100.2	38.7	10.7
	Accidental Repairs	205.3	178.7	204.9
LN4	2nd Degree Repairs	39.9	43.2	0
TOTAL		**100.5**	**92.4**	**114.16**

Of the total achievements of the maintenance schedule, 49.33% represented preventive maintenance and 50.67% represented corrective maintenance.

Monitoring of the performance indicators of the electricity transmission, system and distribution service, as well as of the duration of re-connection after planned repairs and unplanned interruptions

The overall performance and continuity indicators of the power transmission service

In 2018, **the own technological consumption in RET**, calculated as the difference between the power introduced in the RET and the power extracted from the RET, relative to the power introduced in the RET, was 2.47%. In the figure below it is presented the evolution of the own technological consumption in RET in the period between 2014 and 2018.



Power entering the RET in 2018 increased by 0.3% compared to the previous year, amid the increase of domestic net consumption by approx. 2%, given the increase by approx. 7% of the power received from the distribution networks, the increase by approx. 0.8% of the power generated by the electric generator sets that pump directly into the RET, and the increase by approx. 11% (364 GWh) of the physical import flows. RET own technology consumption increased quantitatively by 14% compared to the previous year.

According to the TSO explanations, to the increase of the losses contributed in the first place the unfavourable distribution of physical import/export flows on the interconnection lines (the decrease of the physical import and the increase of the physical export on the lines located on the Northern and North-Western borders, located in areas deficient in power generation, respectively the increase of the physical import and the decrease of the physical export on the lines located on the Southern and South-Western

borders, located in surplus areas of power generation, have determined the increase of power transmission on long distances, from surplus southern areas to deficient northern areas) and secondly, the large amount of precipitations, especially in areas of high density of transmission lines (Oltenia, Muntenia, Dobrogea), added to the significant increase of corona losses.

The average unavailability of the installations is determined according to planned or unplanned (accidental) events and is related to the length of RET OEL expressed in km, or the apparent power expressed in MVA for transformers and autotransformers in RET stations.

The average unavailability of the installations in 2018 is as follows:

Year 2018	***Total* unavailability [hours]**	**Unavailability determined by *planned* events [hours]**	**Unavailability determined by *unplanned* events [hours]**
INDLIN	154.42	145.17	9.25
INDTRA	129.53	126.42	3.11

It is found the fact that the average duration of unplanned interruptions represents about 6% of the total average time of interruption in case of power lines, respectively in case of transformers and autotransformers. Compared to the number of hours of a year, INDLIN represents 1.8 %, and INDTRA represents 1.5 %.

In the table below it is presented the evolution of the INDLIN and INDTRA indicators for the period comprised between 2014 and 2018.

Year	**2014**	**2015**	**2016**	**2017**	**2018**
Planned interruptions:					
INDLIN (hours/year)	114.62	147.95	169.91	146.43	145.17
INDTRA (hours/year)	103.66	146.11	199.38	163.50	126.42
Unplanned interruptions:					
INDLIN (hours/year)	27.97	36.68	16.88	11.67	9.25
INDTRA (hours/year)	8.52	8.9	4.91	18.51	3.11
Total:					
INDLIN (hours/year)	142.59	184.63	186.79	158.10	154.42
INDTRA (hours/year)	112.18	155.01	204.29	182.01	129.53

The unavailability of the OEL and Trafo was reduced, both as regards planned interruptions and accidental interruptions, a reduction that was achieved through a better correlation between the maintenance and investment schedules, by which it was reduced the time of withdrawal of the equipment

from exploitation. At the same time, they have been analyzed and examined the equipment/ fixed assets with a normal period of operation exceeded, that have been the basis for the adoption of some measures/ the establishment of some maintenance terms in good conditions of exploitation and operation, until the assurance of the replacement conditions.

The overall performance indicators for continuity had the following values in 2018:

No.	Indicator	Reason of interruption	Total
1	ENS [MWh]	Planned interruptions	0
2	ENS [MWh]	Unplanned interruptions caused by force majeure events	0 / 476.66
3	ENS [MWh]	Unplanned interruptions caused by particular weathers conditions	0
4	ENS [MWh]	Unplanned interruptions determined by other operators, costumers, producers	0
5	ENS [MWh]	Unplanned interruptions due to TSO	118.81 / 3,088.83 1)
6	AIT [min/year]	Planned interruptions	0
7	AIT [min/year]	Unplanned interruptions caused by force majeure events	0 / 4.52
8	AIT [min/year]	Unplanned interruptions caused by particular weathers conditions	0
9	AIT [min/year]	Unplanned interruptions determined by other operators, costumers, producers	0
10	AIT [min/year]	Unplanned interruptions due to TSO	1,127 / 29,302 2)

Note:1) ENS - the first value represents the energy not supplied to customers and the second one represents the energy not supplied from plants because of long-lasting interruptions 2) AIT - the first value represents the average time of interruption of customers and the second one represents the average time of interruption of the plants because of long-lasting interruptions

In the table below they are summarized the values of the quality indicators regarding the continuity of the service in the period between 2013 and 2018.

	2013	2014	2015	2016	2017	2018
ENS (MWh)						
Planned interruptions	0	0	0	0	0	0
Unplanned interruptions caused by force majeure events	0	0	0	0	0	0 / 476.66
unplanned interruptions caused by particular weather conditions		1)		38.62	0	0

unplanned interruptions caused by other operators, costumers, producers	0	0	0	0	11.85 / 2.05[2)]	0
unplanned interruptions due to TSO, of which long-lasting interruptions	30.89	82.51	38.36	224.69/ 264.70[2)]	289.46 / 1105.55[2)]	118.81 / 3088.83[2)]
AIT (min/year)						
Planned interruptions	0	0	0	0	0	0
unplanned interruptions caused by force majeure events	0	0	0	0	0	0 / 4.52
unplanned interruptions caused by particular weather conditions	[1)]			0.36	0	0
unplanned interruptions caused by other operators, costumers, producers	0	0	0	0	0.113 / 0.019[2)]	0
unplanned interruptions due to TSO, of which long-lasting interruptions	0.35	0.82	0.36	2.11/ 2.49[2)]	2.762 / 10.550[2)]	1.127 / 29.302[2)]

Note: 1) The reports for the years 2013-2015 were based on the Performance Standard for the Transmission and System of Electric Power, approved by the ANRE Order no. 17/2007, which did not include this chapter.

2) The performance standard for the energy transmission service and the system service, approved by the ANRE Order no. 12/2016 requires the recording of the values for the energy not supplied to costumers, respectively for the non-supplied energy in the power plants due to long-term interruptions. For 2012-2015 the value refers to the energy not supplied to costumers.

Amid the decrease of the number of accidental events with energy not supplied in 2018 compared to the previous year, it is noted an improvement of **the performance indicators regarding the continuity of the energy transmission service** corresponding to the unplanned interruptions with energy not supplied to the consumers due to TSO (ENS 118.81 MWh in 2018 / 289.46 MWh in 2017 and AIT 1.127 minutes/year 2018 / 2.762 minutes/year 2017).

In terms of energy not generated in electrical plants because of unplanned interruptions for TSO internal causes, even though the number of incidents with long-lasting interruption decreased in 2018 compared to the previous year (2 incidents recorded in 2018 / 7 incidents recorded in 2017) the amount of energy not generated in plants because of TSO internal causes increased in 2018 compared to the previous year (3088.83 MWh in 2018 / 1105.55 in 2017). The increase has been caused by a single accidental event registered in the electrical station from Cernavoda on the date of 16.08.2018, when following an erroneous identification of the primary switching equipment, Unit no. 2 from Cernavoda has been disconnected accidentally from the NPS. The incident generated a non-supplied energy of 3043 MWh (99% of the total value of the indicators). At the time of the disconnection from the NPS, the power generated by Unit 2 was 622 MW. Following the disconnection, the automatizations from the CNE Cernavoda worked properly and led to the isolated operation on services specific to Unit 2, at a power of 61 MW. The operation of Unit 2 was stable, within the limits of the admissible parameters, the nuclear reactor decreasing automatically its power to 60% of the nominal value, in compliance with the technological process specific to these situations. To avoid the production of such incidents it was ordered the elaboration of some topics meant to help the operational staff involved in the performance of the

execution manoeuvres acknowledge the risks that may occur because of the non-compliance with the regulations, instructions and technical notes in force.

From the point of view of the **commercial quality of the transmission service** - the relevant performance indicators in the process of connection to the RET fall within the deadlines established by the standard. The average delivery time of the Connection Technical Evaluation Report and the Connection Certificate is close to the deadline set by the standard (10 calendar days). It is also noted that TSO did not register in 2018 any complaints about connection, quality of voltage curve, billing, collection, or other topics.

General System Performance Indicators

In 2018, the ***emergency assistance*** has been requested as follows:

Emergency assistance	Duration [hours]	Amount [MWh]
Requested	4	400

The deviation of the NPS balance by ACE frequency correction is presented in the following table:

Deviation of NPS balance by frequency correction [MWh/h]		
	2017	2018
Average value	1.67	1.01
Maximum value	229	300
Minimum value	-133	-206
Standard deviation	13.38	12.98

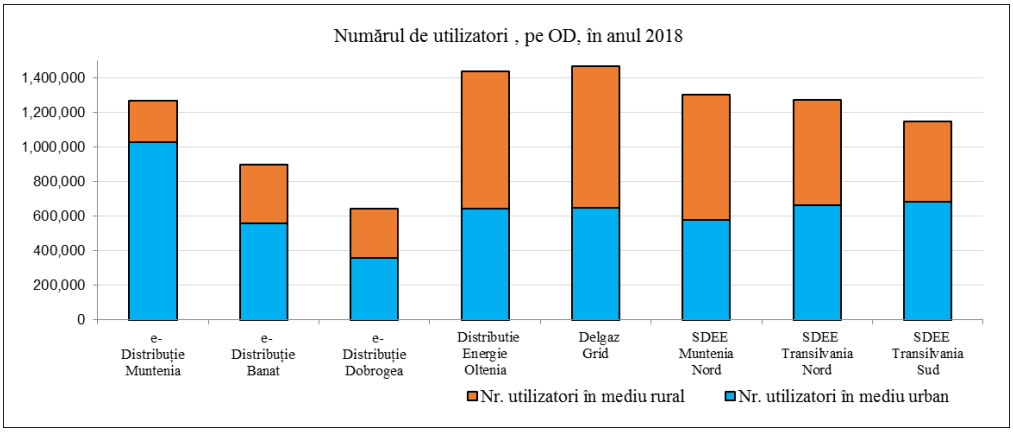
The coordination of the NPS operation is presented in the following table:

	Congestion caused by network restrictions		
	in the scheme with N elements in operation in the RET and in the 110kV network of RED	as a result of the withdrawal of RET elements from operation	as a result of the withdrawal of RED elements from operation
Amount of energy used for network congestion management [MWh]	0	28,821.784	982,924
Congestion cost [RON]	0	7,473,978	743,700

Continuity indicators of the power distribution service

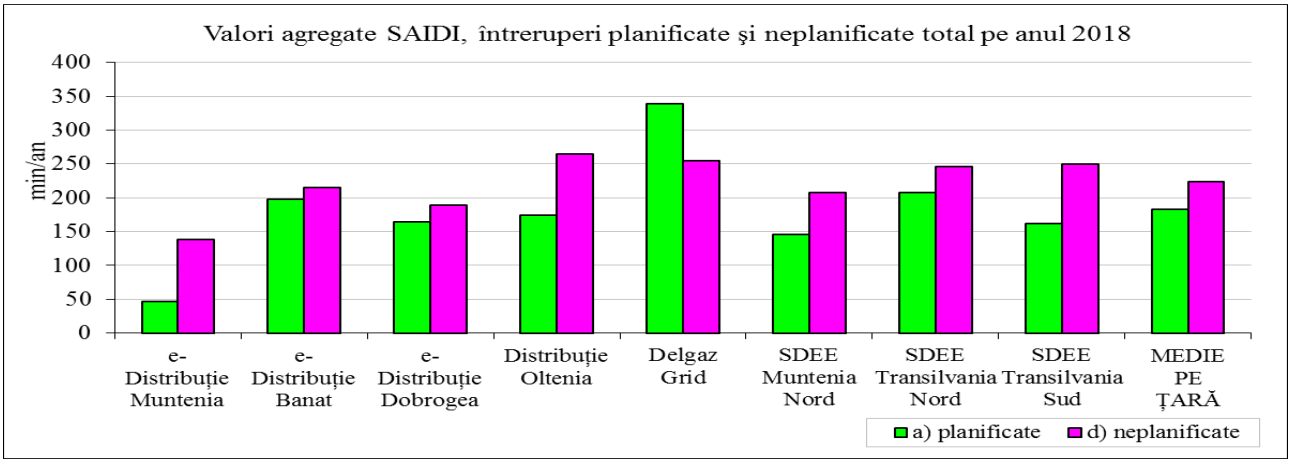
In 2018 a number of 9,448,823 users were connected to the power grids pertaining to the eight distribution system operators (DSO), license holders, concessionaires of the power distribution service, in growth

compared to the previous years (9,332,511 in 2017, 9,260,396 in 2016, 9,187,239 in 2015), of which 5,170,629 in urban areas (54.72% out of the total), respectively 4,278,194 in rural areas.



The SAIDI User Supply Continuity Index registered the following values for 2018:

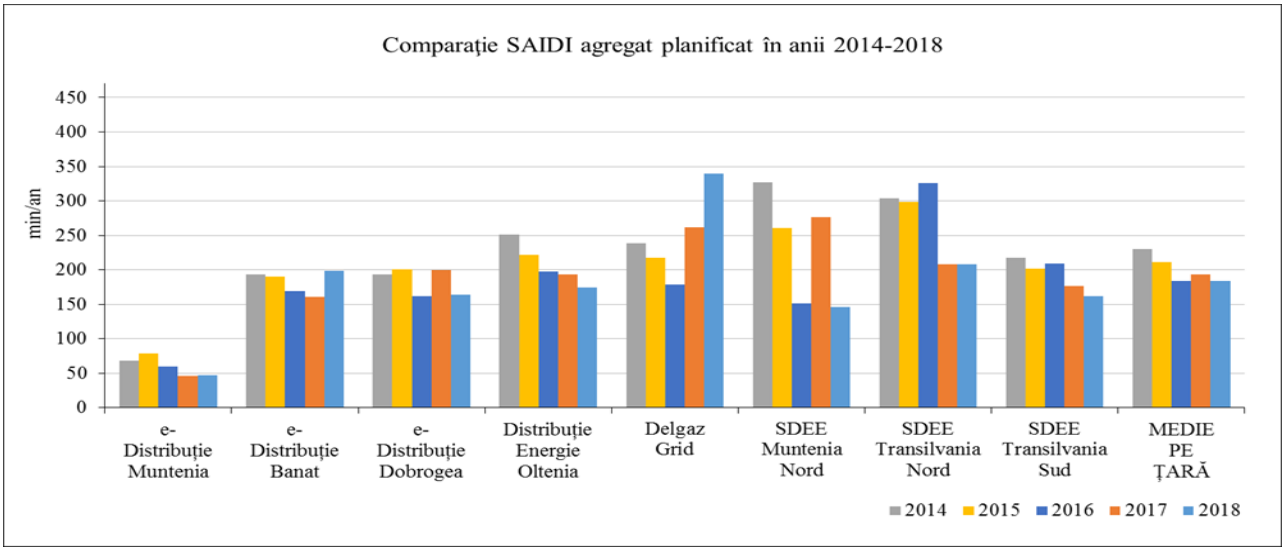
DSO	E-Distribuție Muntenia	E-Distribuție Banat	E-Distribuție Dobrogea	Distribuție Energie Oltenia	Delgaz Grid	SDEE Muntenia Nord	SDEE Transilvania Nord	SDEE Transilvania Sud	Aggregate value by country
SAIDI planned interruptions (a) [min/yr.]	46.58	198.20	163.85	174.65	339.05	146.38	208.36	161.56	183.58
SAIDI unplanned interruptions (d) [min/yr.]	138.03	214.74	188.80	265.05	254.79	207.55	246.24	250.27	224.14

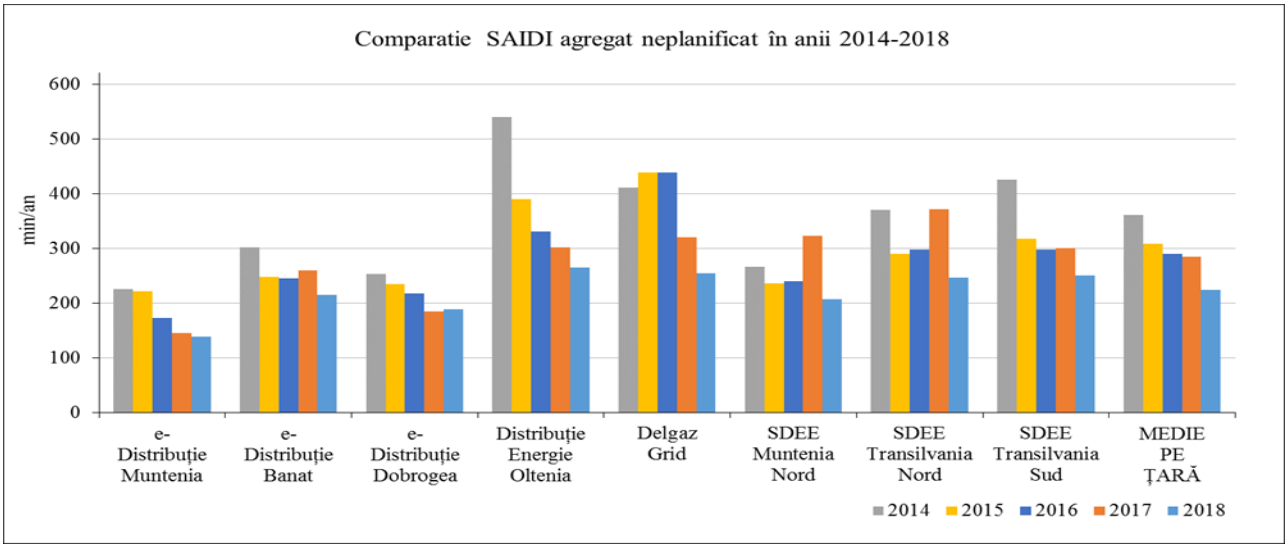


SAIDI planned interruptions has a decrease in average value to 183.58 min/year (as compared to 193 min/year in 2017), above the value of approx. 40 – 150 min/year registered in advanced European countries. Also at country level, SAIDI unplanned interruptions registers a decrease to the value of 224 min/year (compared to 284 min/year in 2017), remaining nevertheless above the value of approx. 20 – 100 min/year registered in advanced European countries.

According to the analysis performed, between 2014 and 2018 there is a trend of improvement in the values of SAIDI unplanned and planned interruptions.

Year	2014	2015	2016	2017	2018
SAIDI planned interruptions (a) [min/yr.]	230	211	184	193	184
SAIDI unplanned interruptions (d) [min/yr.]	361	308	290	284	224

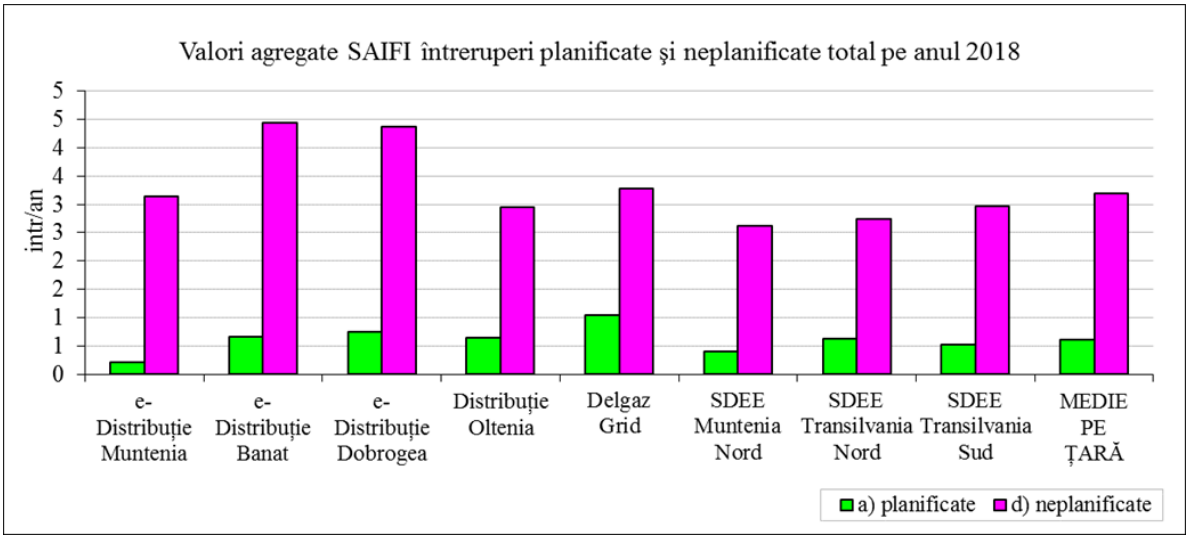




The SAIFI User Supply Continuity Index registered the following values for 2018:

DSO	E-Distributie Muntenia	E-Distributie Banat	E-Distributie Dobrogea	Distribuţie Energie Oltenia	Delgaz Grid	SDEE Muntenia Nord	SDEE Transilvania Nord	SDEE Transilvania Sud	Aggregate value per country

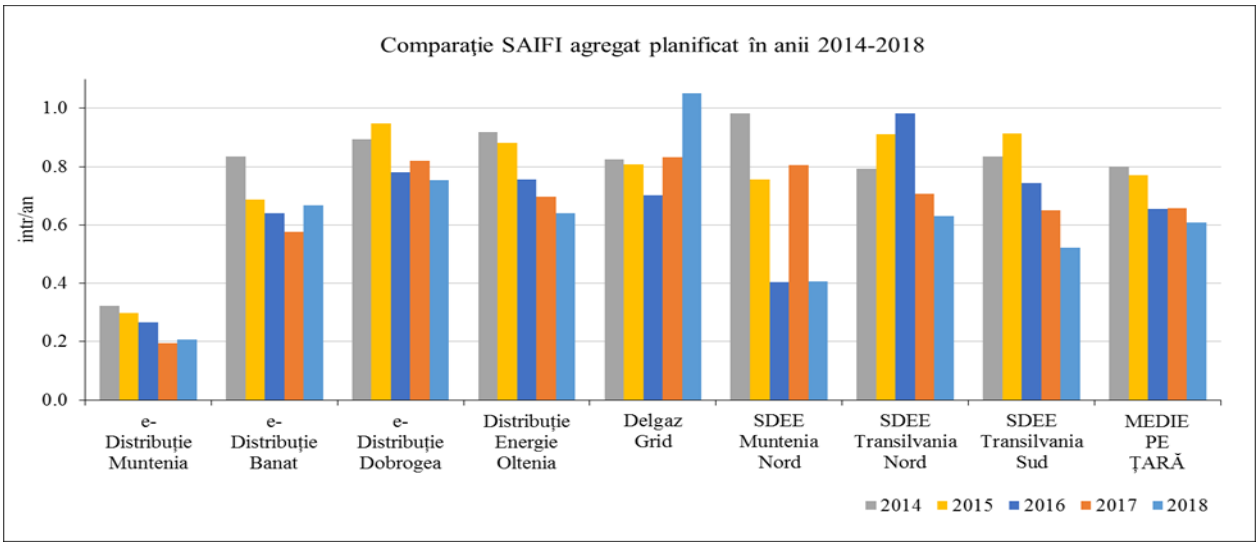
SAIFI planned interruptions (a) [intr/yr.]	0.21	0.67	0.75	0.64	1.05	0.41	0.63	0.52	0.61
SAIFI unplanned interruptions (d) [intr/yr.]	3.15	4.44	4.37	2.95	3.29	2.62	2.74	2.97	3.20

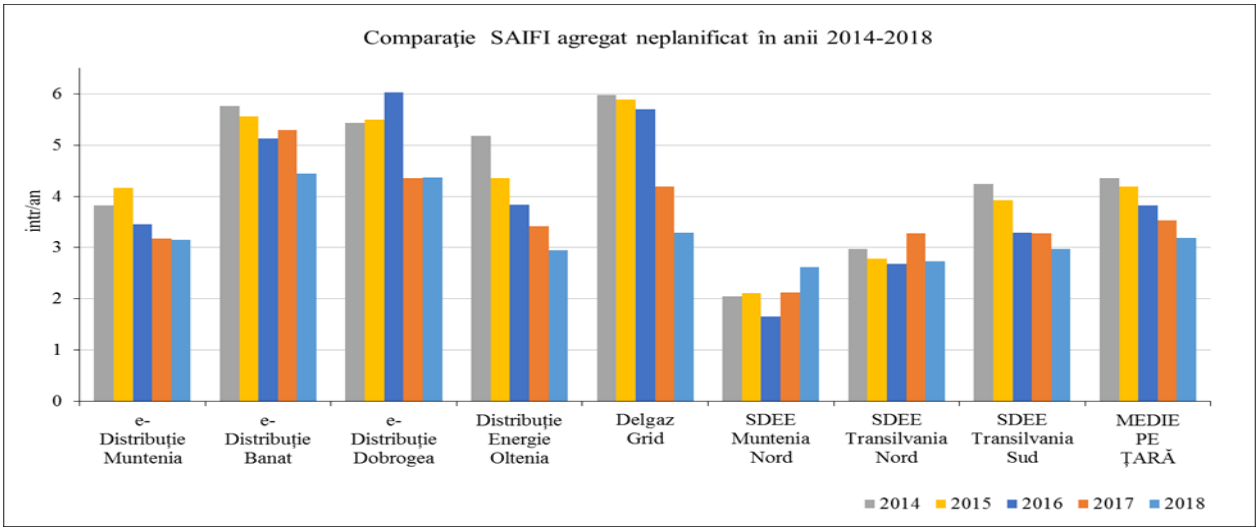


SAIFI recorded an average value of 0.61 interruptions/year (0.66 interruptions/year in 2017) and it is within the range of average values of approx. 0.1 - 1 interruptions/year in the advanced European countries. Still at country level, SAIFI unplanned interruptions (case d) recorded an average value per country of 3.2 interruptions/year (compared to 3.54 interruptions/year in 2017), above the average value above approx. 1 - 2 interruptions/year in the advanced European countries.

According to the analysis carried out, in the period between 2014 and 2018, it is noted an improvement of the SAIFI values for unplanned and planned interruptions.

Year	2014	2015	2016	2017	2018
SAIFI planned interruptions (a) [interruptions/year]	0.80	0.77	0.65	0.66	0.61
SAIFI unplanned interruptions (d) [interruptions/year]	4.35	4.19	3.83	3.54	3.2





In terms of **technical power quality**, an analysis was carried out in a representative number of stations, using power quality analyzers. Among the concessionaire distribution operators, Distributie Energie Oltenia and E-Distributie Muntenia carry out the most extensive power quality monitoring program, and SDEE Transilvania Sud presents the lowest monitoring level.

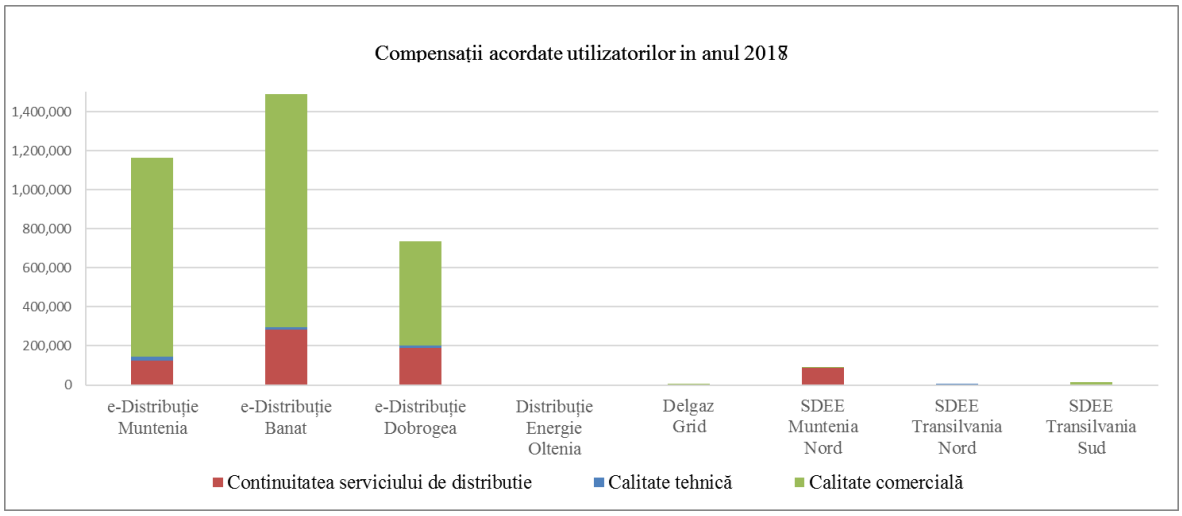
Based on the analysis of the results recorded by the power quality analyzers and in conjunction with the complaints related to the power quality recorded by the distribution operator, it is required the performance of some investigations for the detection and removal of the causes that lead to the degradation of power quality indicators, and the implementation of a management oriented towards the improvement of the performances of electric networks.

Regarding **the commercial quality of the power distribution service** it is noted that:

- **the average delivery time of the connection technical permits** in 2018, calculated at level of the entire country, was 10.41 days for the case in which the solution has been established through a solution study, respectively 15.86 days for the case in which the solution has been established through a solution file,

- **the average time of conclusion of connection contracts** in 2018 recorded an average value per country of 4.73 days,
- **the average time regarding the conclusion of distribution contracts** was 9 days for LV, respectively 7 days for MV and HV,
- **the average time of the connection process** (the time between the submission date of the request for connection with the complete justifying documentation and the energisation date of the installation to be used) was 90 days for LV, respectively 235 days for MV at level of the entire country, and the average cost of the connection process was 1,775 RON for LV, respectively 92,033 RON for MV,
- **the average response time to complaints related to connection/appeals against connection technical evaluation reports** was 14 days for LV and 18 days for MV, observing the legal response time of 30 days. For HV it was registered a single complaint with a response time of 4 days.
- a maximum number of **complaints regarding the quality of the voltage curve** was registered for S.D.E.E. Muntenia Nord, for LV, of 1,579 of the total of 4,170 at level of the entire country (2,028 complaints out of the total of 4,227 in 2017), respectively for Distribuție Energie Oltenia for MV (70 complaints out of the total of 203 at level of the entire country);
- **the average response time to complaints about the quality of the voltage curve** was 13 days for LV, respectively 12 days for MV and HV,
- **the average response time to requests/complaints or written requests** on topics other than those explicitly addressed in the standard had an average value of 15 days for LV, respectively 13 days for MV and HV, at level of the entire country,
- **the average response time to the complaints on measured data** was 11 days for LV, 8 days for MV and 4 days for HV,
- **the average reconnection time of a consumption site** from the notification of the payment by the user/supplier to the DSO was 1 days, irrespective of the voltage level,
- at country level, 79.5% of the indemnities granted to the consumers were based on the non-fulfilment of the commercial quality indicators of the service. Indemnities for the continuity of the distribution service are 19.69% of the total, considering that at LV level, indemnities are granted solely at the users' request. We mention the fact that the standard provides that starting from 01.01.2019 indemnities for non-compliance with performance indicators for the continuity of the power distribution service must be automatically paid for all voltage levels. The indemnities regarding the technical quality of the power distributed represent a reduced percentage of 1.26% of the total indemnities.

Non-fulfilled performance indicators		E-Distribuție Muntenia	E-Distribuție Banat	E-Distribuție Dobrogea	Distribuție Energie Oltenia	Delgaz Grid	SDEE Muntenia Nord	SDEE Transilvania Nord	SDEE Transilvania Sud
Power supply continuity	No.	2,282	6,651	3,704	7	5	2,895	2	7
	Ron	122,650	284,950	190,460	1,400	320	87,700	60	1,400
Technical quality of distributed power	No.	293	129	106	0	0	0	1	0
	Ron	23,445	10,855	9,690	0	0	0	130	0
Commercial quality of the power distribution service	No.	11,312	11,945	5,848	0	86	63	0	201
	Ron	1,018,940	1,193,360	535,470	0	3,620	3,320	0	11,100
TOTAL indemnities	No.	13,887	18,725	9,658	7	91	2,958	3	208
	Ron	1,165,035	1,489,165	735,620	1,400	3,940	91,020	190	12,500



The procedures and stages of the connection process and the establishment of the connection tariff are regulated by the *Regulation on connecting users to public power grids*, approved by the ANRE Order no. 59/2013, as further amended and supplemented by the *Regulation on the establishment of solutions for connecting users to public power grids*, approved by ANRE Order no. 102/2015, by the *Framework contract for connection to power distribution networks*, approved by the ANRE Order no. 11/2015, and by the *Methodology for establishing tariffs for connecting users to public power grids*, approved by ANRE Order no. 11/2014, as further amended and supplemented. The performance standard for the distribution service also monitors indicators such as **the average delivery time of connection technical permits or the average delivery time of the connection contracts**.

The total number of applications for *Connection Technical Permits (CTP)* for the public power grid is 250,135 (compared to 275,026 in 2017 and 320,392 in 2016), with the following distribution per DSO:

DSO	E-Distribuție Muntenia	E-Distribuție Banat	E-Distribuție Dobrogea	Distribuție Energie Oltenia	Delgaz Grid	SDEE Muntenia Nord	SDEE Transilvania Nord	SDEE Transilvania Sud	COUNTRY TOTAL
No. of issued CTP	40,946	17,193	11,138	16,896	23,835	39,661	48,960	51,506	250,135

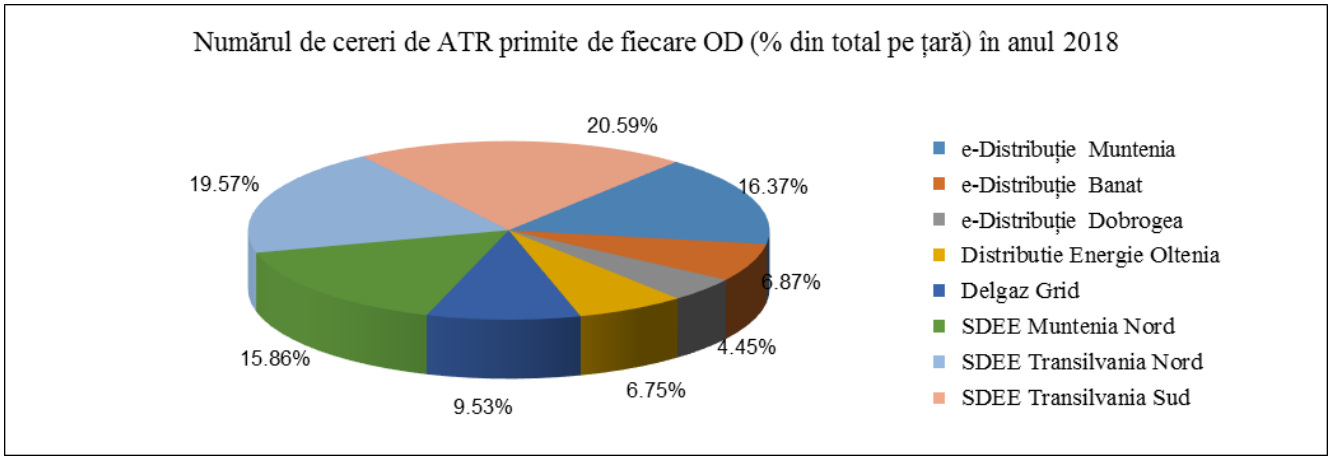
CTPs could not be issued (due to incomplete documentation or for technical reasons) for 3,029 applications, namely 1.21% of total.

The total number of applications that were not answered within the 30-day legal term (due to incomplete documentation, various time mismatches, such as the issuance of the urbanism certificate, etc.) was 4,595, namely 1.84% of the total applications for 2018 (compared to 1.56% in 2017, respectively 0.75% of total in 2016).

The total number of CTPs *issued* in 2018 was distributed per DSOs as follows:

DSO	E-Distribuție Muntenia	E-Distribuție Banat	E-Distribuție Dobrogea	Distribuție Energie Oltenia	Delgaz Grid	SDEE Muntenia Nord	SDEE Transilvania Nord	SDEE Transilvania Sud	COUNTRY TOTAL
No. of issued CTP	40,432	16,996	11,031	16,567	23,312	39,661	48,960	50,147	247,106
Percentage of total number of received	98.74	98.85	99.04	98.05	97.81	100	100	97.36	98.79

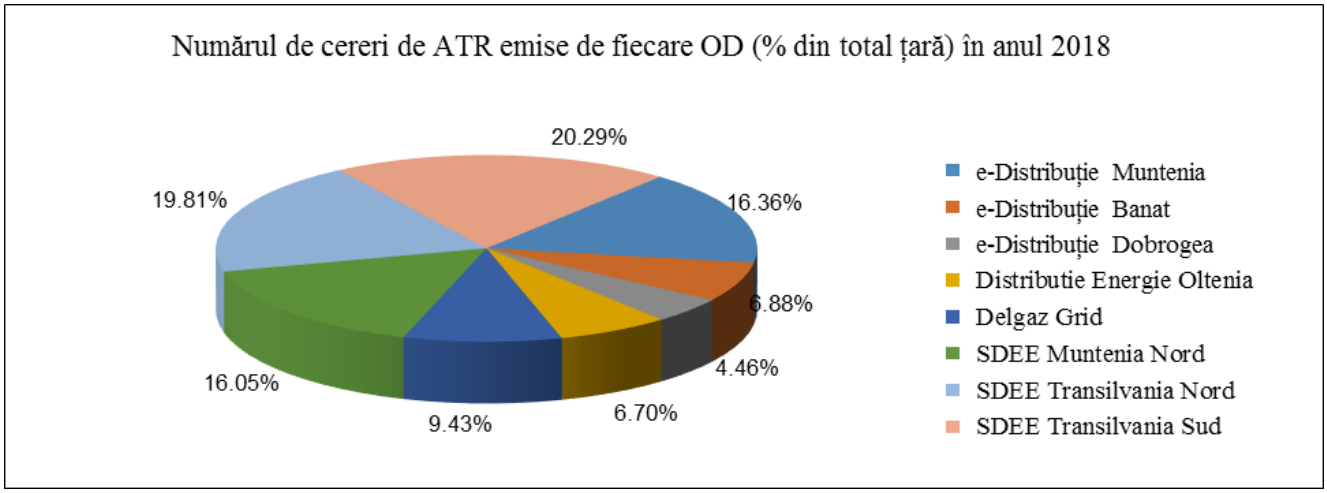
applications (%)									



The minimum number of CTPs issued was registered by ENEL Dobrogea (11,031/4.46% of the total), and the maximum number was registered by SDEE Transilvania Sud (50,147/20.29 % of the total).

The average delivery time of the connection technical permit from the submission of the complete documentation, calculated per country, for the case in which the solution was determined by solution study (SS), was 10.41 days (compared to 6.97 days in year 2017), and for the case in which the solution was determined by solution file was 15.86 days (compared to 17.41 days in year 2017), with the following distribution per DSO:

DSO		E-Distribuție Muntenia	E-Distribuție Banat	E-Distribuție Dobrogea	Distribuție Energie Oltenia	Delgaz Grid	SDEE Muntenia Nord	SDEE Transilvania Nord	SDEE Transilvania Sud	COUNTRY AVERAGE
Average CTP delivery time for the solution established by:	SS	27.70	5.50	27.00	3.52	8.56	1.00	5.00	5.00	10.41
	FS	19.90	24.54	17.44	13.45	12.46	14.83	11.23	13.00	15.86



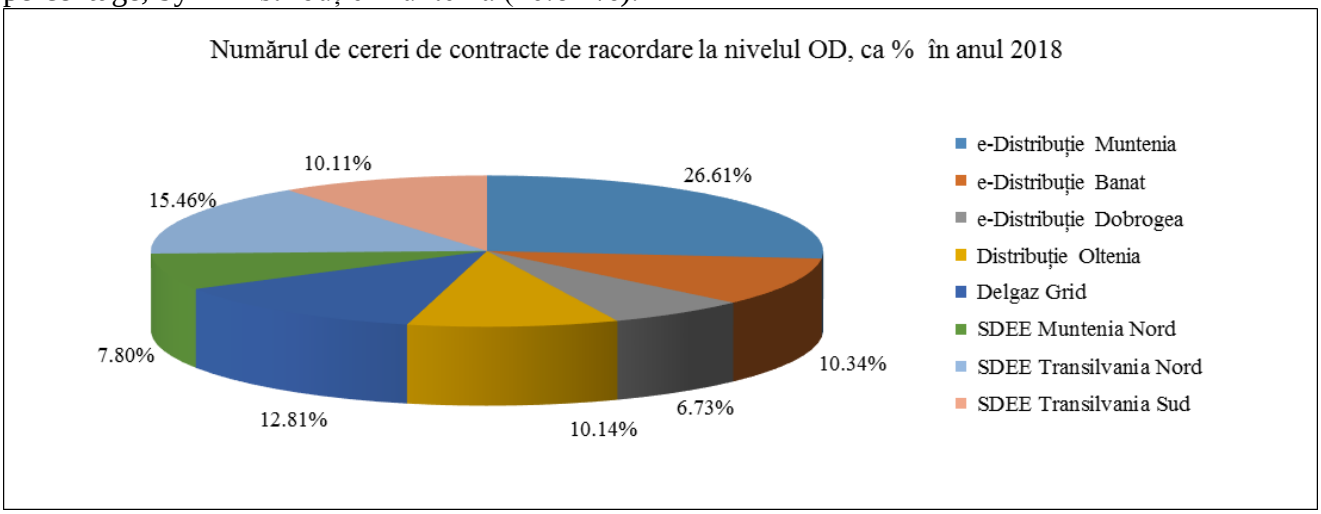
The average CTP time when the solution is based on solution study far exceeded the maximum 10-day deadline allowed by the performance *standard* for E-Distribution Muntenia and E-Distribuție Dobrogea.

Connection contracts

The total number of *applications for connection contracts* in 2018 was 135,393. The situation is presented in the following table, by total and household customers.

DSO	e-Distribuție Muntenia	e-Distribuție Banat	e-Distribuție Dobrogea	Distribuție Energie Oltenia	Delgaz Grid	SDEE Muntenia Nord	SDEE Transilvania Nord	SDEE Transilvania Sud	COUNTRY TOTAL
All consumers	36,064	14,018	9,120	13,738	17,365	10,573	20,960	13,555	135,393
Household customers	11,389	9,757	6,975	13,738	15,654	7,814	14,822	8,719	88,868

The minimum percentage of applications for connection contracts, registered for all types of consumers, is registered by E-Distribution Dobrogea (6.74% of the total number of applications), and the maximum percentage, by E-Distribuție Muntenia (26.64 %).



The total number of *connection contracts concluded* was 134,184 of the 135,393 applications for connection contracts, incomplete applications representing approx. 0.59%.

DSO	e-Distribuție Muntenia	e-Distribuție Banat	e-Distribuție Dobrogea	Distribuție Energie Oltenia	Delgaz Grid	SDEE Muntenia Nord	SDEE Transilvania Nord	SDEE Transilvania Sud	COUNTRY TOTAL
Number of connection contracts concluded	35,849	13,840	9,045	13,132	17,230	10,573	20,960	13,555	134,184

The average time for the conclusion of connection contracts in 2018 registered a countrywide average of 4.73 days, distributed per DSOs as follows:

DSO	E-Distribuție Muntenia	E-Distribuție Banat	E-Distribuție Dobrogea	Distribuție Energie Oltenia	Delgaz Grid	SDEE Muntenia Nord	SDEE Transilvania Nord	SDEE Transilvania Sud	COUNTRY AVERAGE
Average time for the conclusion of a connection contract	3	3	8	2	2	8	9	4	4.73

The average closing time of the connection contracts had a maximum value of 9 days for SDEE Transilvania Nord, close to the deadline of 10 calendar days from the registration of the application, provided in the performance *Standard.*

The number of applications for connection contracts which were not answered within the legal term was 5,003, respectively 3.69% out of the total number of applications, as follows:

DSO	E-Distribuție Muntenia	E-Distribuție Banat	E-Distribuție Dobrogea	Distribuție Energie Oltenia	Delgaz Grid	SDEE Muntenia Nord	SDEE Transilvania Nord	SDEE Transilvania Sud	COUNTRY TOTAL
Number of applications for connection contracts not answered within the legal deadline	2,464	876	1,663	-	-	-	-	-	5,003

It is found that the deadline is exceeded within the companies e-Distribuție Muntenia, Banat and Dobrogea (similarly to 2017).

The number of applications for connection contracts that remained unfinished/unsettled was 795, respectively 0.59% of the total number of applications, as follows:

DSO	E-Distribuție Muntenia	E-Distribuție Banat	E-Distribuție Dobrogea	Distribuție Energie Oltenia	Delgaz Grid	SDEE Muntenia Nord	SDEE Transilvania Nord	SDEE Transilvania Sud	COUNTRY TOTAL
Number of applications for connection contracts not completed/ not settled	191	177	282	0	135	0	10	0	795

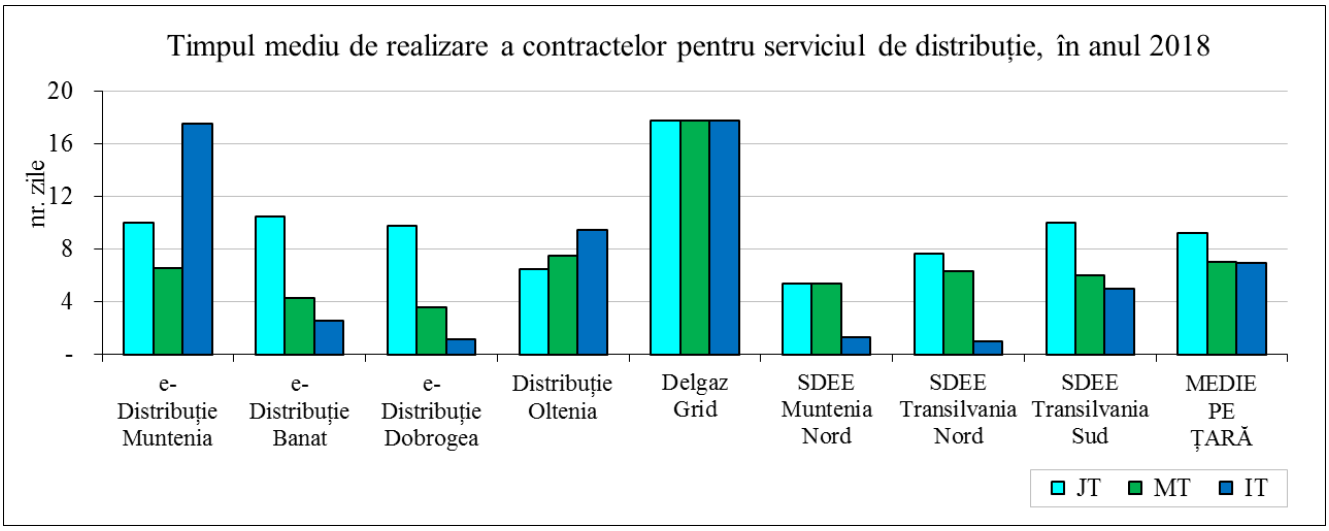
Distribution contracts

The total number of applications for the conclusion of distribution contracts in 2018 was 601,314 (compared to 269,343 in 2017), with the distribution:

DSO	E-Distribuție Muntenia	E-Distribuție Banat	E-Distribuție Dobrogea	Distribuție Energie Oltenia	Delgaz Grid	SDEE Muntenia Nord	SDEE Transilvania Nord	SDEE Transilvania Sud	COUNTRY TOTAL
Number of applications for distribution contracts	53,305	26,894	15,520	68,663	308,933	29,983	34,237	63,897	601,314

The average closing time for distribution contracts was 9 days for LV, respectively 7 days for MV and HV.

DSO		E-Distribuție Muntenia	E-Distribuție Banat	E-Distribuție Dobrogea	Distribuție Energie Oltenia	Delgaz Grid	SDEE Muntenia Nord	SDEE Transilvania Nord	SDEE Transilvania Sud	COUNTRY AVERAGE
Average closing time for distribution contracts [days]	LV	10	11	10	7	18	5	8	10	9
	MV	7	4	4	8	18	5	6	6	7
	HV	18	3	1	10	18	1	1	5	7



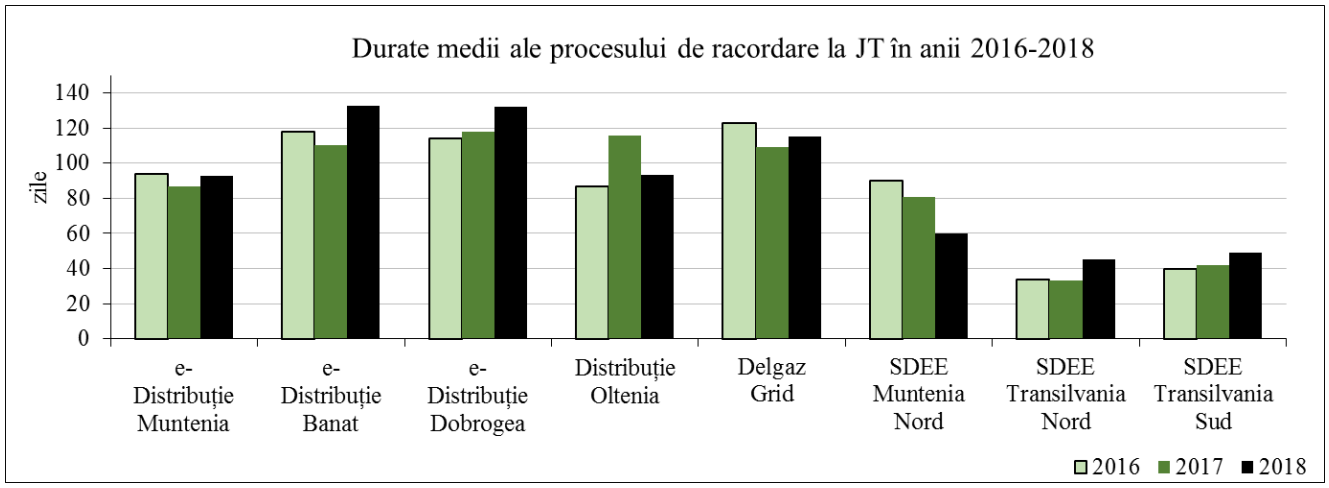
Connection process

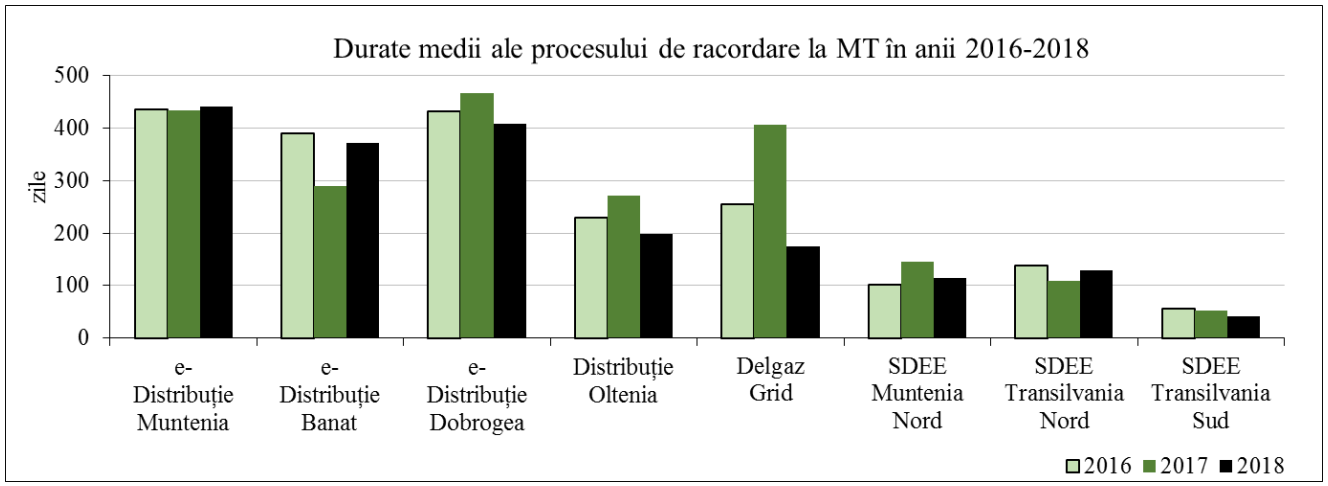
The average duration of the connection process, which is the time elapsed between the date the connection application is submitted together with the complete justifying documentation and until the date when the installation is commissioned, per DSOs:

DSO		E-Distribuție Muntenia	E-Distribuție Banat	E-Distribuție Dobrogea	Distribuție Energie Oltenia	Delgaz Grid	SDEE Muntenia Nord	SDEE Transilvania Nord	SDEE Transilvania Sud	COUNTRY AVERAGE
Average duration of connection process [days]	LV	93	133	132	93	115	60	45	49	90
	MV	441	371	407	199	175	115	129	42	235
	HV	-	-	-	-	-	-	-	-	-

The average duration of the LV connection process was 90 days at level of the entire country (compared to 83 days in 2017), situated between 45 days at SDEE Transilvania Nord and 133 days at e-Distribuție Muntenia. In case of the operators from E-Distribuție Banat and E-Distribuție Dobrogea they are recorded low performances, compared with the country average.

The average duration of the MV connection process was 235 days at level of the entire country (compared to 234 days in 2017), with a minimum value of 42 days at SDEE Transilvania Sud and a maximum value of 441 days at e-Distribuție Muntenia. It is noted a reduced performance of E-Distribuție operators, with much higher average durations of the connection process compared with the remaining concessionaire distribution operators.





The average cost of the connection process has the following distribution per DSO:

DSO		E-Distribuție Muntenia	E-Distribuție Banat	E-Distribuție Dobrogea	Distribuție Energie Oltenia	Delgaz Grid	SDEE Muntenia Nord	SDEE Transilvania Nord	SDEE Transilvania Sud	COUNTRY AVERAGE
Average cost of connection [Ron][1)]	LV	1,001	2,224	1,927	1,627	1,961	1,438	2,005	2,017	1,775
	MV	215,614	97,391	85,534	46,695	98,628	37,002	75,036	80,366	92,033
	HV	0	0	0	0	0	0	0	0	0

[1)] Average connection cost per connected user, paid to the distribution operator (CTER fee + solution study cost + connection fee);
[2)] Only one connection to HV was registered

The average cost of connection to LV was 1,775 RON at level of the entire country (compared to 1,884 RON in 2017) with a minimum value of 1,001 RON at E-Distribuție Muntenia and a maximum value of 2,224 RON at E-Distribuție Banat.

The average cost of connection to MV was 92,033 RON at level of the entire country (compared to 68,645 RON in 2017) with a minimum value of 37,002 RON at S.D.E.E. Muntenia Nord and a maximum value of 215,64 RON at E-Distribuție Muntenia.

Monitoring safeguard measures

The provisions of art. 37, par. (1), let. t) of Directive 72/2012/EC have been transposed in national legislation by Art. 9, par. (4), lit. k) of Government Emergency Ordinance 33/2007 on the organization and operation of ANRE, approved by Law 160/2012, as further amended and supplemented.

Secondary legislation applicable for *unexpected crises of the energy market and in case the physical safety or the persons' security, of the appliances or installations or the integrity of the system is threatened* provided by Art. 24 of the Law on Energy and Natural Gas no. 123/2012, as further amended and supplemented, contains the *Regulation regarding the establishment of safeguard measures in crisis situations occurring in the functioning of the National Power System*, approved by the **ANRE Order no. 142/2014**, and the *Regulation regarding the suspension of the operation of the wholesale energy market and the applicable trade rules*, approved by **ANRE Order no. 23/2016.**

There are ongoing consultations with the transmission and system operator regarding the adoption of the regulations necessary for the application of the provisions of the *Network code on emergency situations and system restoration*, related especially to the establishment of the degree of confidentiality of the list of significant network users responsible for the implementation in own installations of the measures resulting from the mandatory requirements provided for by the European regulations and the list of significant network users with high priority.

In 2018 there have not been registered any unexpected crises on the energy market that could have threatened the physical safety or the security of any people, devices or installations, or the integrity of the energetic system.

Report on the connection and dispatching regimes for E-RES. Imbalances payment

In 2018, the legislative framework corresponding to the promotion of RES has been amended as follows:

- **Under Law no. 184/2018**:

a) Starting from the year of analysis 2018, ANRE has established through an order, until the 1st of March of each year, the annual mandatory share of purchase of green certificates corresponding to the previous year, based on the final electricity consumption from the previous year, for the average impact at the final consumer to be maximum 11.7 EUR/MWh in 2018, 12.5 EUR/MWh in 2019, 13 EUR/MWh in 2020 and 2021 and 14.5 EUR/MWh starting from 2022,

b) The economic operators provided for by *Law no. 220/2008* in art. 8 para. (1) shall purchase green certificates from the anonymous centralized market, both annually, as well as quarterly, a rate of minimum 50% of the number of green certificates corresponding to the fulfilment of the mandatory annual share of purchase of green certificates, except for the bilateral contracts concluded before the entry into force of the Government Emergency Ordinance no. 24/2017 and/ or of the number of green certificates transferred from the account of producer in that of supplier for the situation in which the economic operator has the obligation to purchase green certificates and acts both as a producer, as well as a supplier.

c) It guarantees the taking over of all of the green certificates estimated to be issued in the period between 1 April 2017 – 31 December 2031, including of the green certificates the trading of which has been postponed, under the conditions in which the annual final power consumption of does not fall under the average value recorded in the period between 2017-2022,

d) By way of derogation from art. 23 of the *Law on energy and natural gas no. 123/2012, as further amended and supplemented,* and from art. *X of the Government Emergency Ordinance no. 24/2017 on the amendment and completion of Law no. 220/2008* for the establishment of the promotion system of the RES production and for the amendment of some legal acts, the electricity producers and the public authorities who hold power plants from RES who benefit from the promotion system through green certificates or who have benefitted from the promotion system and hold green certificates, with powers installed of 3 MW at most per producer, may conclude contracts negotiated directly only with the suppliers final consumers for the sale of electricity and/or green certificates.

e) Prosumers holding RES production units with the power installed at 27 kW at most per place of consumption may sell the electricity produced and delivered in the electric network to the suppliers with whom they have concluded contracts for the supply of electricity, according to the regulations of ANRE,

f) The amount of electricity for which it is established the obligation of purchase of green certificates includes the electricity produced in Romania and sold by the suppliers to some consumers/suppliers outside the Romanian territory, through bilateral transactions of electricity, in the states with which the Romanian Government concluded bilateral agreements in this respect.

The amendment of the regulatory framework following the requirements of Law 184/2018 has been made through the approval of the following:

- **The ANRE Order no. 157/2018** for the approval of the *Methodology for the establishment of the mandatory annual share for the purchase of green certificates,*
- **The ANRE Order no. 163/2018** for the amendment of the *Regulation on the issuance of green certificates,* approved under ANRE Order no. 4/2015, as further amended and supplemented;
- **The ANRE Order no. 164/2018** for the approval of the *Rules of registration in the Register of Green Certificates of the green certificates consumed for the fulfilment by the economic operators of the obligation of purchase of green certificates for the year of analysis 2018;*
- **The ANRE Order no. 179/2018** for the approval of the *Regulation on the amendment, suspension, interruption and withdrawal of the accreditation granted to the power plants of RES production, as well as on the establishment of the rights and obligations of the accredited electricityproducers*;
- **The ANRE Order no. 187/2018** for the approval of the *Invoicing procedure for green certificates.*

Also, the entry into force of Law no. 184/2018 *created the premises for the establishment of the regulatory framework for* the electricity produced in power plants from renewable sources with an electrical power installed up to 27 kW pertaining to the **prosumers**:

- **The ANRE Order no. 226/2018** for the approval of the *Rules of sale of electricity produced in power plants from renewable sources with an electrical power installed up to 27 kW, pertaining to the prosumers,*
- **The ANRE Order no. 227/2018** for the approval of the *Framework agreement for the sale-purchase of electricity produced by the prosumers who hold power plants that generate electricity from renewable sources with the installed power up to 27 kW per place of consumption and for the amendment of some regulations from the electricity sector,*

- **The ANRE Order no. 228/2018** for the approval of the *technical rule "Technical terms of connection to public electricity networks for prosumers with injection of active power in the network",*

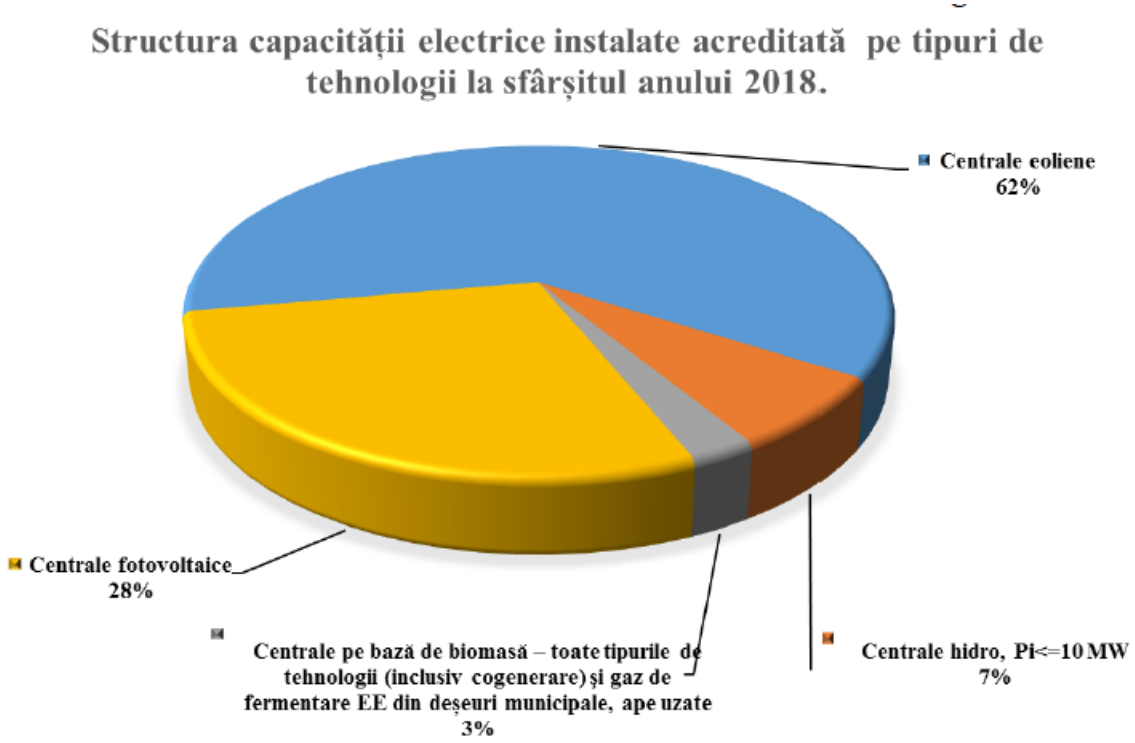
- **Under Law no. 360/2018:**

The amounts of electricity for which it is established the obligation of purchase of green certificates includes the electricity used by a producer of electricity for own final consumption, other than the technological consumption and other than the consumption necessary for the extraction, preparation and handling of raw materials used in the generation of energy, in case of a producer of energy who has as well in its composition the extraction, preparation and handling of raw materials used in the generation of electricity, irrespective of the position of the place of consumption and the method of transmission of the extracted raw material. The European Commission has not been notified yet by this measure, therefore it is not yet transposed in the secondary legislation.

Producers' access to the promotion scheme for renewable energy production based on green certificates was limited to 31 December 2016. The number of accredited renewable electricity producers at the end of 2016 was 778. At the end of 2018 the number of accredited renewable electricity producers was 766 (6 of these having plants for 2 types of production technologies), distributed by types of sources as follows: 66 use wind energy, 102 use hydraulic power in power plants with installed power of 10 MW at most, 576 use solar energy and 28 use biomass, including waste fermentation gas and sludge fermentation gas wastewater treatment plants.
The table below shows the evolution of the number of RES-E producers accredited by type of renewable source and power installed for 2013, 2014, 2015, 2016, 2017 and 2018.

SRE/tehnologie	Producători E-SRE											
	număr						Capacitate totala instalata Pi [MW]					
	2013	2014	2015	2016	2017	2018	2013	2014	2015	2016	2017	2018
Centrale eoliene	60	64	66	67	67	66	2593	2810	2932	2963	2962	2961
Centrale hidro, Pi<=10 MW	69	100	104	103	103	102	263	295	314	348	342	341
Centrale pe bază de biomasă - (inclusiv cogenerare de înaltă eficiență, gaz de fermentare a deșeurilor, gaz de fermentare a nămolurilor din instalațiile de epurare a apelor uzate)	14	14	25	28	28	28	66	81	107	124	124	124
Centrale fotovoltaice	370	403	514	577	576	576	1124	1217	1296	1360	1359	1359

At the end of 2018 the installed capacity accredited in the RES-E production units was 4785 MW. In the figure below it is presented the structure of the accredited electric capacity installed by types of technologies at the end of year 2018.



The weight of the electricity from renewable energy sources in the final consumption of electricity in 2018 was 43.6% with a degree of fulfilment of 118% compared with the level of the national targets regarding the weight of the electricity produced from renewable energy sources in the gross final consumption of energy established under Law no. 220/2008 (38% for 2020).

The average impact of green certificates in the invoice of the final consumer of electricity, for year 2018 was 11 EUR/MWh (51.1 RON/MWh), below the one provided for by Law no. 220/2008 of maximum 11.7 EUR/MWh, respectively of 54.446 RON/MWh.

The transmission and/or distribution system operators ensure transport and distribution, as well as the priority dispatch of electricity produced from renewable sources for all producers of energy from renewable sources, regardless of their capacity, on the basis of transparent and non-discriminatory criteria, with the possibility of modifying the notifications during the operating day, according to the methodology approved by ANRE, so that the limitation or interruption of the production of energy from renewable sources is applied only in exceptional cases, if this is necessary for the stability and security of the National Power System.

For electricity that benefits from the renewable energy system, contracted and sold on the energy market, **network access is guaranteed**. For electricity that is contracted and sold at a regulated price (produced in power plants with installed capacity of no more than 1 MW per plant or in the case of high efficiency biomass cogeneration of 2 MW per plant) **priority access to the network** is ensured.

Electricity produced from renewable sources is **priority dispatched**.

Production units using dispatchable renewable sources are responsible for the payment of generated imbalances.

3.1.3. Network and connection tariffs

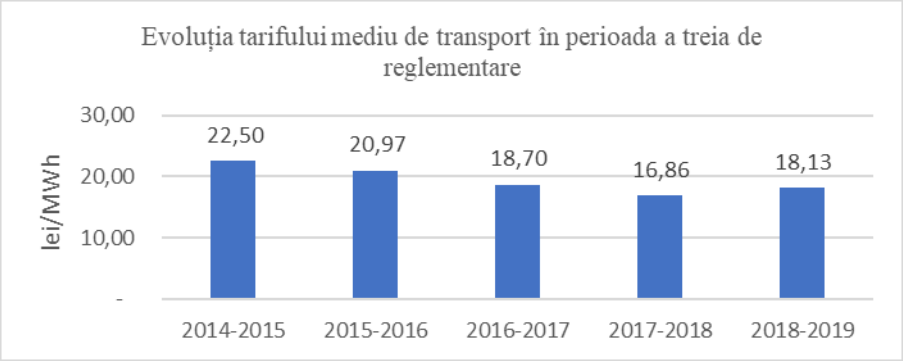
Tariffs for the electricity transmission system

The tariffs for the electricity transmission service for the third regulatory period from 1 July 2014 to 30 June 2019 are established based on the *Pricing methodology for the power transmission service* approved by ANRE Order no. 53/2013, amended and supplemented under ANRE Order no. 87/10.06.2015 and ANRE Order no. 16/24.03.2017.

In the enforcement of the provision of the said methodology, the tariffs for the transmission service are reviewed starting from the date of 1st of July of each year. Therefore, in the period from April to June 2018, ANRE analyzed the grounded proposal transmitted by TSO, established and approved under **ANRE Order no. 108/2018** the tariffs applied in the period between 1 July 2018 – 30 June 2019, having the following values:

- average transmission tariff – 18.13 RON/MWh increased by 7.53 % compared to the approved value for the previous tariff year, respectively the period between 1 July 2017 and 30 June 2018;
- transmission tariff – power supply into the grid (TG) in amount of 1.18 RON/MWh, increased by 12.38% compared to the approved valued of 1.05 RON/MWh for the previous tariff year from 1 July 2017 to 30 June 2018;
- transmission tariff – power extraction from the grid (TL) in amount of 16.89 RON/MWh, increased by 7.37% compared to the approved value of 15.73 RON/MWh for the previous tariff year from 1 July 2017 – 30 June 2018.

The evolution of the average transport tariff during the third regulatory period (1 July 2014 – 30 June 2019), expressed in nominal terms of each year, is shown in the following figure:

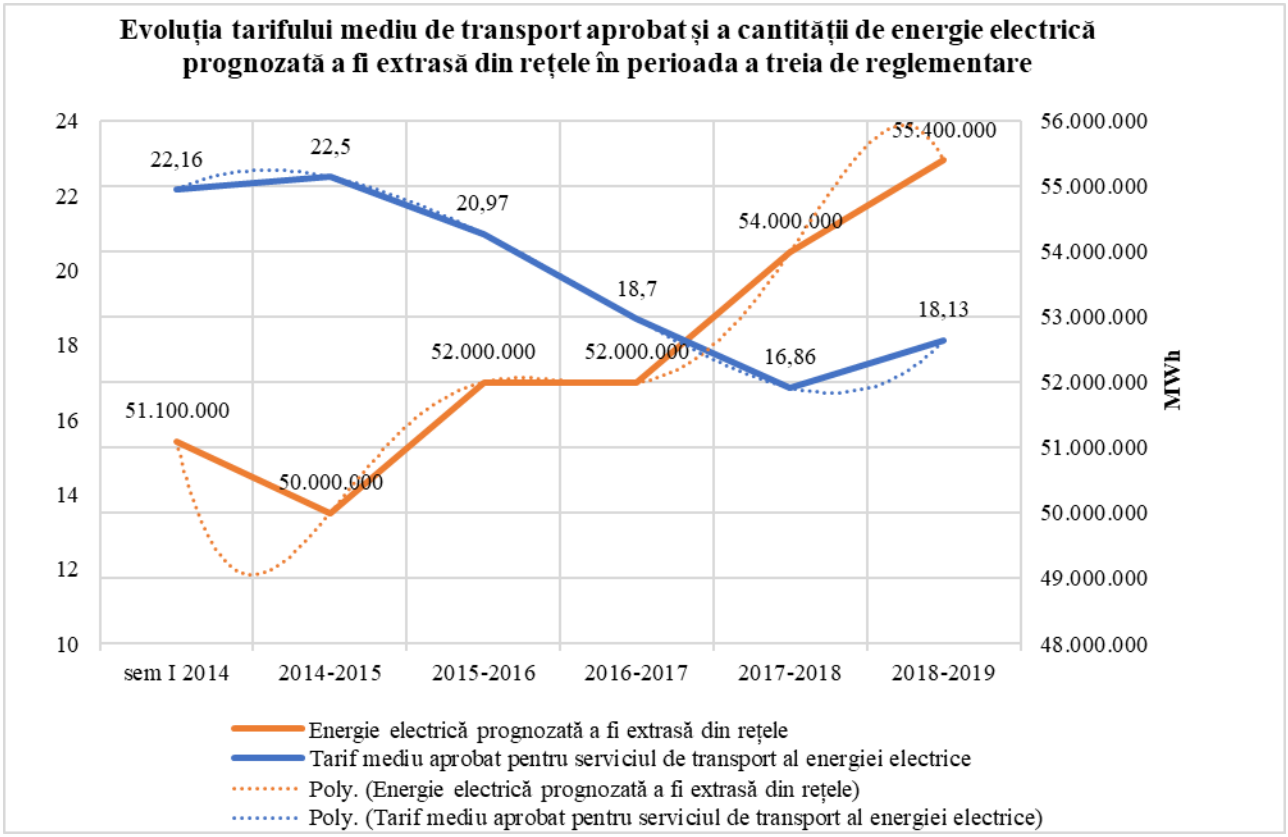


The factors that contributed to the evolution of the transmission tariff value approved, applied starting from 1 July 2018, compared to the tariff value in force in the tariff year between 1 July 2017 and 30 June 2018 are primarily the inflation indexes for 2017 and 2018 used in the calculation of the tariff, higher than the previous forecasts of the National Commission for Prognosis used in the planning of the tariffs, the increase of the purchase price and amount of energy for the coverage of the CPT in RET compared to the forecast values, the increase of the amount of energy chargeable at the extraction from the grids and the low degree of fulfilment, of 29% of the investment plan corresponding to the tariff year from 1 July 2016 to 30 June 2017.

The variation of the transmission tariff recorded in the current regulatory period is determined mainly by the evolution of the regulated income, of the forecast electricity consumption in Romania (the evolution of

the electricity extracted from the grids) and of the differences resulted between the ex-post values obtained by TSO (costs and income) compared to the ex-ante forecast values.

In the following figure it is presented by comparison the evolution of the average transmission tariff approved and the evolution of the amount of electricity forecasted for extraction from the grids in the third regulatory period, which highlights the inversely proportional relation between the two elements.



Power distribution tariffs

The *Methodology for setting tariffs for the electricity distribution service* supplied by the concessionaire distribution operators contains short and long-term incentives regarding the increase of energy efficiency, security of the supply, the harmonious integration in the market, as well as the support of the research activity corresponding to the electricity distribution service, in accordance with the provisions of the *Law no. 123/2012 on electricity and natural gas, as further amended and supplemented (Law).*

This methodology type was applied starting from the first regulatory period and it was improved at the beginning of each regulatory period.

Being given the beginning of the fourth regulatory period on the date of 01 January 2019, ANRE subjected to the public debate the proposal for the revision of the principles on which relies the tariff calculation method, in two stages: the first stage in the period from 03.07.2017 to 14.08.2017 and the second stage in the period from 23.04.2018 to 23.05.2018, and the project of the *Methodology for setting tariffs for the electricity distribution service* has been published on the ANRE website and subjected to the public debate in the period from 20.07.2018 to 20.08.2018. Within the order project it has been taken into consideration the compliance of ANRE with the principles provided for by the *Law*, in order to ensure at

the same time both the justified costs of the distribution operators, and the protection of the customers who must pay for a public service supplied from a monopoly position.

The main methodological amendments stipulated by the Methodology approved under ANRE Order no. 169/2018 (*Methodology*) compared to the content of the *Methodology for setting tariffs for the electricity distribution service, approved under ANRE Order no. 72/2013, as further amended and supplemented* are:

- ANRE imposes the annual achievement of a dimensioned investment volume at least at the value of the cumulative annual depreciation corresponding to the fixed assets included in the regulated asset base (RAB);
- ANRE applies an incentive equal to a percentage point above the regulated rate of return, approved under the *Methodology* terms, to stimulate new investments in power capacities corresponding to the distribution grids, in the fourth regulatory period;
- the application of an annual correction with the value of the investments made and recognized by ANRE, for the integral fulfilment of the investment plan;
- the transmission at the beginning of a year t of the plan corresponding to the ongoing year, in order to simplify the process of annual approval of the investment plan;
- new rules with regard to the inclusion of fixed assets in the RAB, specifying that in the RAB they are not included the fixed assets obtained under a rental/bail contract from third parties or resulting from investments works concerning the fixed assets obtained in such manner, as well as the fixed assets ceded to third parties under a rental/bail contract, except for the pillars of overhead electric lines;
- the reduction of the initial RAB with the value to be depreciated of the fixed assets removed from the administration of the distribution operators in the period comprised between 2005 and 2018, measure continuing to be applied for fixed assets the property/use of which follows to be ceded;
- for the establishment of the forecast regulated depreciation, in a conventional manner, it has been provided for the fixed assets to be commissioned in the month of December, in order to avoid the inclusion of any unjustified costs in the tariffs;
- the orientation of concessionaire distribution operators towards the enhancement and diversification of the measures in order to reduce the losses in RED (reduction of costs corresponding to CPT). It is intended the continuation of the stimulation mechanism for the increase of the energy efficiency of the electric grids of the operators, the tendencies of the annual targets of the regulated CPT descending compared to the previous level approved/reached. It is intended as well, predominantly, the reduction of the CPT in low voltage networks. In the establishment of the CPT price forecast and accepted for inclusion in distribution tariffs, ANRE applies a unitary method of establishment, for all operators, meant to reflect the possibility to optimize operators' market shares for the acquisition of the energy necessary to cover the CPT;
- the orientation of concessionaire distribution operators towards the increase of the level of fulfilment of the maintenance activity in distribution grids. In this respect, according to the *Methodology*, in the situation in which the distribution operator presents any explanations and justifications relevant for failure to obtain the costs forecast for this category of works during an year t of the period, the forecast value for year t+1 is supplemented with the respective difference, in order to recover the delays and to perform all of the works foreseen. The distribution operator has the obligation to obtain in the following year the costs deferred;
- the increase of the level of stringency when it is granted the gain of efficiency corresponding to the controllable operation and maintenance costs, other than those corresponding to the works of maintenance, to the personnel and to labour security. ANRE determines the amount corresponding to the gain of efficiency above the value approved for each year of the regulatory period p and it allots

60% of this to the costumers (gain distribution mechanism). The gain of efficiency taken into consideration is maximum 5%;

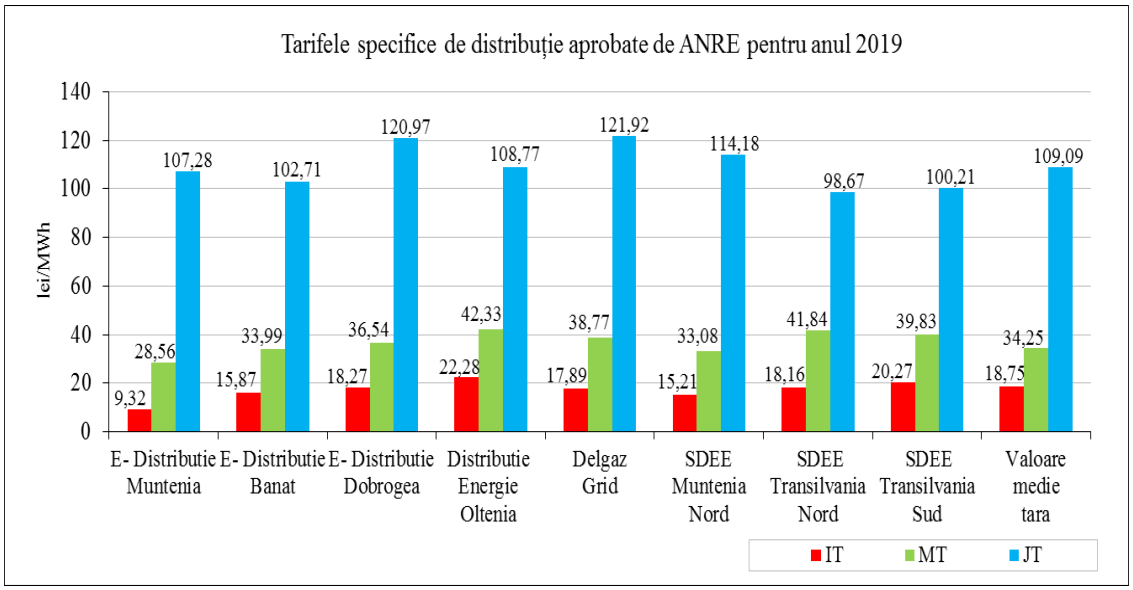
- ANRE has taken into consideration the level of transparency and predictability with regard to the costs recognized by ANRE in the process of establishment of the tariffs for the distribution service, through the definition of the categories of costs that are not taken into consideration in the establishment of the income regulated and the definition of the categories of costs considered unjustified;
- ANRE added some terms regarding the grounding and justification of the costs corresponding to the contracts for the supply of services concluded between the concessionaire distribution operators and the affiliated persons, being given the provisions contained in the General conditions associated to the licenses for the supply of the distribution service, with regard to the conclusion of the contracts through competitive, transparent and non-discriminatory procedures;
- the motivation of the distribution operators for the optimal dimensioning of the number of employees, for the purpose of fulfilment of their obligations provided for by *Law*, through the exclusion of the costs corresponding to salaries and labour security from the category of controllable costs for which it is applied the factor of efficiency, in conjunction with the integral annual adjustment of the costs not obtained corresponding to salaries and labor security.

The specific tariffs for the electricity distribution service applied by the distribution system operators in 2019, which is the first year of the fourth regulatory period (2019-2023), were approved by **ANRE Orders 194 to 201 of 2018**.

Thus, the country-specific average tariffs, by voltage levels, calculated as a weighted average of the specific tariffs approved for concessionaire distribution operators for 2019 with the distributed quantities of electricity are the following:

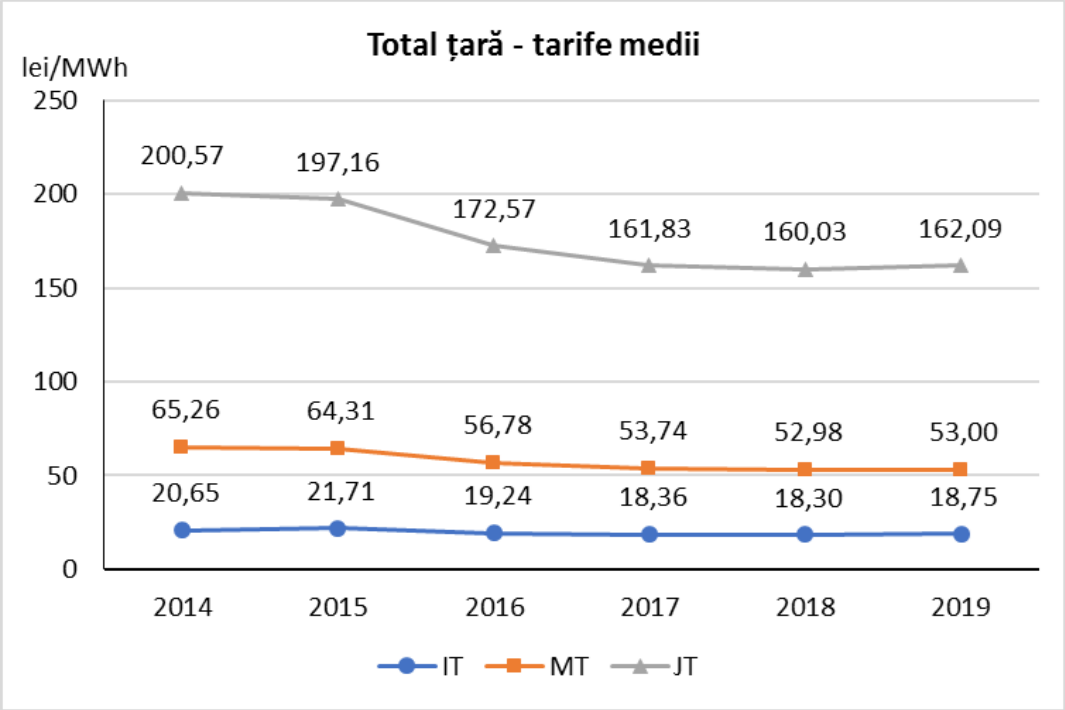
- Average specific HV tariff – Ron 18.75/MWh,
- Average specific MV tariff – Ron 34.25/MWh,
- Average specific LV tariff – Ron 109.09/MWh.

The comparison of the specific distribution tariffs approved by ANRE for 2019, for the eight concessionaire distribution operators, is present in the figure below, in which the values are expressed in the nominal terms of 2019.



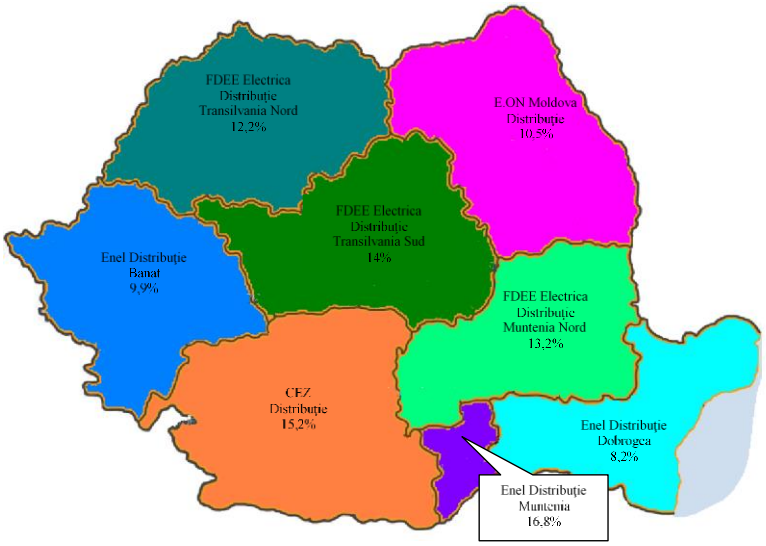
Compared to the average specific tariffs calculated for the previous year, the average tariffs varied, registering a variation of 2.46% at high voltage, - 1.25% at medium voltage and 1.91% at low voltage.

The following figure shows the evolution of the average power distribution tariffs applied during 2014-2019 to final customers, according to the voltage levels at which their consumption points are connected to the distribution grids, expressed in nominal terms:



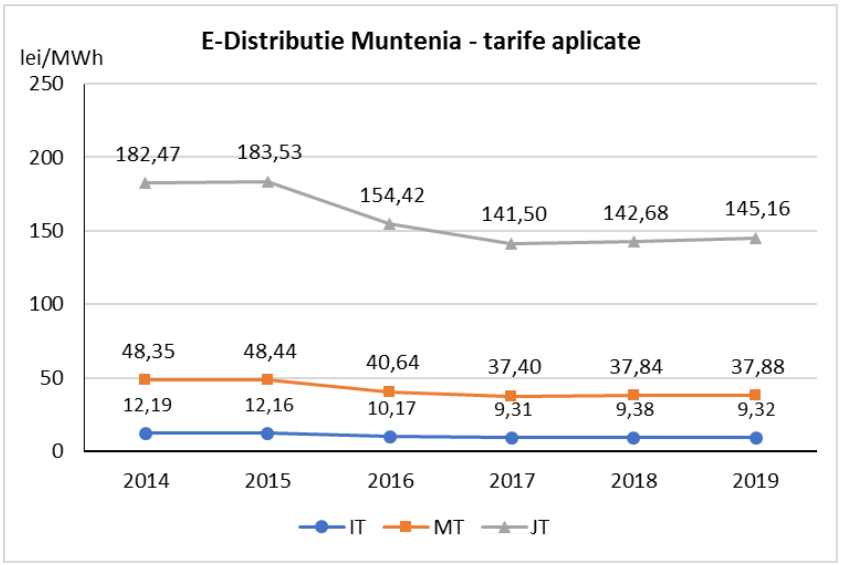
The downward trend in power distribution tariffs during the third regulatory period (starting with 2014) is explained both by the increase in the amount of power distributed and by the reduction in regulated revenues due to the stricter conditions imposed by the *Methodology* for the recognition of costs (reinforcement of checks, request of data and additional supporting documents etc).

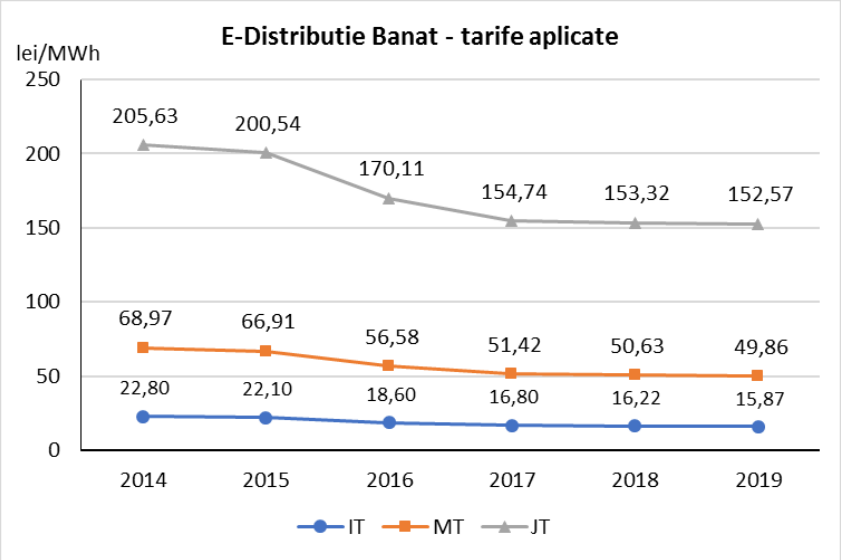
In the following figure it is presented the distribution within the country, between the eight concessionaire distribution operators in value of approx. **44,8 TWh, in 2018**.

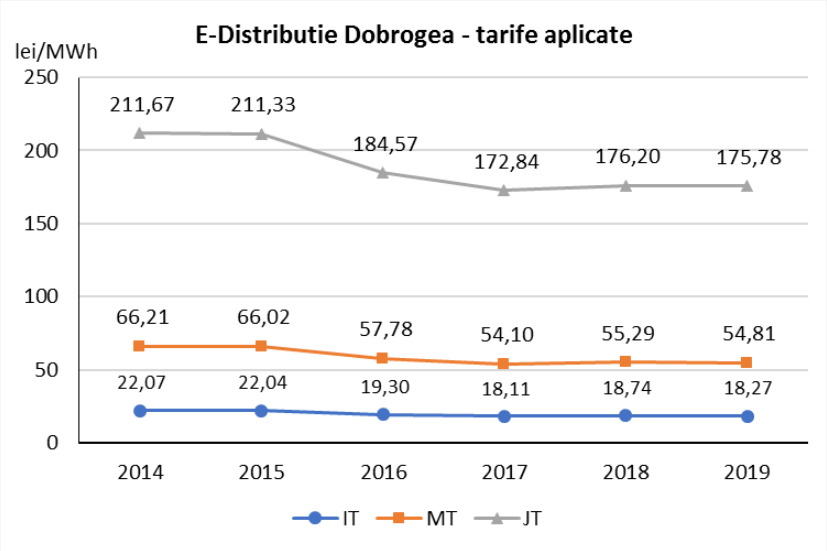


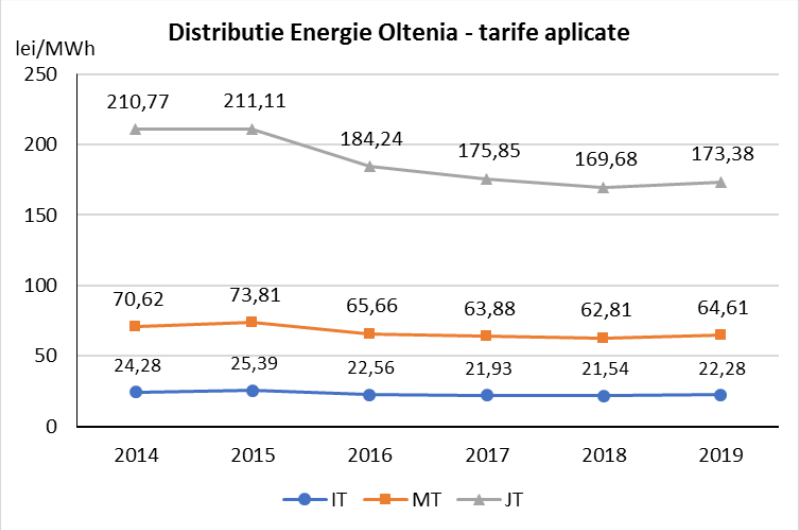
In applying the provisions of art. 48 par. (2) lit. (c) of *Electricity Law no. 123/2012, as further amended and supplemented*, according to which concessionaire distribution operators, as well as the TSO, must publish the costs related to power grid operation, maintenance and development on their own websites, ANRE approved layout templates for this publication obligation by Decision no. 618/2015.

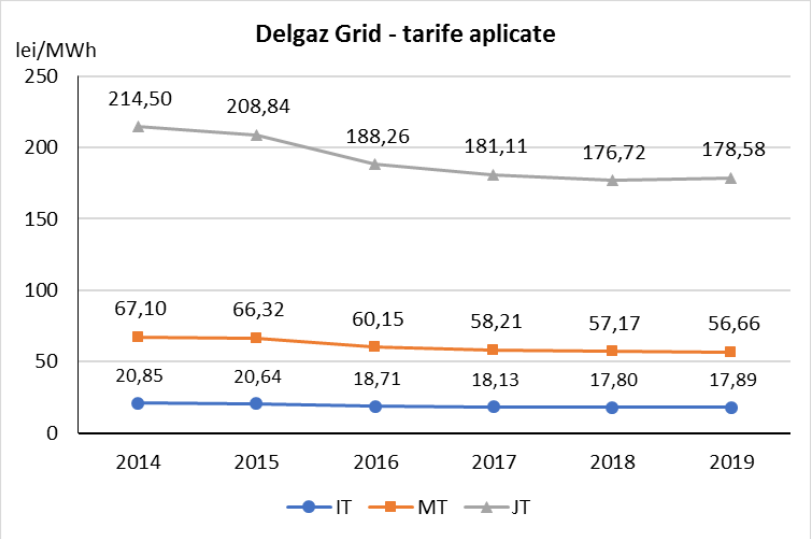
The following figures show **the evolution of the distribution tariffs applied by each DSO during 2014-2019**, in which the values are expressed in nominal terms and result by summing up the specific tariffs approved by ANRE, which the final customers pay according to the level of voltage to which they are connected.




E-Distributie Banat - tarife aplicate
lei/MWh
250
200
150
100
50
0
205,63
200,54
170,11
154,74
153,32
152,57
68,97
66,91
56,58
51,42
50,63
49,86
22,80
22,10
18,60
16,80
16,22
15,87
2014
2015
2016
2017
2018
2019
IT
MT
JT


E-Distributie Dobrogea - tarife aplicate
lei/MWh
250
200
150
100
50
0
211,67
211,33
184,57
172,84
176,20
175,78
66,21
66,02
57,78
54,10
55,29
54,81
22,07
22,04
19,30
18,11
18,74
18,27
2014
2015
2016
2017
2018
2019
IT
MT
JT


Distributie Energie Oltenia - tarife aplicate
lei/MWh
250
200
150
100
50
0
210,77
211,11
184,24
175,85
169,68
173,38
70,62
73,81
65,66
63,88
62,81
64,61
24,28
25,39
22,56
21,93
21,54
22,28
2014
2015
2016
2017
2018
2019
IT
MT
JT


Delgaz Grid - tarife aplicate
lei/MWh
250
200
150
100
50
0
214,50
208,84
188,26
181,11
176,72
178,58
67,10
66,32
60,15
58,21
57,17
56,66
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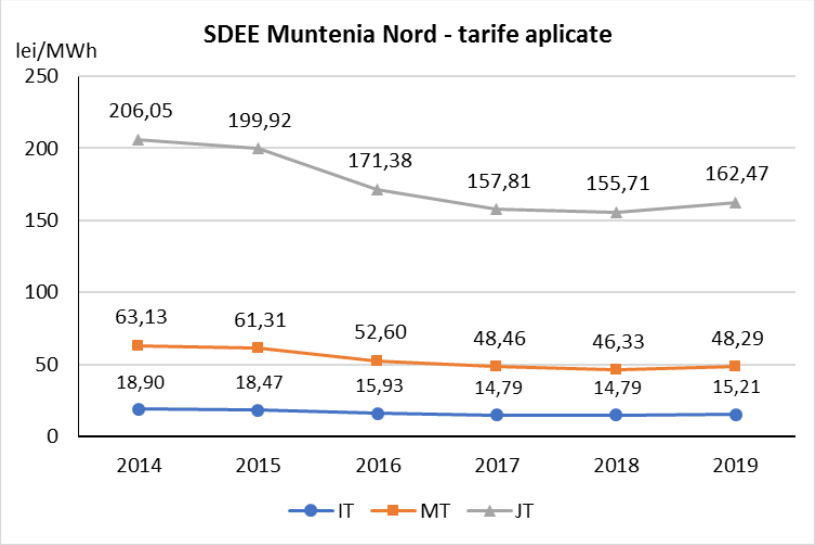
20,64
18,71
18,13
17,80
17,89
2014
2015
2016
2017
2018
2019
IT
MT
JT


SDEE Muntenia Nord - tarife aplicate
lei/MWh
250
200
150
100
50
0
206,05
199,92
171,38
157,81
155,71
162,47
63,13
61,31
52,60
48,46
46,33
48,29
18,90
18,47
15,93
14,79
14,79
15,21
2014
2015
2016
2017
2018
2019
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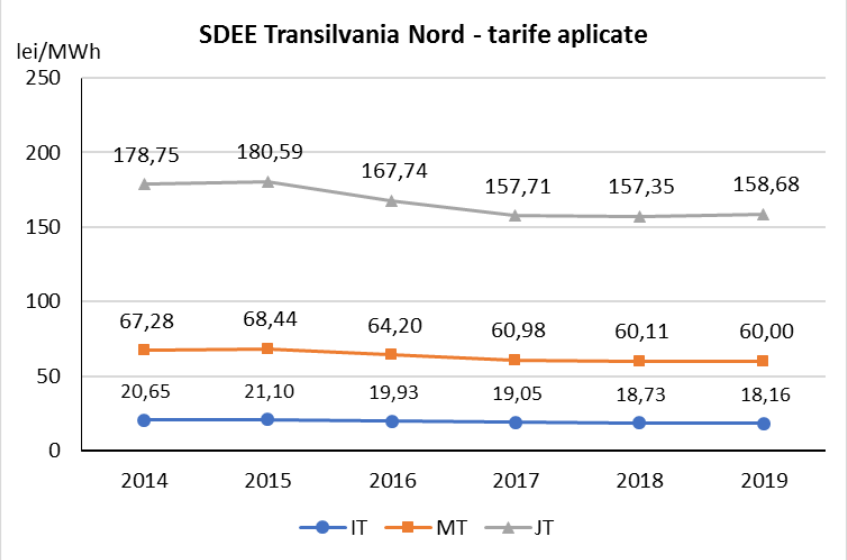
SDEE Transilvania Nord - tarife aplicate
lei/MWh
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200
150
100
50
0
178,75
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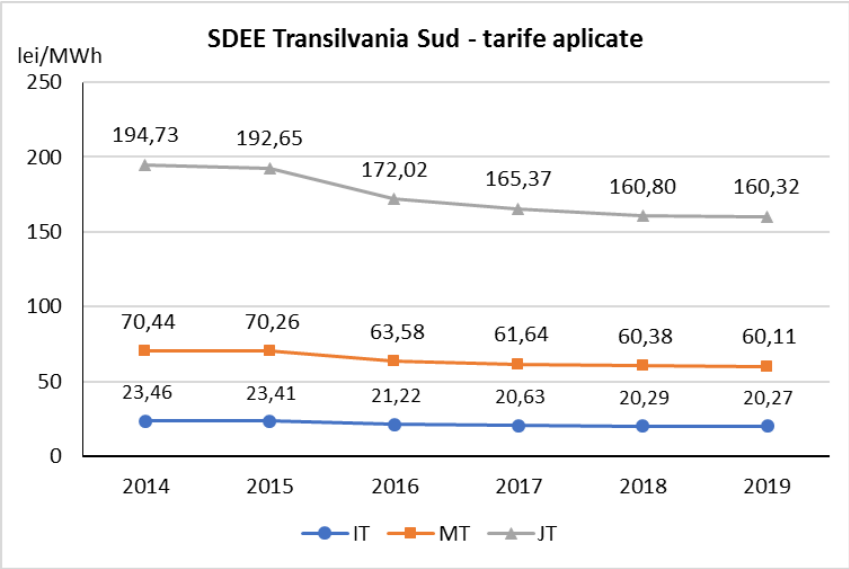


Tariffs for the distribution service provided by distribution operators other than concessionaire operators

Tariffs for the distribution service provided by distribution operators other than concessionaire operators are approved by ANRE at the request of distribution operators who own, operate, maintain and develop distribution grids within industrial parks and platforms or patrimonial areas and which connect users - recipients of the distribution service.

Tariffs are determined based on the *Methodology for setting the tariff for the power distribution service provided by operators other than statutory undertakers, approved by the ANRE Order no. 102/2016.* During 2018, 4 decisions approving the tariff for the power distribution service provided by distribution operators other than concessionaire operators were approved.

Tariffs for connection to public networks

The *Methodology for setting the connection tariffs to the public interest electricity network* regulating the method of assessing the tariffs that the costumers pay to the network operators for their connection to public grids has been approved under ANRE Order no. 11/2014. Annex 1 to the Methodology, which comprises the schemes and conditions of standard completion of the connection installation, used to establish the specific indexes for the calculation of the component T_R of the connection tariff, has been amended through ANRE Order no. 113/2018.

At the present time, they are in force the specific tariffs and indexes used in the establishment of the T_R, T_U and T_I components of the tariffs for the connection of the customers to the public grids, approved by ANRE Order no. 141/2014, with the amendments approved by ANRE Order no. 113/2018.

ANRE Order no. 113/2018 approves new specific indexes that are used in the calculation of the T_R component of the connection tariff for branching and transformer substations. The values of these new indexes resulted by subtracting the consideration of the settlement meter and the cost for its mounting, which have been taken into consideration at the initial establishment of the respective indexes. At the present time, the cost of the measuring set is incurred through the tariffs of the grids. The measures also took into account the harmonization of the regulatory framework on natural gas and energy, and the application of a unitary treatment with regard to new and existing customers.

The regulated tariffs for the issuance/update of Connection Technical Permits, Connection Certificates and Site Approvals are approved by **ANRE Order no. 114/2014,** as further amended and supplemented, being determined according to the provisions of the *Methodology for setting these tariffs,* approved by **ANRE Order no. 61/2014,** as further amended and supplemented.

National implementation of European codes for access to public grids

Regarding **(EU) Regulation No. 631/2016 establishing a network code on requirements for grid connection of generators,** in 2018 the following were approved:

- **ANRE Order no. 191/2018** for the approval of the *Procedure for obtaining waivers for generators, for the failure to comply with one or several requirements provided for by the technical norm* – (EU) Regulation no. 631/2016, art. 60-65.
- **ANRE Order no. 208/2018** for the approval of the *Regulation regarding the technical requirements for the connection to public grids of generator modules, plants composed of generator modules, offshore plants with generator modules* – (EU) Regulation no. 631/2016, art. 1-4, 6, 7, 9, 12-28,
- **ANRE Order no. 214/2018** for the approval of *Regulation regarding the technical requirements for the public interest electricity network connection of synchronous generator sets* - revision of ANRE Order no. 72/2017- (EU) Regulation 631/2016, art 7.

Cross-border matters

Assignment of transfer capacities on the NPS interconnection lines with the neighboring power systems is carried out for the performance of electricity import/export and transit transactions. On **Romania**'s borders with **Hungary, Bulgaria and Serbia**, the allocation of capacities is achieved through market mechanisms, bilaterally coordinated in both directions, for 100% of the allocation capacity, through long and short-term auctions.

On Romania's Hungarian border, auctions for long-term allocation are conducted explicitly and are organized by MAVIR (Hungarian TSO) based on the Long-Term Harmonized Allocation Rules (HAR EU). The intra-day auctions are carried out explicitly and are organized by CNTEE Transelectrica SA, while day-to-day auctions are carried out implicitly, via the 4M MC mechanism; if the four day-ahead markets are disconnected, the allocation is made through explicit day-to-day auctions organized by MAVIR (shadow auction)

On Romania's Bulgarian border, they are organized only explicit auctions for the allocation of long-term capacities (organized by CNTEE Transelectrica S.A.), respectively day-to-day explicit auctions (organized by ESO-EAD – the Bulgarian TSO). As a result of the changes in Bulgarian market rules, no intra-day auctions are conducted.

On Romania's Serbian border, capacity allocation is explicit, the long-term and intra-day auctions are organized by CNTEE Transelectrica SA and day-to-day auctions - by EMS (Serbian TSO).

On Romania's Ukrainian border, allocation of interconnection capacities is carried out through explicit long-term auctions, the use of these capacities being conditioned by the written agreement with Ukrenergo (Ukraine's TSO).

On the Moldavian border, the export of electricity can be done as consumption island, with the consent of the distributor in the area.

The UIOSI principle ("use it or sell it") is applied on the **Hungarian, Bulgarian** and **Serbian** borders, based on which the interconnection capacity corresponding to the non-nominated physical transmission rights for next day allocation are returned to the transmission system operator for a fee.

The establishment of the ATC value available for day-to-day and intra-day auctions (organized for six auctions) uses the "netting" principle. The auctions organized by CNTEE Transelectrica S.A. take place using the DAMAS platform, the trading currency being the euro. Starting from 1 January 2018 on the Bulgarian and Serbian borders and from 1 February 2018 on the Hungarian border, the notification of the physical transmission rights is made in accordance with the "m:n" type of nomination principle for all time horizons.

The capacity solicited at the annual auction reached very high levels on the Hungarian borders (2157 MW for exports, respectively 1712 MW for imports), a lot above the values of the ATC subject to the annual auction (350 MW for both directions). Even though the requests for capacity exceeded a lot the ATC values also on the Serbian and Bulgarian borders, the interest of the participants has not been as big (solicited capacity for Serbian export of 668 MW compared to the ATC value of 228 MW, solicited capacity for Bulgarian imports of 456 MW compared to the ATC value of 100 MW).

The data published by CNTEE Transelectrica S.A. shows that the prices at the annual auction on the Hungarian and Serbian borders have been higher for exports (Eur 2.03/MWh respectively Eur 1.75/MWh) compared to those for imports that registered values below Eur 0.3/MW, while on the Bulgarian border the higher price was the one for imports from Bulgaria (Eur 2.27/MWh compared to Eur 0.62/MWh for exports).

In intra-day auctions organized on the Hungarian and Serbian borders, hourly prices were null or near zero during most of the time slots of the year.

On the Hungarian border, the interest of the participants has been focused first of all on exports, materialized in a price of Eur 2.03/MWh resulted following the organization of the annual auction. Subsequently, at the monthly auctions, price values increased from month to month, starting from Eur 2.52/MWh at the auction from the month of January and reaching to maximum values of Eur 6.27-6.51/MWh in the months of August and September, to decrease again towards the end of the year to a price of Eur 2.87/MWh in the month of December. At the auctions of implicit day-to-day allocation, they have also been registered maximum values of price on certain time intervals of more than Eur 50/MWh in February, April and September and a maximum price of the year of Eur 63.55/MWh on a time Interval from the month of November 2018. The prices at the intra-day auctions have been close to 0. Insignificant values have also been registered by the prices at the auctions for imports in all time intervals.

On the Bulgarian border, besides the price at the annual auction for imports of Eur 2.27/MWh, they must be noted the prices resulted following the auctions for monthly allocations for imports, which, starting from the month of July (Eur 8.33/MWh), registered higher values than in the first part of the year, at the auction for the allocation of the month of November being obtained prices between Eur 14.50-15.25/MWh, from several auction sessions organized. At the day-to-day auctions from the months of March, September and October 2018 they have been registered maximum hourly prices of significant values both for imports and exports (for instance, in March – maximum hourly prices of Eur 16.8/MWh for exports and Eur 18/MWh for imports, in September – of Eur 18.93/MWh for exports and Eur 44.12/MWh for imports, in October – of Eur 15.81/MWh for exports and Eur 44.12/MWh for imports), and in the month of November on a time Interval for imports it has been obtained the price of Eur 55.3/MWh.

The export represented as well in the case of the Serbian border the direction for which the participants tendered the most, leading to significant prices both at the annual auction (Eur 1.75/MWh), as well as at

the auctions for the monthly allocation of capacity, where the prices obtained varied between Eur 0.01 and 6.55/MWh. It must be noted the fact that for the majority of monthly allocations for both directions, on the Serbian border they have been organized auction on several subperiods. The prices obtained at intra-day auctions had insignificant values.

At level of 2018, the highest annual average value of the degree of use of the total capacity allocated, indicator calculated as an arithmetic mean of the monthly values, has been registered, similarly to the previous year, for exports on the Serbian border (approx. 64%), followed by the exports to Hungary (approx. 47%) and the imports from Bulgaria (approx. 41%). In case of exports to Serbia, they are noted high values of the indicator calculated in all of the months of the year, reaching in July-August to rates above 95%.

For imports from Bulgaria, the period with the highest degree of use of the capacity allocated was September-December 2018, with values above 60%, and for exports to Hungary the maximum rate of use has been registered in the month of July 2018 (approx. 60%).

Most of the revenues obtained by CNTEE Transelectrica S.A. from the allocation of interconnection capacities (almost Ron 82 million) came, as in the previous year, from long-term auctions (approx. 88%), the other part of the revenues being obtained from day-to-day auctions. In the first semester of 2018, the highest revenues from the allocation of long-term capacities have been registered for exports to Hungary and Serbia, respectively for the imports and exports from Bulgaria. Starting from July 2018, the highest gains have been obtained from auctions for imports from Bulgaria and exports to Hungary and Serbia (July, October, November and December).

Revenues from intra-day auctions had insignificant values, and revenues from day-to-day auctions have been reduced with the amounts payable to participants based on the UIOSI principle, used on the Hungarian, Bulgarian and Serbian borders.

The report of the revenues of the transmission and system operator from congestion management during 1 July 2018-30 June 2019 is carried out in accordance with the provisions of point 6.5 of Annex 1 – Guidelines on the management and allocation of the available transmission capacity of interconnections between national systems, *(CE) Regulation 714/2009 of the European Parliament and Council of 13 July 2009 on the conditions of network access for cross-border electricity exchanges and for repealing (EC) Regulation 1228/2003*.

The report includes **the amount of revenue collected by the transmission system operator** during the 12-month period prior to 30 June 2019 and **the use of the revenue** together with the results of the verification certifying that this use is compliant with the requirements of the Regulation and that all revenue from congestion is aimed at one or several of the three objectives set out in Art. 16 par. (6) thereof.

In accordance with Art. 16 (6) of the *Regulation*, the revenue from the allocation of interconnection capacities shall be used by the transmission system operator for the following purposes:

a) ensuring the actual availability of the allocated capacity and/or

b) maintaining or increasing interconnection capacities by investments in the grid, in particular in new interconnections; or

c) as income to be factored into the calculation of transmission tariffs, up to a maximum amount decided by ANRE, if it cannot be used efficiently for the above-mentioned purposes.

The Romanian transmission system operator, CNTEE Transelectrica S.A., is responsible for congestion revenue management resulting from the allocation of interconnection capacity between Romania and Serbia, Hungary, Bulgaria, Ukraine and Moldova, obtained through annual, monthly and daily auctions.

Every year, CNTEE Transelectrica S.A. sends ANRE the monitoring of the revenues obtained from auctions organized for the allocation of interconnection capacities on borders. These earnings, made between 1 July 2018 and 30 June 2019, are shown in the table below.

Interconexiunea	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Cumulat an
Romania - Serbia*	944.968,61	2.285.249,82	1.388.795,77	1.722.466,69	1.893.994,44	1.714.247,19	2.013.609,33	1.533.269,05	1.405.112,62	1.364.277,74	1.256.547,75	1.429.997,76	**18.952.536,77**
Serbia - Romania*	27.412,85	13.442,74	44.724,45	48.153,38	19.716,05	48.401,74	82.962,70	56.347,60	60.132,95	60.203,10	94.288,06	56.186,55	**611.972,17**
Romania - Bulgaria*	249.138,32	260.058,50	285.595,16	310.605,66	213.775,11	198.357,53	219.576,05	201.174,84	325.093,73	293.083,70	607.421,48	498.175,76	**3.662.055,85**
Bulgaria - Romania*	2.902.747,13	2.652.638,30	2.692.814,13	5.124.691,31	6.299.714,71	4.779.115,64	2.145.755,03	2.472.086,49	2.073.714,29	1.757.115,79	1.559.882,67	1.738.083,13	**36.198.358,62**
Romania - Ungaria*	2.154.894,80	2.592.399,93	2.737.750,51	2.380.133,40	2.311.718,48	1.873.091,81	2.997.776,77	2.806.335,44	2.581.688,77	2.470.675,52	2.384.619,74	2.402.232,81	**29.693.317,98**
Ungaria - Romania*	197.228,16	185.253,77	211.289,24	304.206,48	277.806,61	384.981,48	768.328,68	685.193,52	165.388,16	349.717,54	450.559,08	282.149,03	**4.262.101,74**
Romania - Ucraina	7.379,22	0,00	98.684,78	2.450,60	23.500,52	45.059,91	13.836,91	11.000,54	38.770,26	855,28	0,00	7.997,98	**249.536,00**
Ucraina - Romania	3.242,40	4.026,84	8.940,87	0,00	671,45	31.195,32	0,00	62.860,22	28.651,94	1.938,65	85.028,49	131.966,60	**358.522,78**
Romania - Moldova	0,00	0	0	0	0	0	0,00	0	0	0	0	0	**0,00**
Moldova - Romania	0,00	0	0	0	0	0	0,00	0	0	0	0	0	**0,00**
TOTAL	**6.487.011,49**	**7.993.069,89**	**7.468.594,91**	**9.892.707,52**	**11.040.897,37**	**9.074.450,62**	**8.241.845,47**	**7.828.267,69**	**6.678.552,73**	**6.297.867,32**	**6.438.347,27**	**6.546.789,63**	**93.988.401,92**

* Revenues from the allocation of NPS interconnection capacities to neighbouring power systems include revenues from daily and intra-day auctions on the border with Hungary, Bulgaria and Serbia as well as revenues from congestions resulted at market price coupling fir the next day markets of Romania, the Czech Republic, Slovakia and Hungary (4M MC Project)

The analysis of the collected amounts indicates that approx. 55.92% of revenues come from export capacity auctions and approx. 44.08% for import. The distribution per border indicates that 36.13% of revenues come from the capacity allocated between Romania and Hungary, 20.82% from capacity allocation auctions between Romania and Serbia and 42.41% from capacity allocation auctions between Romania and Bulgaria. Only 0,65% of revenues come from capacity allocation auctions between Romania and Ukraine.

Between 1 July 2018 and 30 June 2019, CNTEE Transelectrica S.A. registered congestion revenues totalling RON 93,988,449, representing an average Ron/Eur exchange rate of Ron 4.7328/Eur, amounting to Eur 19,858,952. Taking into account the provisions of the national law, these amounts are included in the gross annual profit obtained by the company and have been decreased by allocation of profit per destinations, according to the provisions of *Government Ordinance no. 64/2001 on the distribution of profit to national companies, national enterprises and companies partially or fully state-owned, as well as to the autonomous administrations*, as further amended and supplemented.

Thus, after applying the 16% corporate income tax and the 5% legal reserve, the amount remaining and submitted between 1 July 2017 – 30 June 2018 in the designated account was Ron 75,002,782 (Eur 15,847,444). The total amount transferred in the separate account in the period between 1 January 2013-30 June 2019 is Ron 340,184,839 after applying the profit tax and the legal reserve, which is Eur 71,878,135.

This revenue was used as follows:

a) to maintain or increase the availability through investments in grids, in accordance with art. 16 (6) let. b) of the *Regulation*, between 1 January -30 June 2019 it was used the amount of Ron 7,002,799 (Eur 1,479,631), respectively between 1 January 2013- 30 June 2019, the amount of Ron 178,071,158 (Eur 37,624,907);

b) to guarantee the actual availability of the allocated capacity, in accordance with art. 16 (6) let. a) no funds resulting from congestion revenues were used;

c) Upon establishment of the transmission tariff effective starting with 1 July 2019, in accordance with the provisions of paragraph 16 (6), second paragraph of (EC) Regulation 714/2009, ANRE applied a positive

correction in amount of Ron 11,575,635 (Eur 2,445,832) resulting from the closing of the tariff year 1 July 2017-30 June 2018.

CNTEE Transelectrica S.A. reported during the analyzed period the following expenses for the performance of investments funded from the allocation of the interconnection capacity (Article 16 (6) letter b) of the *Regulation*):

Pozitia din Anexa F2 la Planul de Dezvoltare 2018-2027	Denumire proiect	Plati 2013	Plati 2014	Plati 2015	Plati 2016	Plati 2017	2018	Plati ian-iunie 2019	TOTAL Plati 2013 - 30.06.2019	Stadiu proiect
F4	LEA 400 kV de interconexiune Reşiţa (România) - Pancevo (Serbia) - proiect nr. 25	356.936,00	4.018.228,39	34.716.516,28	21.361.325,40	26.138.957,68	13.164.005,37	7.450,00	99.763.419,12	Finalizat martie 2018
F1	Trecerea la tensiunea de 400 kV a axului Portile de Fier - Resita - Timisoara - Sacalaz - Arad - Etapa I: - LEA 400kV s.c. Portile de Fier - (Anina) - Resita (proiect nr. 26) + extinderea statiei Portile de Fier (proiect nr.382) + Statia Restita (proiect nr.383)	2.278.157,04	6.881.316,48	63.605.770,87	-25.646.091,34	9.995.497,44	6.028.075,04	337.764,30	63.480.489,83	1.Extindere statie Portiel de Fier -finalizat 2016 2. LEA 400 kV Portile de Fier-Anina Resita: Tronsonul LEA 400 kV Anina-Resita (reabilitare) realizat 90% LEA 400 kV Portile de Fier-Anina (LEA noua) -in executie. A fost conditionat de HG de scoatere din fond forestier care s-a emis in 30.05.2019 3. Statia 400 kV Resita: Contract semnat in anul 2015 si denuntat in anul 2017 de catre executant intrat in insolventa. Reluat procedura de licitatie in 11.05.2018. Contractul a fost impartit in doua componente: 1. achizitie echipamente secundare si servicii asociate. Contract semnat in anul 2018 2. achizitie echipamente primare. In procedura de achizitie -in etapa de evaluare oferte
F2	Trecerea la tensiunea de 400 kV a axului Porţile de Fier - Reşiţa - Timişoara - Săcălaz - Arad Etapa II: LEA 400 KV d.c. Resita-Timisoara - Sacalaz + statia 400kv Timisoara + statia 110 kv Timisoara	0,00	0,00	0,00	0,00	0,00	0,00	4.401.261,38	4.401.261,38	Pentru proiectul "LEA 400 KV d.c. Resita-Timisoara-Sacalaz" este in curs de obtinere Acordul de mediu. Pentru proiectul "Retehnologizare statia 110 kv Timisoara si Trecerea la tensiunea de 400 kv a axului Portile de Fier - Anina -Resita - Timisoara - Sacalaz - Arad, etapa II: Statia 400 kv Timisoara", lucrarile de executie sunt in derulare
F3	Trecerea la tensiunea de 400 kV a axului Porţile de Fier - Reşiţa - Timişoara - Săcălaz - Arad Etapa III: LEA 400 KV d.c.Timisoara - Sacalaz - Arad + statia 400/110 kv Sacalaz+ extindere statia 400 Arad	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	Pentru proiectul "LEA 400KV d.c. Timisoara - Sacalaz - Arad" sunt in derulare serviciile de proiectare pentru elaborarea SF, PT+CS. Pentru proiectele "Statia 400 kv Sacalaz si retehnologizare statia 110 kv Sacalaz" si proiectul "Extindere statie 400 kv Arad si retehnologizare statia de 110 kv Arad" sunt in pregatire caietele de sarcini pentru achizitia serviciilor de proiectare.
F5	LEA 400 KV d.c. (1 c.e) Gutinas- Smardan (proiect nr.779,133)	13.552,74	17.484,87	6.060,23	40.100,05	466.919,90	487.522,23	55.157,00	1.086.797,02	-In curs de initiere revizuire Acord de Mediu necesar obtinerii HG de scoatere din fond forestier - S-a iniţiat circuitul intermisterial de aprobare HG de transfer drept de administrare al terenurilor din patrimoniul public al statului de pe traseul LEA - În curs de pregătire documentaţie pentru obţinere HG de scoatere din circuitul agricol; -Se negociază contractul de finanţare în urma aprobării cererii de finanţare în cadrul Programului Operaţional Infrastructură Mare în aprilie 2019;
F6	Extinderea statiei 400 kv Cernavoda, et. II: racordare linii noi (proiect nr.623)	0,00	0,00	0,00	0,00	0,00	974,00	72,00	1.046,00	Lucrari de executie in derulare
F7	LEA 400 KV d.c. Cernavoda - Stalpu si racord in statia Gura Ialomitei (linie noua) (proiect nr.31)	2.388,77	3.281,73	8.159,13	5.891,62	1.020,00	2.489.984,19	1.980.909,20	4.491.634,64	Procedura de achizitii a fost initiata in 24.05.2018: În data de 29.05.2019 a fost aprobat de către Directorat Raportul procedurii licitaţie. În 31.05.19 s-au transmis comunicările către Ofertanţi iar în 10.06.19 un ofertant a depus contestaţie la CNSC. În 18.06.19 TEL a transmis la CNSC PV propriu. In curs de solutioanare contestatie
F8	Extinderea statiei 400 kv Gura Ialomitei cu doua celule: LEA 400 KV Cernavoda 3 si LEA 400 KV Stalpu (proiect nr. 314)	0,00	0,00	0,00	0,00	0,00	0,00	1.132,12	1.132,12	Procedura de achizitie lucrari in curs
F9	Statia 400 kv Stalpu(statie noua) + Modernizare celule 110 kv si medie tensiune (proiect nr. 23)	0,00	89.500,00	64.000,00	49.556,00	56.424,74	147.408,10	0,00	406.888,84	Procedura de achizitie lucrari in curs- evaluare oferte
F10	LEA 400 kV Gadalin - Suceava, inclusiv interconectarea la SEN (proiect nr.20)	317.094,40	5.126,13	4.679,07	715.703,96	14.700,35	359.853,56	505,86	1.417.663,33	S-a obtinut Avizu de mediu nr.1/2019. In curs de pregatire documentaie pentru emitere HG de expropriere
F11	LEA 400 kV Suceava - Balti, pentru porţiunea de proiect de pe teritoriul României (proiect nr.21)	575.207,07	165.945,00	940.000,01	246.374,29	818.392,00	8.463,00	0,00	2.754.381,37	In 6.03.2018 s-a predat la MEc documentatia pentru emitere OM indicatori si HG expropriere; S-a emis Ordinul MEC. Nr 848/05.07.2018 de aprobare indicatori th-ec. În curs de emitere HG de expropriere terenuri afectate de LEA.
F12	LEA 400 kV s.c. Oradea Sud - Nadab - Bekescsaba, etapa finală: tronsonul dintre stâlpii 1-42 (48) ai LEA 400 kV Oradea Sud - Nădab	0,00	0,00	0,00	0,00	0,00	47.897,20	218.546,79	266.443,99	HG nr.330/2018 pt expropriere teren de sub ultimele 2 borne astfel incat sa devina posibila finalizarea LEA (tronson stalpii 1-42). S-a reluat procedura de licitatie in data de 18.04.2019. S-a anulat din cauza depasirii valorii estimate. Perioada de executie 24 luni de la data semnarii contractului
	TOTAL	**3.543.336**	**11.180.883**	**99.345.186**	**-3.227.140**	**37.491.912**	**22.734.183**	**7.002.799**	**178.071.158**	

At the time of this report, the amount of Ron 162,113,682 (Eur 34,253,229), remained available to CNTEE Transelectrica S.A. in the designated account, for use in accordance with the provisions of art. 16 (6) of the *Regulation*.

		2013 lei (euro)	2014 lei (euro)	2015 lei (euro)	2016 lei (euro)	2017 lei (euro)	2018 lei (euro)	ian - iunie 2019 lei (euro)	Total 2013 -iunie 2019 lei (euro)
Cont 704.05	**Venituri din alocarea capacitatii de interconexiune (cont 704.05), din care:**	**23.459.854** (5.308.860)	**78.213.260** (17.597.368)	**102.160.979** (22.983.347)	**82.232.459** (18.311.316)	**75.726.834** (16.577.315)	**81.713.395** (17.558.802)	**42.031.724** (8.880.942)	**485.538.505** (102.590.117)
	*venituri utilizate in calculul tarifului de transport**	*0*	*0*	*-17.729.577*	*-18.845.650*	*-16.747.481*	*-17.494.640*	*11.575.635*	*-59.241.714*
	Venituri care urmeaza sa se repartizeze	**23.459.854**	**78.213.260**	**84.431.402**	**63.386.809**	**58.979.353**	**64.218.755**	**53.607.359**	**426.296.791**
	Rezerva legala 5%	1.172.993	3.910.663	4.221.570	3.169.340	2.948.968	3.210.938	2.680.368	21.314.840
	Impozit 16%	3.565.898	11.888.416	12.833.573	9.634.795	8.964.862	9.761.251	8.148.319	64.797.112
Cont disctinct	**Venituri virate**	**18.720.963** (4.236.470)	**62.414.181** (14.042.700)	**67.376.258** (15.157.763)	**50.582.674** (11.263.622)	**47.065.524** (10.303.085)	**51.246.566** (11.012.005)	**42.778.672** (9.038.766)	**340.184.839** (71.878.135)
	Sold la începutul anului	-	**15.177.627** (3.414.847)	**66.410.926** (14.940.591)	**34.441.999** (7.669.457)	**88.251.813** (19.319.150)	**97.825.424** (21.020.999)	**126.337.808** (26.694.094)	- -
	Total venituri virate	**18.720.963** (4.236.470)	**77.591.809** (17.457.546)	**133.787.185** (30.098.354)	**85.024.673** (18.933.080)	**135.317.336** (29.622.236)	**149.071.991** (32.033.004)	**169.116.480** (35.732.860)	**340.184.839** (71.878.135)
	Plati efectuate	*3.543.336* *(801.841)*	*11.180.883* *(2.515.611)*	*99.345.186* *(22.349.873)*	*-3.227.140* *(-718.611)*	*37.491.912* *(8.207.332)*	*22.734.183* *(4.885.184)*	*7.002.799* *(1.479.631)*	***178.071.158*** *(37.624.907)*
	Sold final=Sold initial + Venituri virate- Plati efectuate	**15.177.627** (3.434.629)	**66.410.926** (14.941.936)	**34.442.000** (7.748.481)	**88.251.813** (19.651.691)	**97.825.424** (21.414.904)	**126.337.808** (27.147.819)	**162.113.682** (34.253.229)	**162.113.682** (34.253.229)

Monitoring the technical cooperation between TSOs and third country operators

Regional cooperation on infrastructure projects represents an important dimension of CNTEE Transelectrica SA's activity in terms of cooperation with neighboring countries' power systems. In this context, TSO's focus has been on continuing the infrastructure projects aimed at increasing the interconnection capacity in order to improve mutual energy exchanges between neighboring systems and eliminate potential congestion.

Cooperation projects between Romania and the Republic of Moldova

RET development plan for 2018-2027 comprises the OEL 400kV Suceava-Bălți for the interconnection with the system from the Republic of Moldova. The general framework of cooperation in the energy field between Romania and the Republic of Romania is ruled by the Memorandum of Understanding signed by the Governments of the two countries in 2015.

In 2016 it has been concluded the Collaboration Agreement between CNTEE Transelectrica S.A. and ÎS Moldelectrica for the implementation of the interconnection projects through the Back to Back stations mentioned as well in the Memorandum of Understanding:

- OEL 400 kV Isaccea (RO) – Vulcănești (RM) (existing line) OEL 400kV new 400kV Vulcănești-Chișinău double circuit, Back to Back station at Vulcănești;
- OEL 400 kV Suceava (RO) – Bălți (RM) simple circuit and Back to Back station at Bălți;
- OEL 400 kV Iași (RO) – Ungheni – Străşeni (RM) simple circuit and Back to Back station at Străşeni.

From these projects it is most likely to implement the first two, the first project being on the list of Projects of Common Interest (PCI) promoted by the Energy Community. OEL 400 kV Suceava-Bălți might be implemented after the synchronous interconnection of the systems from Ukraine and the Republic of Moldova with the Continental Europe system or as a measure necessary for the synchronous interconnection if this will result from the studies carried out.

Synchronous interconnection of energy systems from Ukraine and the Republic of Moldova with the system of the Continental Europe

CNTEE Transelectrica S.A. is the Transmission System Operator who supports within ENTSO-E the synchronous interconnection of the power systems of Ukraine and the Republic of Moldova with the Continental Europe system.

The request regarding the analysis of this interconnection has been approved by UCTE (currently ENTSO-E-Continental Europe) in November 2006. The request for interconnection was made considering that the power systems of Ukraine and the Republic of Moldova will detach from the ISP/UPS system and form a single block for frequency adjustment (block control).

Between November 2014 and January 2016, it was conducted the feasibility study regarding the synchronous interconnection of power systems from Ukraine and the Republic of Moldova with the Continental Europe system. For this project the Ministry of Economy from the Republic of Moldova obtained European funds (within the Common Operational Project RO-UA-MD 2007÷2013) together with the Ministry of Economy from Romania and with the Ministry of Energy and Coal from Ukraine. The Ministry of Economy from the Republic of Moldova was the beneficiary of the project, and the other two ministries have been the partners. CNTEE Transelectrica S.A. together with other transmission operators from other countries (EMS-Serbia, MAVIRUngaria, PSE-Polonia, ESO-EAD-Bulgaria) formed a consortium to perform this study. CNTEE Transelectrica S.A. has been the consortium leader and ensured the management of the project. Bernard Energy Addvocacy (Belgium) acceded to the consortium for the treatment of the problems related to legislation.

The feasibility study recommended the technical and regulatory measures that must be adopted in the power systems of Ukraine and the Republic of Moldova to make possible the synchronous interconnection.

In June 2017 Ukrenergo, Moldelectrica and most of the TSOs in Continental Europe signed the Agreements on the conditions for the interconnection of the Ukrainian and Moldovan systems with that of the Continental Europe, whereby they have been agreed for the two countries the Catalogues of Measures and the following road-map of actions preceding the interconnection:

- They will be carried out detailed additional studies necessary to define in detail all the necessary technical measures. The studies will be carried out by a consortium of ENTSO-E Transmission and System Operators and they will use measurements made at the most important generator sets from Ukraine and the Republic of Moldova for the identification of the parameters of the mathematical model of the generators and corresponding regulators. CNTEE Transelectrica S.A. will be again the consortium leader;
- The required technical and regulatory measures will be implemented in Ukraine and Moldova;
- Isolated testing of the systems in Ukraine and the Republic of Moldova will be carried out;
- Tests ascertaining the operation interconnected with the Continental European system will be carried out.

Cooperation projects between Romania and Serbia

The development of the capacities of production based on renewable sources leads to the enhancement of the exchanges between the systems and to the increase of the variability of power flows on extended regions. The experience of the last years and the forecast for the following period indicate a high degree of demand of the Romanian network on the Serbian and Hungarian borders, both for exchanges between NPS and these systems, as well as for the transit which crosses the NPS network. To ensure the

infrastructure necessary for the exchanges of power in the region, it is necessary to increase the capacity of exchange of the Western interface of the system.

OEL project 400 kV double circuit Reşiţa (Romania) – Pancevo (Serbia)

The project is considered a project of regional relevance and targets the increase of electricity exchanges between Romania and Serbia by increasing the interconnection capacity between the two countries. The total length of the line is 131 km, of which 63 km in Romanian and 68 de km in Serbia.

According to the agreement with the EMS (Elektromreja Serbia), in December 2017 the 400 kV Resita - Pancevo LEA from the Pancevo station was activated at a 400-kV voltage. The 400kV station in Reșița is still under construction.

Monitoring the investment plans of TSO and DSOs

Monitoring the investment plans of TSOs

Monitoring the implementation of projects of common interest

(EU) Regulation No. 347/2013 of the European Parliament and the Council on guidelines for the trans-European power infrastructure proposes measures to achieve the following EU objectives: integration and operation of the internal power market, energy security at Community level, promotion and development of energy efficiency and energy from renewable sources energy and promotion of the interconnection of power grids.

In accordance with (EU) Regulation No. 347/2013, projects of common interest on the EU list were identified that Romania is going to carry out and which lead to the level of interconnection requested by the European Commission in the ***Communication on achieving the 10% power interconnection objective; preparing Europe's electricity grid for 2020***.

Currently, the interconnection capacity presented in Romania's Country Report is 7%, resulting from the distribution of the NTC import value of 1.4 GW to the net generation capacity (NGC) of 20.23 GW, values considered for 11 January 2017, 19:00 CET.

By achieving the interconnection with Serbia in 2018, Romania's interconnection rate would increase from the current 7% to over 9%, thus being closer to the 10% target.

With regard to achieving the 15% interconnection target for 2030, the intention is to meet this objective mainly through the implementation of PCIs and the performance of other RET development projects included in the RET Development Plan for 2018-2027.

In the third European Projects Common Interest (PCI) List, the following PCIs were included:
Project 138 - "Black Sea Corridor" – comprised of:
- OEL 400 kV d.c. Smârdan – Gutinaş;
- OEL 400 kV d.c. Cernavodă - Stâlpu, with an input/output circuit in Gura Ialomiţei;

Project 144 – "Mid Continental East Corridor" – comprised of:
- OEL 400 kV d.c. Reşiţa (RO) – Pancevo (Serbia);
- OEL 400 kV Porţile de Fier – Reşiţa and expansion of the 220/110 kV Reşiţa grid by building a new 400 kV station;
- transitioning OEL 220 kV d.c. Reşiţa –Timişoara – Săcălaz – Arad to 400 kV, including building the 400 kV stations Timişoara and Săcălaz.

The concrete benefits pursued through these projects are outlined in the RET Development Plan for 2018-2027, undergoing public debate.

Based on the periodic reports of the TSO, the current state of the PCIs which are part of the "North-South Power Interconnections in Central and South-Eastern Europe" ("NSI East Electricity") priority corridor is the following:

1. ***Overhead Electric Line (OEL) 400 kV Gutinaş - Smârdan***

Code from the National Development Plan for 2018-2027: F.5
Code from TYNDP 2016: 138.275 – part of the cluster 138 "*Black Sea corridor*"
PCI 3rd list code: 3.8.5 – part of the cluster 3.8 "*Bulgaria - Romania Group, Capacity Building"* (known as "Black Sea corridor)"

Power priority corridor: "*North-South Power Interconnections in Central and South-Eastern Europe" ("NSI East Electricity")*: north-south and east-west interconnections and internal lines for the completion of the internal market and for the integration of the production from renewable sources

Aim of the project:
The investment objective "LEA 400kV d.c. Smârdan – Gutinaş" is part of the consolidation of the power transmission grid (Ro: RET) needed as a result of the development of production capacities in the South-Eastern part of the country. The project leads to the elimination of limitations in the evacuation of electricity produced in CEE in the Dobrogea area and the occurrence of congestions in the RET. For connecting this OEL, it is necessary to extend the Gutinaş station and the Smârdan station with two-line cells.

Project description:
LEA 400 kV d.c. Smârdan - Gutinaş will be made up of two distinct sections: a 400-kV underground (400 kV) cableway between the 400 kV Gutinaş station and Terminal No. 1, with a length of approx. 2.5 km and a 400 kV OEL section between terminal post no. 1 and the Smârdan station cell, with a length of approx. 140 km.

Current status and stages of the project:
This project has been selected for accessing European funds through the **High Infrastructure Operational Program*, Priority Axis 8 - Intelligent and Sustainable Power and Gas Transmission Systems, Specific Objective 8.1*** - *Increasing the Capacity of the National Power System to Acquire Energy from Renewable Resources.*

- The feasibility study was revised and approved in CTES Transelectrica - Opinion no. 100/07.06.2016;
- Environmental Permit no. 8/27.11.2013 was obtained, updated for the 400 kV OEL corridor amended by the Decision of the National Environmental Protection Agency no. 23/15.10.2015.
- The technical and economic indicators were approved by Order of the Ministry of Economy no. 743/11.07.2017;
- The location and commencement of the procedure for the expropriation of the private property that constitutes the expropriation corridor for public utility of national interest was approved by Government Decision no. 840/2017;
- The technical design and tender book have been completed following the delivery of the GD 844/2017 for the approval of the site;
- The decisions of expropriation have been adopted according to the provisions of Law 255/2010;

- The ANRE approval for the inclusion of the objective OEL 400 kV Gutinas Smârdan in the investment plan has been obtained, for the fourth regulatory period, in case of access to non-refundable European funds, according to ANRE address no. 87625/15.11.2018;
- The feasibility study has been reviewed and endorsed in CTES Transelectrica – Notice no. 148/28.11.2018;
- They have been obtained the necessary building permits:
  - County Council of Galați no. 57/12.10.2018;
  - County Council of Vrancea no. 148/02.10.2018;
  - County Council of Bacău no. 182/05.11.2018;
- At the request of CNTEE Transelectrica S.A., the Ministry of Economy initiated the procedure of institutional endorsement of the Government Decision for ensuring the transfer of the right of administration and change of the destination of the real estates public or private property of the state that are administered by public institutions, the regime of which has been established through special laws, found in the expropriation corridor of the project;
- The request for funds to access non-refundable European funds has been submitted, registered with POIM under no. 92507/12.12.2018;
- The documentation of the Request for funds has been assessed by the advisor JASPERS (POIM partner for technical assistance, selected by the European Commission, that issued on the date of 28.12.2018 Action Completion Date – without remarks.

The next stages of the project are:
The approval of the request for funds by MFE-AMPOIM;

- Conclusion of the financing agreement;
- Issuance of the Government Decision for the transfer of the right of temporary and final administration from the agricultural circuit
- Issuance of the Government Decision for the temporary or final removal from the agricultural circuit;
- Issuance of the Government Decision for the temporary or final removal from the National Forest Fund;
- Completion of the expropriation procedure;
- Running the procurement procedure and signing the execution contract;
- Performance of the works proposed in the Development Plan for 2018-2027: 2020-2022.

2. Overhead Electric Line (OEL) 400 kV Cernavodă – Stâlpu, with an entry/exit circuit at Gura Ialomiţei Station

Code from the National Development Plan for 2018-2027: F.6+F.7+F.8+F.9
Code from TYNDP 2016: 138.273 – part of the cluster 138 „*Black Sea corridor*"
PCI 3rd list code: 3.8.4 – part of cluster 3.8 "*Bulgaria-Romania Group, Capacity Building"* (known as "Black Sea corridor)"
Power priority corridor: "*North-South Power Interconnections in Central and South-Eastern Europe" ("NSI East Electricity")*: north-south and east-west interconnections and internal lines for the completion of the internal market and for the integration of the production from renewable sources.

Aim of the project:
To increase the interconnection capacity between NPS and the systems of the neighboring countries and the capacity of taking over the electricity discharged from the future Units 3 and 4 Cernavodă, and the electricity generated by the wind power plants installed in the Dobrogea area.

Project description:
Overhead Electric Line (OEL) will be carried out as a double circuit line; one circuit will be entry-exit at the Gura Ialomiţei station, and the second circuit will be continuous up to the Stâlpu station.
The route of the overhead electric line is through the peripheral areas of 34 communes from Constanta, Ialomita and Buzau counties and will cross the Danube River and the Borcea branch. For the branching of the OEL 400 kV d.c. Cernavodă-Stâlpu to the Power Transmission Grid they are necessary works for the construction of the 400 kV Stâlpu station and the extension of the 400 kV Cernavodă and Gura Ialomiței stations with two 400 kV cells for each one.

Current status and stages of the project:
- The Feasibility Study (SF) was completed, approved by the Board of Directors of CNTEE Transelectrica SA by Decision no. 7 of 06.03.2012 and updated (general estimate and technical-economic indicators) by Decision no. 343/16.04.2015 of the Managing Board.
- The topocadastral study was drawn up and clarified the legal status of the land was analysed;
- Environmental Permit no. 1/04.07.2014 was obtained;
- The Technical Project and tender book have been developed;
- The technical and economic indicators were approved by MECRMA Order no. 1444/2016;
- Due to the change in the value of the investment, MECRMA Order no. 1444/2016 approving the technical and economic indicators was amended by Order of the Minister of Economy no. 745/07.11.2017;
- The location and commencement of the expropriation procedure for the private property real estate representing the national interest public utility expropriation corridor was approved by Government Decision no. 805/2017;
- Following the submission of the application on the date of 9 October 2017 at the EC, the 400 kV d.c. Cernavodă – Stâlpu OEL project received a favourable opinion for financing in the form of a grant, by means of the financial instrument Connecting Europe Facility (CEF). According to this financial support mechanism established under (EU) Regulation no. 1316/2013, the amount of the financial assistance from the EU is maximum 50% of the eligible costs of the works, respectively the amount of Eur 27085000.
- The financing contract INEA/CEF/ENER/M2017/1509097 for the grant by means of the financial instrument Connecting Europe Facility (CEF) has been concluded on the date of 20.04.2018;
- For the OEL 400 kV Cernavodă –Stâlpu they have been obtained the following building permits:
  - no. 10/27.04.2018 issued by the County Council of Ialomița,
  - no. 24/22.06.2018 issued by the County Council of Constanța,
  - no. 29/30.07.2018 issued by the County Council of Buzău,
  - no. 6/22.08.2018 issued by the Town Hall of Stâlpu Commune.
- It has been obtained the Urbanism Certificate no. 231/17.09.2018 for the extension of the Cernavodă Station stage II, issued by the Town Hall of the town of Cernavodă;
- The procurement procedure for the building works for the "Extension of the 400 kV Cernavodă station - Stage II – Branching of new lines" is completed, following to be concluded the contract for works;

- The procurement procedure for the building works for the "400 kV Stâlpu Power Station" and for the "Extension of Gura Ialomiței station with two 400 kV cell lines" is in progress.

Next stages:

- Obtaining the Building Permits for the extension of the 400 kV Cernavodă and Gura Ialomiței power stations with two 400 kV cells;
- Issuance of the Ministerial Order for the final removal of said land from the National Forest Fund;
- Conclusion of the execution contracts for the construction of the 400 kV Stâlpu OEL and station, and for the extension of the 400 kV Cernavodă and Gura Ialomiței stations;
- Execution of the works proposed in the Development Plan for 2018-2027: 2019-2021.

3. Interconnection Overhead Electric Line (OEL) 400 kV Reșita (Romania) – Pancevo (Serbia)

Code from the National Development Plan for 2018-2027: F.4
Code from TYNDP 2016: 144.238 – part of the cluster 144 "Mid Continental East corridor"
PCI 3rd list code: 3.22.1 – part of the cluster 3.22 "Romania-Serbia (known as the Mid Continental East corridor) and Italy-Muntenegru Group"
Power priority corridor: "*North-South Power Interconnections in Central and South-Eastern Europe" ("NSI East Electricity")*: north-south and east-west interconnections and internal lines for the completion of the internal market and for the integration of the production from renewable sources.

Project description:
The Overhead Electric Line (OEL) 400 kV Reşiţa – Pancevo, with a length of 131 km (63 km on the Romanian territoriy and 68 km on the Serbian territoriy) has been carried out in double circuit and it crosses on the Romanian territory 11 localities from Caraş-Severin county: municipality of Reşiţa, communes Ezeriş, Lupac, Dognecea, Goruia, Ticvaniu Mare, Berlişte, Giudanoviţa, Grădinari, Vărădia and Vrani.

Current state of the project:
The execution works have been completed on the date of 30.03.2018.

4. Overhead Electric Line (OEL) 400 kV Porțile de Fier – Anina – Reşiţa

Code from the National Development Plan for 2018-2027: F.1.1+F.1.2+F.1.3
Code from TYNDP 2016: 144.269 – part of the cluster 144 „Mid Continental East corridor"
PCI 3rd list code: 3.22.2 – part of the cluster 3.22 "Romania-Serbia (known as Mid Continental East corridor) and Italia-Muntenegru Group"
Power priority corridor: "*North-South Power Interconnections in Central and South-Eastern Europe" ("NSI East Electricity")*: north-south and east-west interconnections and internal lines for the completion of the internal market and for the integration of the production from renewable sources.

Project description:
The 400 kV Porţile de Fier - Reşiţa OEL Project consists of: endowing an OEL cell at the Porţile de Fier Station and replacing the control-command and protection system at the Porţile de Fier Station, creating a new 400 kV OEL between Porţile de Fier - Anina, rehabilitating the 400 kV OEL Anina - Resita between terminals 21 - 142, creating the 400/220/110 kV Resita station by building a new 400 kV station and reengineering the old 220/110 kV station.

Current state of the project:

- The Feasibility Study has been finalized and endorsed - Opinion CTES 405/02.12.2011;
- The technical design and specification were finalized and endorsed - Opinion CTES 352/31.10.2013;
- It was obtained the Environmental Permit no. 6/21.11.2013;
- Building Permit No. 141/24.11.2014 for Caraş Severin County was obtained;
- Building Permit No.115/21.08.2017 for Mehedinţi County was obtained;
- Execution contract no. C229/10.29.2015 was concluded;
- For the 400 kV OEL Porțile de Fier – Anina section, the location and the commencement of the expropriation procedure of privately owned buildings was approved by Government Decision 917/12.2016 for the expropriation corridor of investment objective "Transition to 400 kV voltage of the Portile de Fier - Reşiţa - Timişoara - Săcălaz – Arad axis/400 kV OEL Porțile de Fier - (Anina) - Resita";
- Expropriation decision no. 102/10.07.2017 was issued;
- The documentation for obtaining the GD for the removal from the forest fund of the surfaces of forest affected by the crossing of the OEL received a favourable opinion from the Ministry of Waters and Forests; on the date of 28.12.2018 the proposal for the GD has been sent to the other endorsing ministries (the Ministry of Economy, the Ministry of Finances, the Ministry of Environment, the Ministry of Justice)
- Through the address no. 29438 from 12.07.2018 it was issued the Order for the initiation of the works on the 400 kV Porțile de Fier – Anina OEL section, with entry into force from 16.07.2018;
- Rehabilitation works on the 400 kV OEL s.c Anina - Reşiţa section are ongoing
- At the 400 kV Resita station – for the primary equipment it has been resumed the procurement procedure for the execution works following the remarks on the documentation received from the ANAP; for the secondary equipment it was signed the execution contract, but it shall come into force once with the contract for the primary equipment for the 400/220/110 kV Reșița station;

Next stages:

- Issuance of the Government Decision for the temporary or final removal from the national forest fund;
- Execution of the works proposed in the Development Plan for 2018-2027: 2015-2021.

5. Transition to 400 kV of the 220 kV OEL Resita - Timişoara/Săcălaz, including the building of the 400-kV station Timişoara

Code from the National Development Plan for 2018-2027: F.2.1+F.2.2
Code from TYNDP 2016: 144.270 – part of the cluster 144 ”Mid Continental East corridor“
PCI 3rd list code: 3.22.3 – part of the cluster 3.22 ”Romania-Serbia (known as Mid Continental East corridor) and Italy-Muntenegru Group“
Priority corridor regarding energy: “*North-South Power Interconnections in Central and South-Eastern Europe” ("NSI East Electricity")*: north-south and east-west interconnections and internal lines for the completion of the internal market and for the integration of the production from renewable sources.

Project description:
According to the project theme, Transition to 400 kV of the 220 kV OEL on the Resita-Timisoara-Arad section is carried out by means of the following investments:

- 400 kV section Resita - Icloda of 400 kV OEL Resita-Timişoara;
- 400 kV section Icloda-Timisoara 400 kV OEL Resita-Timisoara;
- 400 kV section Icloda-Săcălaz 400 kV OEL Reşiţa-Timişoara.

- Construction of the 400 kV Timisoara station and modernization of the 110 kV Timișoara station;

Current state of the project:

- The Feasibility Study has been finalized and endorsed - Opinion CTES 155/02.08.2016;
- The technical project and the tender book were finalized in December 2017 - CTES Opinion no. 172/12.19.2017;
- The Environment Permit follows to be obtained;
- On the date of 28.09.2017 it has been sent to the Ministry of Energy – the Competent Authority for Projects of Common Interest, the Notice for the initiation of the procedure prior to the submission of the application for the project ”*Transition to 400 kV of the 220 kV OEL Resita - Timişoara/Săcălaz”*, in accordance with the provisions of art.10 paragraph (1) letter (a) of the (EU) Regulation no. 347/2013 of the European Parliament and Council regarding the guidelines for the cross-European power infrastructures, for the repeal of Decision no. 1364/2006/CE and for the amendment of the (EC) Regulations no. 713/2009, no. 714/2009 and no. 715/2009;
- in order to initiate the authorization procedure according to the provisions of the EU Regulation 347/2013, the Ministry of Energy - ACPIC approved through the address no. 111258/13.10.2017 the Notification of the project;
- On the date of 01.03.2018 it has been sent to the Ministry of Energy – the Competent Authority for Projects of Common Interest, the Concept for the participation of the public; on the date of 20.03.2018 it was received the approval of the ME of the Concept for the participation of the public. They have been posted on the internet page of CNTEE Transelectrica S.A. the informative leaflet and the result of non-technical nature.

Next stages:

- The elaboration and submission of the application file to the Ministry of Energy-ACPIC, according to the provisions of the EC Regulation 347/2013, art. 10 point 1;
- The execution of the works (OEL 400 kV Reșița – Timișoara/Săcălaz) proposed in the Development Plan for 2018-2027: 2020-2023;
- The 400 kV and 110 kV stations from Timișoara –the contract for the execution of the works follows to be concluded;
- The execution of the works (400 kV and 110 kV stations from Timișoara) proposed in the Development Plan for 2018-2027: 2018-2023.

6. Transition to 400 kV of 220 kV OEL Arad - Timişoara/Săcălaz, including the construction of the 400 kV Scălaz station and the expansion of Arad station

Code from the National Development Plan for 2018-2027: F.3.1+F.3.2+F.3.3
Code from TYNDP 2016: 144.270 – part of the cluster 144 ”Mid Continental East corridor“
PCI 3rd list code: 3.22.4 – part of the cluster 3.22 ”Romania-Serbia (known as Mid Continental East corridor) and Italy-Muntenegru Group“
Power priority code: “*North-South Power Interconnections in Central and South-Eastern Europe” ("NSI East Electricity")*: north-south and east-west interconnections and internal lines for the completion of the internal market and for the integration of the production from renewable sources.

Project description:

- Building the OEL section from Timişoara and Scălaz stations to Arad;
- Completing the 400 kV Sacalaz station and upgrading of the 110 kV Săcălaz station;

- Expansion of 400 kV Arad station.

Current state of the project

- In April 2018 it was concluded the contract for design services (SF, PT, CS, documentation for obtaining the opinions and approvals).

Next stages:
Execution of the works proposed in the Development Plan for 2018-2027: 2022-2027

Monitoring the implementation of the 10-year power transmission grid development plan

The state of the projects included in the RET Development Plan for the period between 2018-2027 (PDRET) at the end of 2018 is detailed in the following table:

Crt. No.	Project name	Estimated PIF year during 2016-2025	Estimated PIF year during 2018-2027	Stage compared to 2016-2025	Project stage during 2018-2027	Reason for shift/postponement of PIF deadline	Remarks
A	**EXISTING RET REENGINEERING**						
1	Improving the safety of the installations pertaining to București Sud station 400/220/110/10 kV - Replacement 10 kV equipment (Batch I+II)	2016	2018	delayed	relocation of cables to perform	ENEL delay in relocation of cables	
2	**Reengineering of 400/220/110/20 kV station Bradu**	2018	2018	within time limit	works ongoing		
3	**Reengineering 220/110 kV station Turnu Severin Est**	2018	2019	delayed	works ongoing	Contractor delays	
5	**Modernization 110 kV and 20 kV substation Suceava**	2017	2018	delayed	works ongoing	Contractor delays	
6	**Reengineering of 400/110/20 kV station Domnești**	2019	2020	delayed	ongoing - engineering	Long duration acquisition procedures/restart	
7	**AT and Trafo replacements in sub-stations *(stage 2), of which:***	2021	2022	Delayed			
7.1	***Stage 1 (6 AT 200 MVA; 5 Trafo 16 and 25 MVA)***	2018	2018		works ongoing	according to concluded contracts chart	
7.2	***Stage 2 (8 AT 200 MVA; 4 Trafo 16 MVA)***	2021	2022		ongoing - design	Delay due to designers	
8	**AT and Trafos replacements in sub-stations *(stage 3)***	2023	2027	postponed	has not been started	Starts after the completion of stage II	
9	**Reengineering of 220/110/20 kV station Ungheni**	2019	2021	delayed	ongoing - engineering	faulty design	

Crt. No.	Project name	Estimated PIF year during 2016-2025	Estimated PIF year during 2018-2027	Stage compared to 2016-2025	Project stage during 2018-2027	Reason for shift/postponement of PIF deadline	Remarks
10	**Modernization 220/110/20 kV substation Arefu**	2019	2020	delayed	Contract signed in 2017	Contractor delays	
11	**Modernization 220/110 kV substation Râureni**	2018	2019	delayed	works ongoing	Contractor delays	
12	**Modernization 400/110 kV station Cluj Est**	2017	2018	delayed	PIF 2018 - completed	Contractor delays	
13	**Modernization 220/110 kV station**	2019	2019	within time limit			
14	**Reengineering 400/110/20 kV station Smârdan**	2022	2023	Delayed			
15	**Reengineering 220/110 kV station Craiova Nord**	2019	2020	Delayed	acquisition procedure ongoing	long duration acquisition procedure	
16	**Reengineering 110 kV station Timişoara**	2019		within time limit		To be carried out within Banat Axis, stage II and III	correlated with F.2.1
17	**Reengineering 110 kV station Arad**	2021		within time limit			correlated with F.3.3
18	**Reengineering 110 kV station Săcălaz**	2023		within time limit			correlated with F.3.2
19	**Reengineering 220/110/MT kV station Baru Mare**	2020	2023	delayed	Undergoing CTES endorsement process	Design amendments were needed for the inclusion of the additional requirements. Will be performed after the Haşdat station	
20	**Reengineering 220/110 kV station Iaz**	2019	2021	delayed	acquisition procedure ongoing	conditioned by works in the area	
21	**Reengineering 220/110 kV station Hăşdat**	2019	2020	delayed	acquisition procedure ongoing	conditioned by works in the area	
22	**Reengineering 220 kV station Oţelarie Hunedoara**	2018	2019	delayed	acquisition procedure ongoing	resuming tender	
23	**Reengineering 220/110 kV station Fileşti**	2019	2022	delayed		Amendment technical solution	
24	**Modernization 400 (220)/110/20 kV station Munteni**	2020	2021	delayed	ongoing - engineering	long duration acquisition procedure	
25	**Reengineering Alba Iulia station 220 /110 kV/MT**	2023	2023	within time limit	has not been started		

Crt. No.	Project name	Estimated PIF year during 2016-2025	Estimated PIF year during 2018-2027	Stage compared to 2016-2025	Project stage during 2018-2027	Reason for shift/postponement of PIF deadline	Remarks
26	**Reengineering 400/110 kV station Darste**	2027	2027	within time limit	has not been started		
27	**Reengineering Medgidia Sud 110 kV station**	2019	2020	delayed	acquisition procedure ongoing	long duration acquisition procedure	
29	**Modernization 110 kV stations Bacău Sud and Roman Nord pertaining to 400 kV Moldova axis**	2019	2020	delayed	ongoing	Long duration acquisition procedure	
30	**Reengineering 400 kV station Isaccea *(stage I - replacement 2 BC, cells and OEL cell 400 kV Stupina***	2019	2019	within time limit			
31	**Reengineering 400 kV station Isaccea *(stage II - reengineering 400 kV station)***	2022	2025	delayed	ongoing - design	Amendment of technical solution	
32	**Reengineering of the 400/110 kV transformer substation Pelicanu**	2022	2024	delayed	ongoing - design		
33	**Modernization of 110 and 400 (220) kV installations at the Focșani Vest station**	2019	2020	delayed	ongoing	Long duration acquisition procedures	
34	**Modernization 110 kV cells and medium voltage at the Stâlpu substation**	2020		Within time limit		Correlated with 400 kV station Stâlpu	Correlated with F.9
35	**LST technology and fast NPS intervention R&D centre - stage I**	2018	2019	Within time limit	ongoing	delays in design, long duration of acquisition procedure, land permit;	moved to cap. B. Other investments at level of agency and execution
36	**Installation of optic fibre on 220 kV OEL Fundeni - Brazi Vest - *batch 1***	2017	2018	Within the time limit		contractor delay/tender economics	moved to cap. B. Other investments at level of agency and execution
37	**Connecting Turnu Măgurele, Mostiștea, Stâlpu, Teleajen station to the optic giber network of CNTEE Transelectrica - SA - *batch 2***	2016	2018	Within time limit		Long duration acquisition procedures	moved to cap. B. Other investments at level of agency and execution
38	**Modernization CTSI Craiova by use of the IEC 60870-5-104 communication protocol**	2018	2018	Within time limit			moved to cap. B. Other investments at

Crt. No.	Project name	Estimated PIF year during 2016-2025	Estimated PIF year during 2018-2027	Stage compared to 2016-2025	Project stage during 2018-2027	Reason for shift/postponement of PIF deadline	Remarks
							level of agency and execution
39	**Modernization of the command-control-protection system of the 220/110/20 kV station Sărdănești**	2018	2018	Within time limit			
40	**Modernization of the 220 kV, 110 kV command-control-protection-metering system at the 220/110/20 kV station and reengineering medium voltage and DC and AC internal services at the 220/110/20 kV station Ghizdaru**	2018	2021	delayed		Long duration acquisition procedures/restart; update of documentation for correlation primary and secondary equipment	
42	**Modernization of the command-control-protection and CTSI integration system of the Drăgănești-Olt station**	2018	2022	delayed		Will be carried out 9 months after Gradiște	
43	**Modernization of the command-control-protection and CTSI integration system of the Gradiște station**	2017	2021	delayed	Preparation of acquisition documentation	Cancelled tender	
44	**Modernization 220/110/20 kV station Vetiș - primary equipment**		2021	new project			
	Modernization control, protection and automation system from the 400/220/110/20 kV station Sibiu Sud	2025	2023	postponed	Excluded from PD 2018-2027 based on the letter from ST Sibiu		
45	**Modernization 220/110/20 kV station Fântânele**	2025	2023	postponed	ongoing - design	Postponement for positions 44 and 45 from PD 2016-2025 postponement due to improbability of granting simultaneous withdrawals from function established by DEN.	
46	**Modernization 220/110 kV station Calafat**	2020	2020	postponed			
47	**Modernization of the command - control - protection system for the 400-kV station Cernavoda**	2025	2025	postponed			
48	**Modernization of the command - control - protection system for the 400/110/20 kV station Oradea Sud**	2020	2023	postponed			
49	**Modernization of the command - control - protection system for the 400/220 kV station Roșiori**	2025	2025	postponed			

Crt. No.	Project name	Estimated PIF year during 2016-2025	Estimated PIF year during 2018-2027	Stage compared to 2016-2025	Project stage during 2018-2027	Reason for shift/postponement of PIF deadline	Remarks
50	**Modernization of the command - control - protection system for the 220/110/20 kV station Sălaj**	2020	2024	postponed			
51	**Modernization of the command - control - protection system for the 220/110 kV station Baia Mare 3**	2025	2025	postponed			
52	**Modernization of the command - control - protection system for the 220/110 kV station Cluj Florești**	2025	2026	postponed			
53	**Modernization of the command - control - protection system for the 400-kV station Tânțăreni**	2020	2023	postponed			
54	**Modernization of the command - control - protection system for the 400/220/110 kV/MT station Urechești**	2025	2025	postponed			
55	**Modernization of the command - control - protection system for the 220/110 kV station Paroșeni**	2020	2023	postponed			
56	**Modernization of the command - control - protection system for the 220/110 kV station Peștiș**	2025	2025	postponed			
57	**Modernization of the command - control - protection system for the 400-kV station Nădab**	2025	2025	postponed			
58	**Modernization of the command - control - protection system for the 400-kV station Calea Aradului**	2025	2026	postponed			
59	**Modernization of the command - control - protection system for the 400/220/110 kV station Mintia**	2025	2028	postponed			
60	**Modernization of the command - control - protection system for the 220/110/20kV station Târgoviște**	2025	2024	postponed			
61	**Modernization of the command - control - protection system for the 220/110 kV station Fundeni**	2020	2022	postponed			

Crt. No.	Project name	Estimated PIF year during 2016-2025	Estimated PIF year during 2018-2027	Stage compared to 2016-2025	Project stage during 2018-2027	Reason for shift/postponement of PIF deadline	Remarks
62	**Modernization of the command - control - protection system for the 400/220/110 kV station București Sud**	2025	2026	postponed			
63	**Modernization of the command - control - protection system for the 220/110 kV station Turnu Măgurele**	2025	2025	postponed			
64	**Modernization of the command - control - protection system for the 220/110/20 kV station Gheorgheni**	2025	2027	postponed			
65	**Modernization power supply at UNO DEN locations**		2019	New project			
66	**Mobile cells of 110 kV, 220 kV and 400 kV**		2019	New project	Tender procedure ongoing		
67	**Installation of two modern means of compensating reactive power in the 400/220/110/20 kV Sibiu Sud and 400/220/110/20 kV Bradu stations**		2023	New project			
68	**Replacement of 3 BC 100 MVAR 400 kV units in Arad, Smârdan and București Sud.**		2020	New project			
69	**Endowment of interphase reactors and transformer units with monitoring installations (for those which are not already equipped with them)**		2020	New project			
C	**CONSUMPTION SUPPLY SAFETY**						
1	**Installation of trafo T3 - 250 MVA (400/110 kV) at the 400/110 kV station Sibiu Sud**	2018	2019	delayed	Tender procedure ongoing	Requires 2 tender procedures	
2	**AT2 Iernut - 400 MVA, 400/220 kV Installation AT2 400 MVA, 400/231/22 kV as well as connected cells in the Iernut station and modernization of the command and control system of the 400/220/110/6 kV station Iernut**	2019	2021	delayed	Tender procedure ongoing		

Crt. No.	Project name	Estimated PIF year during 2016-2025	Estimated PIF year during 2018-2027	Stage compared to 2016-2025	Project stage during 2018-2027	Reason for shift/postponement of PIF deadline	Remarks
3	**Increasing the transmission capacity of OEL 220 kV d.c București Sud-Fundeni**	2020		cancelled	This project was suspended, according to Note 40235/30.10.2017	Design expenses were transferred to operating expenses	
5	**Replacement of trafo T3 and T4 110/10 kV, 25 MVA with 110/(20)10 kV, 40 MVA transformers at the Fundeni substation**		2020	New project	Tender procedure ongoing		
6	**Replacement AT3-ATUS-FS 400/400/160 MVA 400/231/22 kV from the 400/220 kV station Porțile de Fier**		2022	New project			
D	**INTEGRATION OF PRODUCTION FROM NEW PLANTS - DOBROGEA AND MOLDOVA**						
1.1	**Connection 400 kV OEL Isaccea - Varna and 400 kV OEL Isaccea - Dobrudja to the 400-kV station Medgidia Sud. Stage I - Expansion of the 400-kV station Medgidia Sud**	2017	2018	delayed		Contractor has entered insolvency	
1.2	**Connection 400 kV OEL Isaccea - Varna and 400 kV OEL Isaccea - Dobrudja to the 400-kV station Medgidia Sud. Stage II - 400 kV d.c. OEL Connections to Medgidia Sud station**	2018	2021	delayed	Acquisition procedure	Delayed Government Decision for expropriation /tender appeals	
2	**400 kV d.c. OEL (1ce) Gutinaș - Smârdan**	2020	2022	delayed	ongoing - design	Delayed issuance of Government Decision for expropriation	Moved to chapter F at position F.5
3	**Expansion of the 400-kV station Cernavoda, et. I + II (replacement of 2 interphase reactors; connection of new lines)**	2019	2021	delayed		Correlated with the evolution of project "400 kV dc OEL Cernavoda – Stâlpu and connection at the Gura Ialomiței station"	Moved to chapter F at position F.6
	Stage I: replacement of 2 interphase reactors						
	Stage II: connection of new lines	2019	2021			Correlated with the evolution of project "400 kV dc OEL Cernavoda – Stâlpu and connection at the Gura Ialomiței station"	Moved to chapter F at position F.6

Crt. No.	Project name	Estimated PIF year during 2016-2025	Estimated PIF year during 2018-2027	Stage compared to 2016-2025	Project stage during 2018-2027	Reason for shift/postponement of PIF deadline	Remarks
4	**400 kV d.c. OEL Cernavoda - Stâlpu and connection at the Gura Ialomiței station (new line)**	2020	2021	delayed	acquisition procedure ongoing	Delayed issuance of Government Decision for expropriation	Moved to chapter F at position F.7
5	**Expansion of 400 kV station Gura Ialomiței by two cells: OEL 400 kV Cernavoda 3 and OEL 400 kV Stâlpu**	2019	2021	delayed		Correlated with the evolution of project "400 kV dc OEL Cernavoda – Stâlpu and connection at the Gura Ialomiței station"	Moved to chapter F at position F.8
6	**400 kV station Stâlpu (new station) + Modernization 110 kV and medium voltage cells**	2020	2021	delayed		Correlated with the evolution of project "400 kV dc OEL Cernavoda – Stâlpu and connection at the Gura Ialomiței station"	Moved to chapter F at position F.9
7	**Transition to 400 kV LEA Brazi Vest - Teleajen - Stâlpu, including: Acquisition AT 400 MVA, 400/220/20 kV and expansion works for the related 400 kV and 220 kV stations, at the 400/220/110 kV station Brazi Vest**	2020	2023	delayed		Correlated with the evolution of project "400 kV dc OEL Cernavoda – Stâlpu"	
7.1	**400 kV OEL Brazi Vest - Teleajen - Stâlpu**		2021		ongoing - design		
7.2	**Expansion of Brazi Vest station (including AT4)**		2022		CS - permitting ongoing		
7.3	**400 kV station Teleajen and reengineering 110 kV station**		2023		ongoing - design		
8	**400 kV d.c. OEL (1ce) Constanta Nord - Medgidia Sud**	2022	2024	delayed	ongoing - design		
9	**Increase in the transmission capacity of 220 kV OEL Stejaru -Gheorgheni - Fântânele**	2020	2022	delayed	ongoing - design		
10	**Increase in the transmission capacity of 220 kV OEL Dumbrava - Stejaru**	2021		cancelled	This project was suspended	According to regime analyses	
11	**400 kV OEL Stâlpu - Brașov, including interconnection to NPS (new line)**	2025	2036	postponed		Design starts after the completion of the 400 kV d.c. OEL CNE-Gura Ialomitei-Stâlpu	It was estimated a period of 7 years for the design, for obtaining the opinions/approvals, for the issuance of a

Crt. No.	Project name	Estimated PIF year during 2016-2025	Estimated PIF year during 2018-2027	Stage compared to 2016-2025	Project stage during 2018-2027	Reason for shift/postponement of PIF deadline	Remarks
							Government Decision for expropriation + 7 years of execution (90% forest and mountain)
12	**Increase in transmission capacity of OEL section 400 kV București Sud - Pelicanu (8km)**	2021	2023	postponed			
13	**Increase in the transmission capacity of 400 kV OEL Cernavoda Pelicanu (53 km)**	2021	2025	postponed		Starts after CNE-Stâlpu	
14	**Transition of 400 kV OEL Isaccea - Tulcea Vest from simple to double circuit**		2026	New project			
E	**INTEGRATION OF PRODUCTION FROM PLANTS - OTHER AREAS**						
1	**Ostrovu Mare 220 kV (new station)**	2019	2021	delayed		Correlated with 220 kV OEL Ostrovu Mare - RET	
2	**220 kV OEL Ostrovu Mare - RET (new line)**	2019	2021	delayed		Delayed issuance of Government Decision for expropriation	
F	**INCREASE OF THE INTERCONNECTION CAPACITY AND INTEGRATION OF SRE PRODUCTION**						
1	**Transition to the 400-kV voltage of the Porțile de Fier - Reșița - Timișoara - Săcălaz - Arad axis.** ***Stage I:*** **Expansion 400 kV station Porțile de Fier; 400 kV OEL Perțile de Fier - Reșița; 400 kV station Reșița**	2018	2021	delayed		Delay in the issuance of Government Decision for expropriation and removal from the forestry fund	
1.1	**400 kV OEL Porțile de Fier - Reșița**		2021		ongoing		
1.2	**400 kV station Reșița**		2021		Termination of contract caused by the contractor's insolvency		

Crt. No.	Project name	Estimated PIF year during 2016-2025	Estimated PIF year during 2018-2027	Stage compared to 2016-2025	Project stage during 2018-2027	Reason for shift/postponement of PIF deadline	Remarks
2	**Transition to the 400-kV voltage of the Porțile de Fier - Reșița - Timișoara - Săcălaz - Arad axis. Stage II: 400 kV d.c. OEL Reșița - Timișoara - Săcălaz + 400 kV station Timișoara + 110 kV station Timișoara**	2023	2023	Within time limit		Correlated with Stage I	
2.1	**Reengineering 110 kV station Timișoara and transition to 400 kV of the Porțile de Fier - Anina - Reșița - Timișoara - Săcălaz - Arad axis, stage II: 400 kV station Timișoara**		2022			Correlated with Stage I	
2.2	**400 kV d.c. OEL Reșița - Timișoara - Săcălaz**		2023			Correlated with Stage I	
3	**Transition to the 400-kV voltage of the Porțile de Fier - Reșița - Timișoara - Săcălaz - Arad axis. Stage III: 400 kV d.c. OEL Timișoara - Săcălaz - Arad + 400 kV station Săcălaz + expansion station 400 Arad**	2023	2027	delayed		Correlated with Stage I	
3.1	**400 kV d.c. OEL Timișoara - Săcălaz - Arad**		2025				
3.2	**400 kV station Săcălaz and reengineering 110 kV station Săcălaz**		2027				
3.3	**Expansion 400 kV station Arad and reengineering 110 kV station Arad**		2025				
4	**400 kV OEL for the Reșița (Romania) - Pancevo (Serbia) interconnection (new line)**	2017	2018	delayed	PIF 2018 March	Delay in the issuance of Government Decision for expropriation and removal from the forestry fund	
5	**400 kV OEL Gădălin - Suceava (new OEL)**	2023	2027	delayed		Resuming permitting/agreements	
6	**400 kV OEL Suceava - Bălți (new OEL - for the segment on Romanian territory)**	2023		Within time limit	ongoing - design	Completion as per agreement with Moldelectrica	

Crt. No.	Project name	Estimated PIF year during 2016-2025	Estimated PIF year during 2018-2027	Stage compared to 2016-2025	Project stage during 2018-2027	Reason for shift/postponement of PIF deadline	Remarks
7	400 kV OEL s.c. Oradea Sud - Nadab - Bekescsaba, Final stage: section between pillars 1-42 (48) of 400 OEL kV Oradea Sud - Nădab		2019	Within time limit	Work in course of execution	Impossibility to conclude an execution contract until 04.10.2017. Settlement of issues related to the damages of land owners for 2+3=5 pillar terminals.	PIF: November 2008. Included in chapter. B Other investments and level of branches and executive managers
G	Integrated platform for NPS operational management + Replacement of EMS SCADA AREVA system components	2020	2025	delayed			
H	Measuring data management and metering system for the power on the wholesale market	2018	2021	delayed		Modification of the technical solution	
J	**IT AND TC SYSTEMS MANAGEMENT**						
K	**CRITICAL INFRASTRUCTURE**	2016	2018	delayed			

Compared with the Plan approved in 2016, PDRET 2018-2027 provides nine new investment projects from the category of those that have as objective the reengineering of the existing RET, the security of supply of consumption and the integration of the production from SRE and new plants, as presented in the table below:

Crt. No.	Work code	Project name	PIF estimated year
	A.33	Modernization of 220/110/20 kV Vetiş station – primary equipment	2021
	A.54	Modernization of the power supply at the premises of UNO DEN	2019
	A.55	Installation of two modern compensation means for reactive power in the stations 400/220/110/20 kV Sibiu Sud and 400/220/110/20 kV Bradu	2023
	A.56	Mobile cells of 110 kV, 220 kV and 400 kV	2019
	A.57	Replacement of 3 BC units 100 MVAR 400 kV in the stations from Arad, Smârdan and București Sud.	2020

Crt. No.	Work code	Project name	PIF estimated year
	A.58	Equipment of the compensations reels and transformation units that are not equipped yet with monitoring installations	2020
	C.3	Replacement of AT3-ATUS-FS 400/400/160 MVA 400/231/22 kV from 400/220 kV Porțile de Fier station	2020
	C.4	Increase of security in operation of the network area from Argeș-Vâlcea, implementation of station 400 kV Arefu and mounting of AT 400 MVA, 400/220 kV	2022
	D.4	Transition of the OEL 400 kV Isaccea - Tulcea Vest from simple to double circuit	2027

Monitoring of the annual investment plans of the transmission system operator and distribution system operators

Monitoring the implementation of the OTS investment plan for 2018

From the analysis of the investment projects carried out by the TSO compared to the *projects planned for 2018 at the beginning of the regulatory period*, as shown by the investment activity reporting templates and the information submitted by TSO, we have the following:

	Total no. of projects with planned PIF	**Planned value real terms of year 2014**	**Planned value nominal terms of years 2018**	**Value obtained**	**Degree of fulfilment**
Total of which	22	841,854,000	887,058,261	235,739,485	27%
Transmission service	19	822,546,000	866,713,497	231,240,578	27%
System service	3	19,308,000	20,344,764	4,498,907	22%

The projects planned in 2018 are laid down in the following table:

Crt. no.	**Investments planned and implemented in year 2018**	**Planned value**	**Obtained value**	**PIF stage**	**Reasons for delays**
1	Reengineering of the 400/220/110/20 kV Bradu station	57,000,000	31,418,230	PIF completed	
2	Reengineering of the 220/110/MT kV Turnu Severin Est station	45,000,000		PIF delayed	- necessity to implement the modifications occurred in the legislation related to procurement; - long duration of procurement procedures. (approx. 1 year). - delays in design (PT+CS) (3 months), initiation

Crt. no.	Investments planned and implemented in year 2018	Planned value	Obtained value	PIF stage	Reasons for delays
					of the works (4 months) and execution of the works (9 months). Ongoing contract, concluded on 20.10.2016
3	Reengineering of the 400/110/20 kV Domnești station	55,000,000		PIF delayed	- necessity to update the PT and CS under own powers (completed on 30.03.2016) due to the absence of the tenderers from the tender organized by ST Bucharest - long duration of the procurement procedure (tender for the execution of the works cancelled because of non-compliant offers) - approximately 2 years (May 2015-February 2017) - execution contract concluded on 07.02.2017 - delays of 12 months of the contractor
4	Replacement of the AT and Trafo in substations (stage II)	37,800,000	11,594,347	PIF completed	
5	Modernization of the 220/110/20 kV Arefu substation	54,000,000		PIF delayed	- update of the design documentation according to the legislative changes; - long duration of approval at management level within CNTEE Transelectrica S.A. (approx. 2 years) - long duration of the procurement procedure – 1.3 years (August 2015-November 2016) - savings during the tender - contractor's delay (approx. 2 years) - ongoing contract, concluded on 15.11.2016
6	Modernization of the 220/110 kV Răureni substation	35,000,000		PIF delayed	- update of the design documentation according to the legislative changes; - long duration of approval at management level within CNTEE Transelectrica S.A. (approx. 2 years) - long duration of the procurement procedure 1.4 years (August 2015-December 2016) - contractor's delay (approx. 2 years) - ongoing contract, concluded on 28.12.2016
7	Reengineering of the 220/110 kV Hășdat station	60,000,000		PIF delayed	- amendment of the legislation on procurement, - long duration of the designing process (1 year 7 months) and procurement procedures (1 year) (March 2017-March 2018). Ongoing contract, concluded on 27.03.2018

Crt. no.	Investments planned and implemented in year 2018	Planned value	Obtained value	PIF stage	Reasons for delays
8	Modernization of the command-control-protection system of the 220/110/20 kV Sardaneşti station	25,000,000	11,104,844	PIF completed	
9	Modernization of the command-control-protection-metering system of 220, 110 kV and reengineering of medium voltage and c.c. and c.a. internal services of the 220/110(/20) kV Ghizdaru station	10,761,000		PIF delayed	- modification of the technical solution
10	Reengineering of the 400 kV Isaccea station – Stage I: Replacement Compensation reels and corresponding cells	41,390,000		PIF delayed	- long duration of the designing process – design contract concluded in September 2013, extended until October 2015; - amendment of the legislation on public procurement in year 2016 that led to the delay of organization of the tender for the procurement of works; -ongoing contract, concluded in September 2016
11	Expansion of the 400 kV Gura Ialomiţei station with two cells, OEL 400 kV Cernavodă 3 and OEL 400 kV Stâlpu	23,000,000		PIF delayed	- correlated with OEL Cernavodă - Stâlpu - the GD for the expropriation of the OEL Cernavodă -Stâlpu was issued in November 2017 (the documentation for the issuance of the GD was submitted in 2015) - the documentation for the tender procedure was submitted in February 2019
12	Transition from the voltage of 400 kV of the axis Porţile de Fier - Reşiţa - Timişoara - Săcălaz - Arad. Stage I: - Expansion of the 400 kV Portile de Fier station;- OEL 400 kV Porţile de Fier - (Anina) - Reşiţa; - 400/220/110 kV Reşiţa station.	200,000,000	701,108	PIF delayed	- contractor's insolvency. The contract has been denunciated in July 2017. From July to November 2017 - analysis and decision regarding the completion of the project through 2 procurement procedures: NFIP, contract concluded in May 2018 and open tender for the completion of the project – documentation submitted in May 2018 (rejected by ANAP 4 times). Opening of the tendering procedure in April 2019
13	Modernization of technological rooms (IT, Tc and security dispatchers) at Company level	16,858,000		PIF delayed	Re-analysis of the technical solution correlated with the new IT&C system (modernization of the electronic communication network)

Crt. no.	Investments planned and implemented in year 2018	Planned value	Obtained value	PIF stage	Reasons for delays
14	Reengineering of the 110 kV Bacau Sud and Roman Nord stations corresponding to the axis 400 kV Moldova	55,000,000	188,000	PIF partly completed	- the designing process has been performed again - long duration of the procurement procedure (changes of the legislation on public procurement)-1 year (Jan-Dec 2017) - ongoing contract, concluded on 14.12.2017 - final PIF estimated in 2021
15	Modernization of the 110 and (400) 220 kV installations from Focsani Vest station	5,000,000		PIF delayed	- long duration of the designing process (procurement of design services + designing process = 18 months February 2015-October 2016), procurement of execution of works= 12 months (Dec 2016-Dec 2017) - ongoing contract concluded on 11.12.2017
16	Reengineering of the 220/110 kV Craiova Nord station	35,000,000		PIF partly completed	- the designing process has been performed again - long duration of the procurement procedure (changes of the legislation on public procurement)-1 year (Jan-Dec 2017) - ongoing contract, concluded on 14.12.2017 - final PIF estimated in 2021
17	Replacement of the command-control-protection system in the 400 kV Tantareni station	9,500,000		Deliberately cancelled	Completed within the maintenance programme
18	Emergency centre in a location held by CNTEE Transelectrica S.A.	14,545,000		Deliberately cancelled	Ongoing re-analysis of the opportunity/necessity
19, 20	Other investment projects at executive and branch level – the transmission and system service	15,000,000	17,308,231		
21, 22	Other investment expenditure – the transmission and system service	1,000,000	21,417,286		
TOTAL			90,129,163	The projects completed from the plan of year 2018 represent 38.2% of the total completed, the rest representing recoveries from the plans of the previous years	

The following table presents completed parts of the projects provided by the plans of the previous years and additional works:

Crt. no.	Investments from previous and additional plans	Completed value	Stage and reasons for PIF
1	Reengineering of the 220;110/20 kV Campia Turzii station	63,243	
2	Modernization of the 110 kV and 20 kV Suceava substations	16,886,725	PIF 2018, deferred from 2017
3	Modernization of the 400/110/10 kV Cluj Est substations (deferred from 2017)	13,516,403	PIF 2018, deferred from 2017
4	Modernization of the 220/110 kV Dumbrava station	2,291,224	Partial PIF 2018, -long period of procurement of 1.1 years (May 2015-June 2016) -ongoing contract concluded on 06.06.2016 -contractor's delay of 18 months
5	Mounting of the videowall-type of displaying system installed in command rooms corresponding to DEC/DET dispatcher centres	3,692,883	PIF 2018, deferred from 2016
6	Mounting of optic fibre on the OEL 220 kV Fundeni - Brazi Vest - batch 1 (deferred from 2017)	2,396,915	PIF 2018, deferred from 2017
7	Connection of the stations Turnu Magurele, Mostistea, Stalpu, Teleajen to the optic fibre network of CNTEE Transelectrica - SA - batch 2 (deferred from 2017)	4,512,429	PIF 2018, deferred from 2017
8	Replacement of the trafos T3 and T4 110/10 kV, 25 MVA with transformers of 110/(20) 10 kV, 40 MVA in Fundeni substation	2,731	Increase of fixed fd, PIF completed in 2016
9	Interconnection OEL 400 kV Reşiţa (Romania) - Pancevo (Serbia) (deferred from 2016)	98,590,975	PIF 2018, deferred from 2016
10	Integrated security systems in stations and branches, DEN and DETs – Integrated system of security in substations, Stage IV	3,656,785	Partial PIF 2018, deferred from 2016
TOTAL		145,610,313	The recoveries for the projects from the plans of the previous years represent 61.8% of the completed total

Hereinafter it is presented the situation of other projects from previous plans that have not been initiated:

Crt. no.	Other delayed projects	Reasons for delays
1	Branching of the OEL 400 kV Isaccea - Varna and the OEL 400 kV Isaccea - Dobrudja in the station 400 kV Medgidia Sud Stage I – Expansion of the 400 kV Medgidia station	Delayed PIF the contractor (ELCOMEX) becomes insolvent and the contract is terminated in August 2017 - analysis and decision on the investment completion method; - launch in February 2018 of the NFIP procedure for the completion of the project; - Procedure cancelled by CS in June 2018; - resumption of the procurement procedures in August 2018: NFIP for GIS and open tender for the completion of the project - NFIP stage - approval of the final report on the procedure - LD stage -18.03.2019 opening of the tendering procedure
2	Modernization of CTSI Craiova through the communication protocol IEC 60870-5-104	Deliberately cancelled. Notice of cancellation ST Craiova 6101/07.05.2018
3	Consolidation of servers and data storage network (private cloud)	Delayed PIF. It requires a correlation with the project: Modernization of the messaging system CNTEE Transelectrica S.A.
4	Modernization of the messaging system CNTEE Transelectrica S.A.	Delayed PIF. From the market consultation it resulted the need to redefine the technical solution of the project
5	Implementation of an Electronic Archiving and Document Management system within CNTEE Transelectrica S.A.	Delayed PIF. Re-analysis of the technical solution correlated with the new IT&C system (modernization of the electronic communication network).
6	Transition to the voltage of 400 kV of the axis Portile de Fier-Resita- Timisoara-Sacalaz-Arad – Stage I - OEL 400 kV s.c. Porțile de Pier - Anina - Reșița	Delayed PIF. The delays in the issuance of the legal acts necessary to complete the OEL (GD for land expropriation – issuance duration March 2014-December 2016, GD for the forest fund – last version of the documentation submitted in October 2018) led to very long delays in the execution of the works; Contract suspended until the issuance of the GD on the forest fund

ANRE requested the TSO to analyse the impact of the postponement of PIF for investment projects in terms of NPS safety, integration of generation from power plants, increased interconnection capacity and technological losses in RET, and propose a set of measures to reduce this impact.

The causes that led to the delay of investment projects, as explained by the TSO, are internal and concern the poor management of the contracts, the late drafting of the tender specifications as well as external, such as:

- difficulties in obtaining permits and agreements (including environmental) for building permits;
- delays in obtaining land and removing it from the forest circuit;
- delays in public procurement of works;
- modification of the constructive solution in case of unfavourable opinions;
- the impossibility of simultaneous withdrawal of the network elements for the performance of works, in order to ensure the safety of the NPS operation.

The measures that the TSO has to apply to mitigate the impact of the non-implementation of the investment plan on the operation of the NPS are likely to correct, supplement and harmonize incident law by taking action with competent authorities, as well as optimize the investment activity of the company.

The measures taken by ANRE in order to increase the degree of completion of the RET investment program were compliant with the existing methodological provisions, namely the application of a negative correction of the regulated income for the following year, with the effect of reducing the average transport tariff. Also, the conditions for the approval of the investment programs and the investments made, as well as the procedure for their reporting, have been tightened.

The non-performance of RET investments leads to a deterioration of the performance indicators for the transmission service. For this reason, ANRE applied fines to TSOs in 2018.

Monitoring the completion of concessionaire distribution operators' investment plans

ANRE performs a yearly monitoring of the investment programs of distribution operators, in accordance with the provisions of the *Pricing Methodology for the Power Distribution Service*, approved by ANRE Order no. 72/2013, respectively by ANRE Order no. 169/2018 as further amended and supplemented, in force from the date of 21.09.2018 and the *Procedure regarding the development and approval of the investment programs of concessionaire economic operators providing power distribution services*, approved by the ANRE Order no. 8/2016 as further amended and supplemented.

Operators submit the programs at the beginning of the year, they are analysed by ANRE on the basis of the documents for the promotion of the works, following their compliance with the structure of works, the value previously approved for that year, the obligation to promote economically efficient investments. Based on ANRE's observations and requests for updating these programs, operators review the programs, including by making changes that are inherent to investment procedures, following which certain works are postponed and others are advanced. After the conclusion of the financial statements for the year, ANRE analyses, by comparison to the previously established program, the investment works completed by operators, accepting or, as the case may be, rejecting certain works that do not meet the necessary criteria provided by the regulatory framework for inclusion in the regulated tariff.

The investments made by the concessionaire electricity distribution operators in 2014 - 2018 compared to the undertaken plans, considering that the works for 2017 are still being analysed, are presented in the following table:

Nume distribuitor	Valoare totală investiţii pe surse de finanţare (lei)/ An	2014	2015	2016	2017	2018
Total tara	**Investiţii totale prognozate**	**1.408.949.349**	**1.520.966.829**	**1.627.855.489**	**1.787.403.717**	**2.065.530.356**
	surse proprii	1.013.986.094	1.240.066.761	1.373.497.997	1.545.348.708	1.814.902.506
	contribuţii financiare	394.963.255	280.900.068	254.357.492	242.055.009	250.627.850
	Investiţii realizate	**1.454.743.932**	**1.520.041.748**	**1.704.377.231**	**1.883.139.846**	**2.046.319.246**
	surse proprii	**969.535.211**	**1.135.015.343**	**1.245.255.083**	**1.455.397.154**	**1.707.012.981**
	contribuţii financiare	485.208.720	385.026.405	459.122.147	427.742.692	339.306.265
	Investiţii recunoscute	**831.070.235**	**1.017.385.707**	**1.124.641.907**	**1.401.475.679**	
Enel Distributie Muntenia	**Investiţii totale prognozate**	**272.835.603**	**249.134.678**	**252.645.069**	**274.013.257**	**329.799.106**
	surse proprii	180.184.461	161.596.866	169.724.310	193.708.065	251.172.512
	contribuţii financiare	92.651.142	87.537.812	82.920.759	80.305.192	78.626.594
	Investiţii realizate	**248.672.218**	**215.984.939**	**297.342.638**	**281.939.300**	**352.814.430**
	surse proprii	**166.995.964**	**137.994.102**	**162.344.913**	**177.879.043**	**244.793.545**
	contribuţii financiare	81.676.254	77.990.838	134.997.725	104.060.257	108.020.884
	Investiţii recunoscute	**127.013.942**	**124.301.881**	**127.755.878**	**164.112.227**	
Enel Distributie Banat	**Investiţii totale prognozate**	113.435.592	130.580.580	140.900.695	149.231.115	202.432.271
	surse proprii	**72.313.365**	**92.984.767**	**105.190.682**	**113.817.495**	**166.926.731**
	contribuţii financiare	41.122.227	37.595.813	35.710.013	35.413.620	35.505.540
	Investiţii realizate	**99.492.719**	**108.443.955**	**149.350.356**	**147.734.395**	**161.253.273**
	surse proprii	**66.769.654**	**77.794.436**	**97.964.559**	**104.427.161**	**129.302.631**
	contribuţii financiare	32.723.065	30.649.519	51.385.797	43.307.234	31.950.642
	Investiţii recunoscute	**55.824.169**	**66.768.358**	**76.491.282**	**93.577.104**	
Enel Distributie Dobrogea	**Investiţii totale prognozate**	120.711.413	127.395.353	141.618.268	149.068.596	195.314.312
	surse proprii	**65.539.109**	**76.609.455**	**93.357.620**	**102.332.269**	**149.555.603**
	contribuţii financiare	55.172.304	50.785.898	48.260.648	46.736.328	45.758.709
	Investiţii realizate	**108.474.749**	**94.106.967**	**133.509.247**	**121.297.661**	**163.208.931**
	surse proprii	**61.816.565**	**64.489.997**	**86.171.024**	**93.626.609**	**132.413.888**
	contribuţii financiare	46.658.184	29.616.970	47.338.223	27.671.052	30.795.042
	Investiţii recunoscute	**49.724.106**	**57.340.329**	**71.608.189**	**83.015.952**	
CEZ Distributie	**Investiţii totale prognozate**	204.317.556	194.276.507	194.445.974	197.681.012	204.634.789
	surse proprii	**155.055.396**	**161.843.711**	**162.879.085**	**166.963.982**	**174.378.126**
	contribuţii financiare	49.262.160	32.432.796	31.566.889	30.717.030	30.256.662
	Investiţii realizate	**211.733.113**	**201.777.980**	**200.800.862**	**216.652.558**	**229.242.168**
	surse proprii	**155.055.639**	**161.853.684**	**166.211.011**	**171.588.532**	**181.988.542**
	contribuţii financiare	56.677.473	39.924.296	34.589.851	45.064.026	47.253.626
	Investiţii recunoscute	**139.757.565**	**156.485.357**	**164.236.351**	**170.604.451**	
E.ON Moldova Distributie	**Investiţii totale prognozate**	173.382.141	183.513.064	162.914.730	176.402.748	173.392.833
	surse proprii	**173.382.141**	**183.513.064**	**162.914.730**	**176.402.748**	**173.392.833**
	contribuţii financiare	-	-	-	-	-
	Investiţii realizate	196.355.397	208.162.093	210.272.327	232.463.779	230.533.545
	surse proprii	**155.691.001**	**169.632.197**	**174.094.023**	**172.335.225**	**182.518.958**
	contribuţii financiare	40.664.395	38.529.896	36.178.304	60.128.554	48.014.587
	Investiţii recunoscute	**142.558.539**	**151.230.171**	**146.533.115**	**167.253.086**	
FDEE Electrica Distributie Muntenia Nord	**Investiţii totale prognozate**	185.098.622	245.720.845	270.936.460	311.408.335	359.848.666
	surse proprii	**117.221.622**	**180.350.659**	**215.037.277**	**262.525.496**	**299.368.322**
	contribuţii financiare	67.877.000	65.370.186	55.899.183	48.882.839	60.480.345
	Investiţii realizate	194.552.449	195.724.577	193.518.695	267.612.025	322.430.775
	surse proprii	**120.511.911**	**144.903.430**	**159.971.460**	**240.210.954**	**293.587.902**
	contribuţii financiare	74.040.538	50.821.147	33.547.236	27.401.072	28.842.873
	Investiţii recunoscute	**109.149.493**	**132.769.343**	**157.915.062**	**232.428.860**	
FDEE Electrica Distributie Transilvania Nord	**Investiţii totale prognozate**	196.730.000	193.689.440	234.085.464	269.583.552	300.314.880
	surse proprii	**129.780.000**	**193.689.440**	**234.085.464**	**269.583.552**	**300.314.880**
	contribuţii financiare	66.950.000	-	-	-	-
	Investiţii realizate	**183.238.419**	**255.701.529**	**292.805.345**	**317.196.255**	**297.545.941**
	surse proprii	**120.478.435**	**194.431.718**	**236.663.516**	**253.965.560**	**296.129.544**
	contribuţii financiare	62.759.984	61.269.811	56.141.829	63.230.695	1.416.397
	Investiţii recunoscute	**115.831.651**	**181.379.802**	**230.409.024**	**251.795.908**	
FDEE Electrica Distributie Transilvania Sud	**Investiţii totale prognozate**	142.438.421	196.656.362	230.308.829	260.015.102	299.793.500
	surse proprii	**120.510.000**	**189.478.800**	**230.308.829**	**260.015.102**	**299.793.500**
	contribuţii financiare	21.928.422	7.177.562	-	-	-
	Investiţii realizate	**212.224.868**	**240.139.708**	**226.777.761**	**298.243.873**	**289.290.183**
	surse proprii	**122.216.042**	**183.915.779**	**161.834.577**	**241.364.071**	**246.277.970**
	contribuţii financiare	90.008.826	56.223.928	64.943.183	56.879.802	43.012.213
	Investiţii recunoscute	**91.210.771**	**147.110.466**	**149.693.005**	**238.688.091**	

From the data presented in the table we can see that in 2017, at country level, the degree of completion of the investment programs forecast by the concessionaire distribution operators, from own sources, was 94.4%, and in 2018 it continued to remain above 94%.

In order to increase the efficiency of the expenditure of funds allotted for investments, ANRE approved by **Order no. 8/2016** *Procedure regarding the development and approval of the investment programs of concessionaire economic operators providing power distribution services.* Through the **ANRE Order no. 34/2018,** the Procedure has been amended and supplemented in the meaning that it has been added the obligation of the DO to complete at least 95% of the total value of the annual investment program approved by ANRE.

The *Procedure* imposed the structure of the investment works to meet the condition according to which at least 90% of the total value of the investment program approved by ANRE should represent the value of the works that had as result fixed assets belonging to the grids and only 10% should be allotted to the investment in equipment, its provisions being applied starting with the investment program corresponding to year 2017.

The average countrywide level of investment recognition in the distribution tariff was 90.7% in 2017 with variations between operators from 81% for Dobrogea e-Distribution to 102% for Oltenia Energy Distribution.

The type of works carried out in the distribution grids in 2018 is presented in the following table:

Type	**Category**	**Value [Ron]**
	TOTAL, of which:	**1,707,012,981**
A	**ESSENTIAL - Total (A1+A2+A3+A4)**	**428,572,087**
A1	Reengineering and modernization of existing lines/stations and transformers which are overloaded, considered workplaces with special conditions from an occupational safety standpoint and which have unsuitable technical parameters	351,201,095
A2	Replacement of existing equipment that is worn down and obsolete, for which there are no parts available and no proper maintenance works can be carried out; replacement of equipment so as to observe environmental conditions	71,704,718
A3	Acquisition of equipment in order to ensure occupational security	5,666,273
A4	Acquisition of equipment in order to ensure occupational security	0
B	**NECESSARY - Total (B1+B2+B3+B4+B5+B6)**	**1,149,845,590**
B1	Replacement of existing equipment that is written off and whose technical parameters no longer comply with current norms and which no longer ensure the observance of performance and quality parameters provided by the law	33,059,391
B2	Replacement of equipment, reengineering and modernization works for decreasing the CPT, replacement of measurement groups	431,448,012
B3	Improvement in the quality of the distribution service	539,173,328
B4	Creation of new capacities, expansion of the existing grid so as to supply power to new users	49,372,092
B5	Implementation of the smart metering systems	64,641,259
B6	New connections, including those imposed by the primary law; consolidation of the network for the new connections, as well as for the part uncovered by the connection tariff	32,151,509

C	**JUSTIFIABILE - Total (C1+C2+C3)**	**128,595,304**
C1	Work equipment	41,867,618
C2	Improvement of working conditions	59,218,875
C3	Taking over power distribution capacities from third parties	292,912
C4	Modernization works from maintenance	27,215,899

As it results from the table, the total value of the investment works completed in 2018, from own sources, by concessionaire distribution operators, the investment works in RED represent 93.75 %.

Establishing the need for investment and maintenance work in distribution grids at an extent that ensures their safety, reliability and efficiency is the exclusive responsibility of distribution operators. They can and are legally obliged to set up investment and maintenance programs based on analyses and valuations carried out within the asset management activity.

Other relevant aspects of cross-border cooperation

(EU) Regulation 2015/1222 for the establishment of some guidelines on capacity allocation and congestion management (CACM) provides for continuous implicit allocation as a capacity allocation method within the IDM time intervals, the XBID - European Cross Border Intraday Initiative solution being part of the European Commission's objective of establishing a continuous cross-border trading environment, transparent and efficient on the intra-day horizon, under the accelerated growth of intermittent production capacity (based on renewable resources) recorded in recent years. This solution is based on a common IT system that connects local trading systems operated by the XBID electricity exchanges and takes into account the cross-border transmission capacities provided by the project and transmission system operators for the continuous implicit allocation.

XBID, the cross-border intra-day market solution was launched on 12/13 June 2018, in one year of operation being established more than 16 million transactions. The operational countries from the first launch are Belgium, Denmark, Germany, Estonia, Finland, France, Latvia, Lithuania, Norway, Holland, Austria, Portugal, Sweden and Spain. The preparation and testing are now in progress to **launch the second wave,** that is about to take place towards the end of quarter IV of year 2019. The following countries shall be integrated in the coupled region already existing on the intra-day horizon: Bulgaria, Croatia, Czech Republic, Hungary, Poland, Romanian and Slovenia[2].

The CORE Capacity Calculation Region was established by the ACER decision of 17 November 2016. According to it, regulatory authorities with competences to approve decisions regarding the CORE Capacity Calculation Region are: ACM (The Netherlands), AGEN-RS (Slovenia), ANRE (Romania),

[2] In August 2017, Transmission System Operators and Designated Electricity Market Operators from Austria, the Czech Republic, Germany, Hungary and Romania, namely 50Hertz, APG, ČEPS, EPEX SPOT, EXAA, HUPX, MAVIR, Nord Pool, OPCOM , OTE, TenneT and Transelectrica, signed a **Memorandum of Understanding on the establishment of a local project for the implementation of the cross-border intra-day market solution (XBID),** so as to couple intra-day electricity markets. Subsequently, the Transmission and System Operator and the Power Market Operator in Croatia (HOPS, CROPEX) joined the Memorandum. All project participants expressed their interest in implementing continuous cross-border trading and introducing implicit allocation of intra-day cross-border transport capacities across the Czech Republic-Germany, Czech Republic-Austria, Austria-Hungary, Hungary-Romania and Hungary-Croatia borders. The Parties established a Local Implementation Project (**LIP 15**) aimed at meeting the requirements of the XBID Cross-border Market at EU level.

CRE (France), CREG (Belgium), E-Control (Austria), ERU (Czech Republic), HEA (Hungary), HERA (Croatia), ILR (Luxemburg), URE (Poland) and URSO (Slovakia). **The Memorandum of Understanding between all authorities in the Core Capacity Calculation Region** was signed in September 2017. The Memorandum is relevant first of all for implementing the provisions of the Regulation on Capacities and Congestion Management (CACM) and for the Regulation establishing directions on capacity allocation on the long-term market (FCA), but also any other codes and guidelines of the European electricity grid established or to be established in accordance with the third power package which are aimed at decision-making on the proposals submitted by transmission and system operators (TSOs) or the market operators in the field of electricity (OPEED).

Considering ACER Decision no. 6/2016 on the approval of capacity calculating regions, **Romania, Bulgaria and Greece** signed the **Memorandum of Understanding between all Regulatory Authorities in the Southern South-East Capacity Calculation Region**, pursuing the same objectives as the MoU CORE.

During 2018 they have been approved in the application of the provisions of the network codes and their requirements for approval at European or regional level the following decisions and orders:

- **ANRE Decision no. 70/17.01.2018** for the approval of the *Methodology for the supply of data relation to production and consumption for the establishment of the common grid model for the periods of allocation of long-term capacities* (art.17 FCA),
- **ANRE Decision no. 71/17.01.2018** for the approval of the *Proposal of all transmission and system operators regarding the amendment to the capacity calculating regions*, approved by ACER Decision no. 06 from 17 November 2016 (CACM),
- **ANRE Decision no. 662/25.04.2018** regarding the approval of the *Proposal of the TSO in the capacity calculation region of SE Europe to designate the rights of long-term transmission pursuant to article 31.3 of (UE) Regulation 1719/2016,*
- **ANRE Decision no. 663/25.04.2018** regarding the approval of the *Proposal of the TSO in the capacity calculation region of SE Europe for last resort procedures* (CACM, art.44),
- **ANRE Decision no. 1165/04.07.2018** for the approval of the document ”*Proposal of all transmission and system operators for the methodology on the common grid model in accordance with the provisions of art. 18 of (EU) Regulation 2016/1719 of the Commission from 26 September 2016 for the establishment of the guidelines with regard to the allocation of the capacities on the long-term market*”,
- **ANRE Decision no. 1166/04.07.2018** for the approval of the document ”*Proposal of all TSOs from the CORE capacity calculating region for the modification of the current regional structure of the rights to long-term transmission pursuant to article 4 (12) of the (EU) Regulation 2016/1719 of the Commission*”,
- **ANRE Decision no. 1486/12.09.2018** for the approval of the document ”*Proposal of all transmission and system operators for the methodology regarding the common grid model elaborated in accordance with the provisions of art. 67 para. (1) and art. 70 para. (1) of (EU) Regulation 2017/1485 of the Commission from 02 August 2017 on the establishment of the guidelines regarding the operation of the power transmission system*”,
- **ANRE Decision no. 1487/12.09.2018** regarding the *Proposal of all TSOs for the establishment of the RFP blocks for the Continental Europe Synchronous Area in accordance with article 141 para. (2) of (EU) Regulation 2017/1485 of the Commission from 02 August 2017 on the establishment of some guidelines regarding the operation of the power transmission system,*

- **ANRE Decision no. 2046/19.12.2018** regarding the approval of the document "*Proposal of all TSOs who perform the process of replacement of reserves for the implementation framework of an European platform for the balancing exchange of energy from the replacement reserves in accordance with article 19 of (EU) Regulation 2017/2195 of the Commission from 23 November 2017 on the establishment of some guidelines regarding the balancing of the energy system*".
- **ANRE Decision no. 28/31.01.2018** for the approval of the *Proposal of all OPEEDs for the products that can be taken into consideration by OPEEDs in the process of day-ahead single coupling* - (CACM, art. 40);
- **ANRE Decision no. 29/31.01.2018** for the approval of the *Proposal of all OPEEDs for the products that can be taken into consideration by OPEEDs in the intra-day coupling process* (CACM, art. 53);
- **ANRE Decision no. 30/31.01.2018** for the approval of the *Proposal of all OPEEDs for the backup methodology* (CACM, art 36),

Furthermore, during 2018 they have been developed the following draft decisions:

- Draft decision for the approval of the proposal of all transmission and system operators regarding the second amendment to capacity calculation regions, approved by ACER Decision no. 06 from 17 November 2016,
- Draft decision for the approval of the document "*Proposal of the transmission and system operators from the capacity calculation region SEE regarding the common methodology of the intra-day and day-ahead capacity calculation in accordance with the provisions of art. 21 of (EU) Regulation 2015/1222 of the Commission from 24 July 2015 on the establishment of some guidelines on capacity allocation and congestion management*",
- Draft decision for the approval of the document "*Development at regional level by transmission and system operators from the CORE capacity calculation region, of the common methodology of day-ahead capacity calculation in accordance with the provisions of art. 20 and the following of (EU) Regulation 2015/1222 of the Commission from 24 July 2015*",
- Draft decision for the approval of the document *"Development at regional level, by transmission and system operators from the CORE capacity calculation region, of the common methodology of intra-day capacity calculation in accordance with the provisions of art. 20 and the following of (EU) Regulation 2015/1222 of the Commission from 24 July 2015*".

and the following document have been analysed:

- Proposal by all of the TSOs of a common calculation method for planned changes resulting from the single coupling of the day-ahead markets – (EU) Regulation 2015/1222, art. 43 (1);
- Proposal by all of the TSOs of a common calculation method for planned changes resulting from the single coupling of the intra-day markets – (EU) Regulation 2015/1222, art. 56 (1),
- Proposal by all of the TSOs from the CORE CCR of a methodology regarding the coordinated new dispatching and countertrading – (EU) Regulation 2015/1222, art. 35 (1),
- Proposal by all of the TSOs from the SEE CCR of a methodology regarding the coordinated new dispatching and countertrading – (EU) Regulation 2015/1222, art. 35 (1),
- Annex specific to the regions for the CORE capacity calculation region to the Harmonized Allocation Rules of long-term transmission rights – (EU) Regulation 2016/1719, art. 52.

As regards the integrated operation of energy regional markets, on the date of 21 December 2018, the regulatory authorities ANRE, BnetzA, E-Control, ERU, HEA, URSO and URE solicited, through a

common letter addressed to the transmission and system operators and energy market operators designated from the states in question, a new launch of the interim project for the coupling of the markets based on the net capacity of transfer, between DE, AT, PL and 4MMC (the Project DE-AT-PL-4MMC), to further develop the regional integration of day-ahead markets.

The timely implementation of the Project DE-AT-PL-4MMC shall introduce the benefits of the implicit allocation for cross-border daily capacities on the HU-AT, AT-CZ, CZ-DE, DE-PL, CZ-PL and PL-SK borders, precisely before the Project of Flow Based Market Coupling (FBMC) comes into force. As such, the coupling project DE-AT-PL-4MMC might allow a gradual transition on the borders in question, from the explicit allocation based on NTC to the implicit flow-based allocation, offering a greater transparency for the market during the external testing of the FBMC.

3.1.5. Observance of EU law

Observance of ACER and EC decisions

In accordance with the provisions of Law no. 160/2012 on the organization and operation of ANRE, namely art. 9, paragraph (1), letter w), ANRE observes and implements all relevant, legally binding decisions of the Agency for the Cooperation of Energy Regulators - ACER - and the European Commission, and to the extent that they concern ANRE competences, the decisions of the European Commission issued according to art. Article 39 (8) of Directive 2009/72/EC of the European Parliament and Council of 13 July 2009 on common norms for the internal power market and for repealing Directive 2003/54/EC shall apply within 60 days of upon their entry into force.

The relevant decision in this context issued by ACER in year 2018 were:

- **ACER Decision no. 4/2018** regarding the *Proposal of all of the TSOs regarding the opening and closing hours of the gate of the cross-zonal intra-day market* (CACM, art.59),
- **ACER Decision no. 8/2018** regarding the *Proposal of all of the OPEEDs for the algorithm of coupling through the Price and for the algorithm of trading through continuous correlation, incorporating as well the proposal of the TSOs and OPEEDs for a common set of requirements* (CACM, chapter 4 and 6),
- **ACER Decision no. 10/2018** regarding the *Proposal of the TSOs from the CORE CCR for the Procedures of Last Resort* (CACM art. 44).

During 2018, they have been continued the activities regarding the enforcement of the provisions of (EU) Regulation no. 2011/1227 of the European Parliament and Council from 25 October 2011 regarding the retail energy market integrity and transparency (REMIT) and the (EU) Enforcement Regulation No. 1348/2014 of the Commission on data reporting, for the enforcement of art. 8 paragraphs (2) and (6) of REMIT as follows:

- **steps to ensure the operational reliability of REMIT data -** completion of the project of establishment of operational security measures to be obtained by ANRE the certification necessary from the part of ACER in order to be able to download, store and process REMIT data,
- **verification and update of the registration data of the participants on the market in the National Register –** On the basis of the provisions of the above mentioned European regulations, of the **ACER Decision no. 1/2012** and the **ANRE Order no. 1/2015,** the information from the National Register have been further verified and updated, and they have been taken actions for the awareness of the economic operators already registered in the National Register for the purpose of compliance with the

obligations they have in accordance with the *Procedure of registration of participants on the energy wholesale market in the National Register of participants on the energy wholesale market*, approved by Order no. 1/2015. During 2018 they have been registered **25 new participants on the energy and natural gas wholesale markets** according to REMIT requirements. At the end of 2018, ACER codes were held by a number of **691** participants on the energy and natural gas wholesale market and **3** RRM-type of entities (Registered Reporting Mechanisms): Opcom SA, Bursa Română de Mărfuri and SNTGN TRANSGAZ S.A., third parties authorized by ACER to report trading and fundamental data, in accordance with (EU) Enforcement Regulation no. 2014/,

- **actions for the guidance and awareness of the participants on the market with regard to the interdictions and obligations stipulated by REMIT -** In 2018, ANRE continued to offer guidance to the participants on the market who solicited clarifications with regard to the enforcement method of REMIT provisions on: the awarding of the ACER code, the reporting method of trading data and fundamental data, the exceptions from the reporting provided for by the (EU) Enforcement Regulation no. 1348/2014 of the Commission. Moreover, it has been published additional information on ANRE website, in the dedicated section, https://www.anre.ro/ro/energie-electrica/informatii-de-interes-public/info-remit, on: the obligations related to transparency established under art. 4 of REMIT, the enforcement of art. 5 para. (2) of **ANRE Order no. 1/2015,** and information related to the ACER notification platform. The action for the awareness of the participants on the market with regard to their obligations related to transparency established under art. 4 of REMIT has been carried out in parallel with the concrete analysis of the compliance with the REMIT provision on *the efficient and timely publishing* of the privileged information and manner in which the data is transmitted by the primary owners of the data, according to (EU) Regulation no. 2013/543,
- **participation within ACER working group and collaboration with other regulatory authorities -** it was ensured the participation in the working groups organized at ACER and CEER level for the national enforcement of REMIT provisions. The activities carried out concerned the pursuit of the enforcement phases at national level for year 2018 and the fulfilment of the obligations of ANRE, of the participants on wholesale market and of the persons who complete transactions under a professional title,
- **the assessment of the persons who complete transactions under a professional title -** being given the role given by REMIT to the persons professionally arranging transactions (PPAT), respectively of first level of supervision of the behaviour of the participants on the market, ANRE started a process for the assessment of the manner in which they comply with their obligation provide for by art. 15 of REMIT and detailed in the ACER guide for the enforcement of REMIT, respectively for the establishment of some efficient mechanisms and procedures for the detection of any situations likely to constitute a possible abuse on the market, according to REMIT,
- **signalling the suspicions of REMIT violation on the Notification platform of ACER -** the abuse on the market may be signalled by PPATs, the regulatory authorities in the field of energy, the financial authorities, as well as by any other interested party on the Notification platform developed by ACER for this purpose on the REMIT Portal (https://www.acer-remit.eu/np/home), using the framework format of notification established by ACER - Suspicious Transaction Report (STR). As a consequence, the responsible participants on the market may use this means of notification when they have arguments to reasonably motivate a suspicion of abuse on the market (respectively the violation of art. 3 regarding the banning of the transactions based on privileged information, art. 8 regarding the reporting of the data, art. 9 regarding the registration of the participants to the market and art. 15 regarding the obligations of the persons who perform transaction under a professional title). On the ANRE website they are provided additional details in relation with this subject. Moreover, the REMIT Notification Platform may be used by the participants on the energy wholesale market to fulfil the

obligations they have in accordance with the provisions of art. 3 para. (4) point (b) and art. 4 para (2) of REMIT,

- **analysis of the cases of violation of REMIT –** they have been completed preliminary analyses of the STR-type of notices transmitted by ANRE in accordance with the principles, procedures, criteria and stages described in the indicative documents of ACER. In the process of preliminary analysis of the notified cases, the ANRE representatives collaborated permanently with ACER, with the participants on the market and Opcom S.A. and CNTEE Transelectrica S.A. Up to the present, they have been notified **9 cases related to suspicions of violation of the provisions of art. 3 and/or 5 of REMIT**, during the year analysed being notified **3 cases.** The notified cases are in different stages of analysis, from the preliminary analysis to their forwarding to the investigation service. For 3 cases, ANRE collaborated with other institutions, forwarding to them the results of the preliminary analyses,
- **collaboration with other institutions for the coordinated enforcement of REMIT –** ANRE collaborated with the Competition Council and the Financial Supervisory Authority based on the Protocols of collaboration concluded with the two institutions, for the purpose of the coordinated approach of the methods of ensuring the enforcement of the REMIT provisions and for the purpose of monitoring the manner in which energy markets function, in order to identify the situations of violation of the specific legislation.

Observance of the provisions of Community law by transmission system operators, distribution system operators, system owners and economic operators in the sector

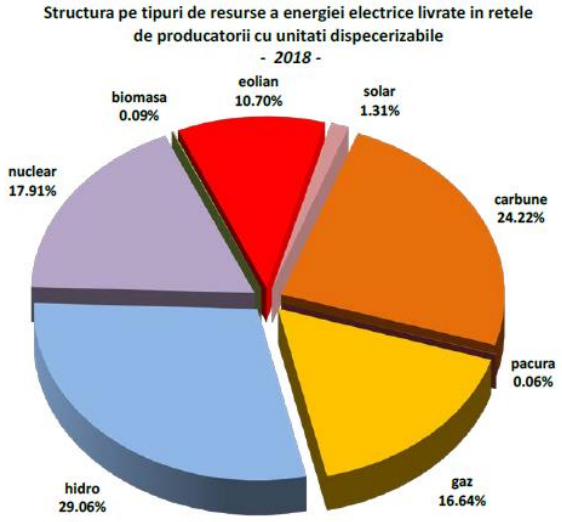
The requested aspects were presented in chapter 2.1.1. Unbundling of activities.

3.2. Promoting competition

3.2.1. Electricity wholesale market

Structure of the energy produced in dispatchable units

Based on the provisions of the electricity wholesale market monitoring methodology, approved by ANRE Order no. 67/2018 – PAN Monitoring Methodology - the monthly electricity generation sector monitoring process referred to the activity of the producers of electricity who own dispatchable units, irrespective of the type of primary resource used, from the perspective of their participation in the electricity market.



From the data collected monthly from a number of 124 DU producers for electricity from hydro, nuclear, thermal, wind, photovoltaic and biomass sources, 61.97 TWh of electricity was produced in 2018, compared to 61.32 TWh produced in 2017, while the electricity supplied by the respective producers in the grids represented 58.31 TWh, compared to the 57.48 TWh supplied in the previous year by the dispatchable producers.

Starting from the quantities of electricity reported according to the PAN Monitoring Methodology, we present the dispatchable producers' situation according to the electricity produced in their own power plants in 2018, compared to 2017.

Dispatchable producer	Electricity produced in 2018 (GWh)	Electricity produced in 2017 (GWh)	Evolution 2018 / 2017 (%)
Hidroelectrica SA	17,232	14,039	▲22.7
Complexul Energetic Oltenia SA	14,143	14,933	▼ 5.3
SN Nuclearelectrica SA	11,377	11,509	▼ 1.1
OMV Petrom SA	4,848	3,645	▲33.0
Electrocentrale Bucureşti SA	2,592	2,841	▼ 8.8
Enel Green Power Romania SRL	1,226	1,357	▼ 9.7
Romgaz SA	1,165	1,864	▼37.5
Complexul Energetic Hunedoara SA	960	1,199	▼19.9
Tomis Team SRL	646	777	▼16.9
CET Govora SA	525	723	▼27.4
Ovidiu Development SRL	479	569	▼15.8
Verbund Wind Power SRL*	431	232	▲85.8
EDPR Romania SRL	426	522	▼18.4
Veolia Energie Prahova SRL	408	461	▼11.5
Other dispatchable producers	5,515	6,653	▼17.1

(with market shares below the 0.5% threshold)			
TOTAL	**61,973**	**61,324**	**▲ 1.1**

* in 2017, the producer was included in the category "Other dispatchable producers (with market shares below the 0.5% threshold)"
Source: Monthly reports of dispatchable electricity producers – ANRE processing –

The production sector is dominated in 2018 as well by the main 3 producers of energy from conventional sources, Hidroelectrica, CE Oltenia and Nuclearelectrica, which provide together, approx. 69% of the energy produced in dispatchable units. Market shares of more than 5% of the electricity produced were achieved as well by the producer OMV Petrom, who maintained its position from previous years. Other 3 producers reached quantities of over 1 TWh, among which the wind generator Enel Green Power, close to the previous year.

The highest market share, both in terms of electricity produced, and in terms of electricity supplied in the network, is held by the producer Hidroelectrica (27.8% for the electricity produced and 29.02% for the electricity supplied), who, with the 17.2 TWh produced in its hydro energetic groups, surpassed the producer CE Oltenia in 2018, with approx. 3 TWh. Also, given the high hydraulicity from the first months of the year, the total production obtained in 2018 was close to that of 2016, when Hidroelectrica produced a quantity of 17.57 TWh. Comparing the production of the same month from 2016-2018, it is found that, except for the month of February and June 2018, the highest quantities have been produced in the first 9 months of 2018, in the month of July being registered a record of the 3 years analysed, with more than 2 TWh of electricity produced. In exchange, the modifications of the level of hydraulicity from the last quarter of 2018 (the decrease of the degree of filling of the lakes to almost 50% and of the affluent debit of the Danube towards the minimum of the year), determined reduced productions of electricity in the months of November and December 2018, representing the minimum quantities produced compared to the similar months of 2016 and 2017.

The second producer in terms of market share, CE Oltenia registered in 2018 a total quantity produced under the level of the quantity of the previous year, with monthly quantities in the period June-October 2018 under the level of the quantities from the similar months of 2016 and 2017, given the completion towards the end of the year of some revision and repair Works, respectively of compliance with the environmental requirements.

The quantity of electricity produced by Nuclearelectrica, the producer with the third market share, continues to be relatively constant compared to the values registered in the two previous years.

We present in the table below, the indicators of concentration calculated according to the electricity supplied in the grids, for the period 2016-2018.

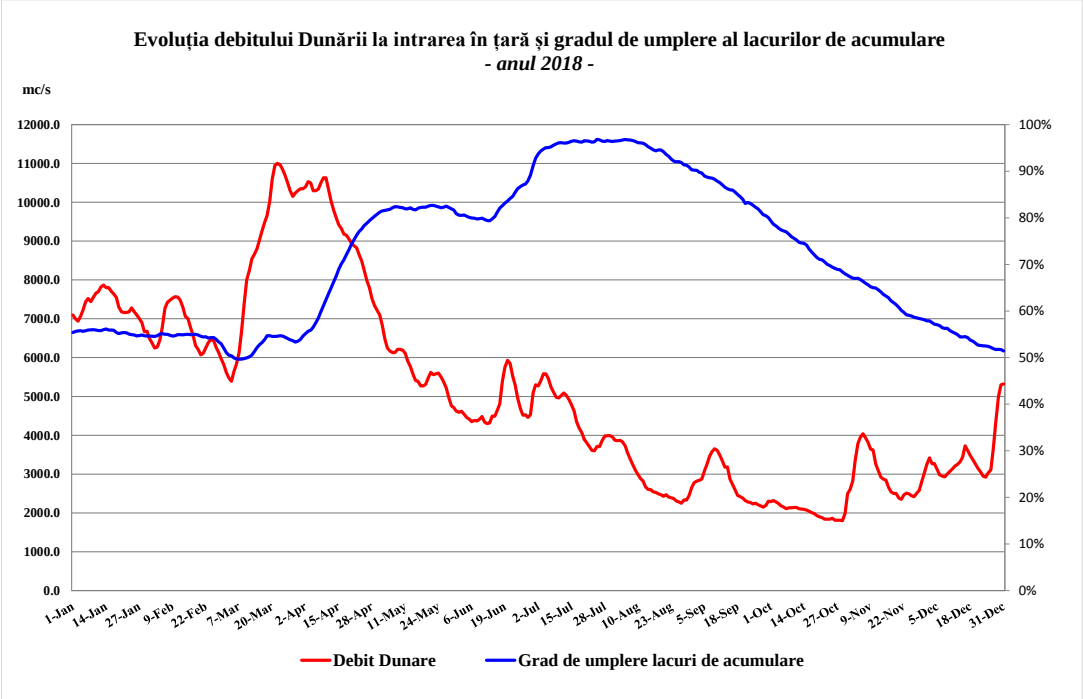
Indicators of concentration	2016	2017	2018
C1 (%)	29.83	24.05	29.02
C3 (%)	68.94	65.96	68.91
HHI	1737	1552	1742

The values of the indicators of concentration maintain the electricity production sector in the area of the limits that separate the markets with a moderate degree of concentration from those with a high degree of concentration.

Overall, 2018 was characterized by an increase of the domestic electricity consumption (calculated based on the electricity supplied in the grids by the dispatchable producers and on the import-export commercial balance) by 2.2% compared to that registered in 2017 and by 5.4% compared to 2016. At level of the months, the domestic consumption reached maximum values compared to the values from the similar months of 2016 and 2017, in the majority of the months (except for January and April 2018). At level of 2018, the curve of the domestic consumption followed the seasonal trend, being registered at the same time peaks of consumption, with values of more than 5 TWh, in the months of January, March and December.

At level of 2018, the quantity of electricity supplied in the grid increased by 1.4% compared to the previous year, the highest rate of growth being registered by the electricity from hydro energetic resources, while the electricity from wind sources decreased compared to the same period of comparison by 14.7%, and that from biomass by 35.5% (the only dispatchable producer based on biomass being Bioenergy Suceava). Following the comparison between the electricity produced and the electricity supplied from primary sources and year 2016 it is found a significant decrease of the electricity based on heating oil (reaching to almost a quarter of what was obtained in 2016).

A significant percentage increase was registered by the electricity originating from hydro sources, under the conditions of a year characterized both by high hydraulicity (the first 9 months), as well as by a drastic reduction of the hydraulicity (the second part of the year). We present the daily evolution of the affluent debit of the Danube in the section of Porțile de Fier and the degree of filling from the large reservoirs of Hidroelectrica during 2018. It is noted the very low level reached by the debit of the Danube in the period September-October and the constant decrease of the degree of filling of the lakes starting from the month of July, the lakes being emptied to approx. 50% at the end of the year.



Source: Daily reports of CNTEE Transelectrica SA – ANRE processing -

Wholesale electricity market

Changes in the structure of the wholesale market, which occurred with the entry into force of the *Law no. 123/2012 on energy and natural gas* (the Law), continued and strengthened as market participants replaced the transactions on the CMBC with transactions on centralized markets organized by OPCOM SA.

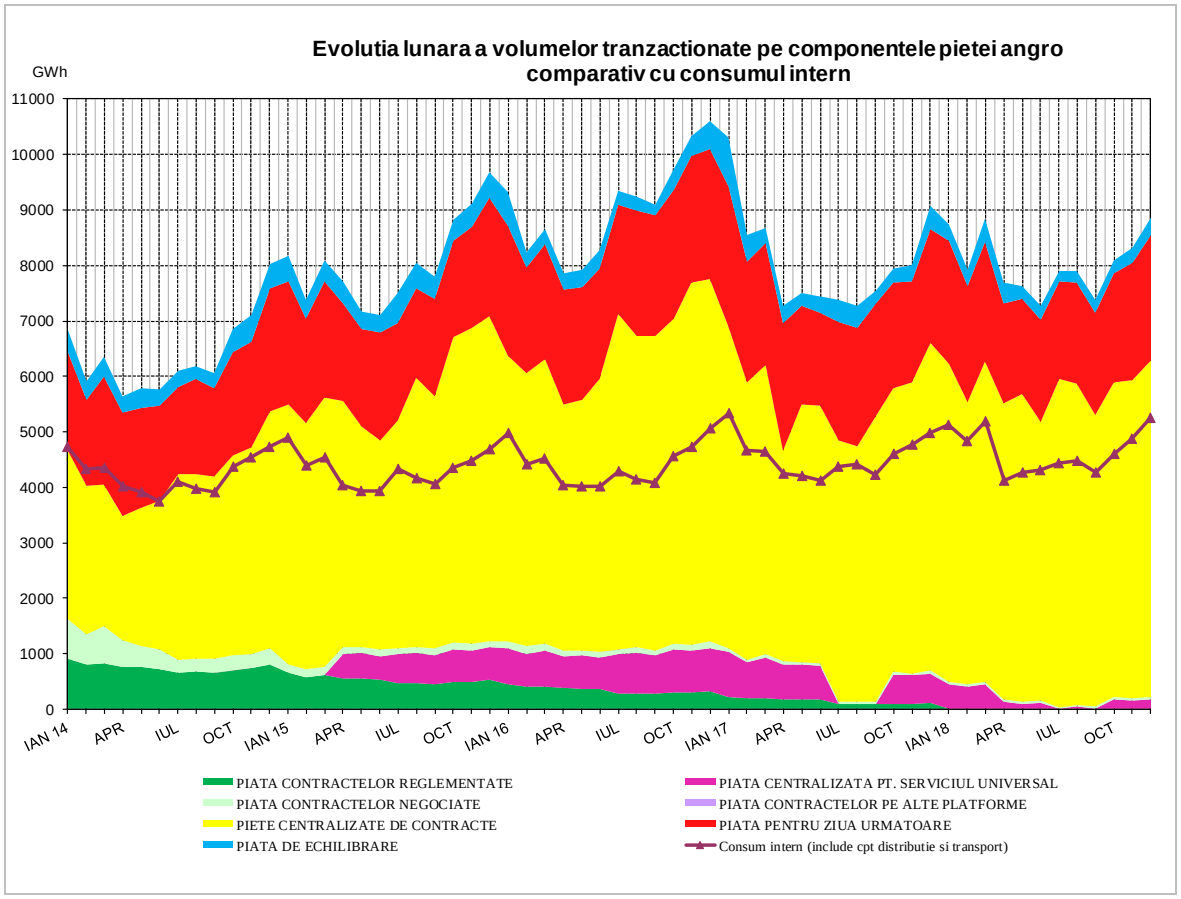
In the following, we will present the annual evolution of the volumes traded on each of the wholesale market components during 2014 – 2018 and their evolution compared to the valued of the previous year, as well as the share of the domestic consumption registered in 2018. It is also presented the graphical evolution of the monthly volumes traded, compared to the monthly domestic consumption for the same period.

The monthly evolution of these volumes in absolute figures, including the average prices realized on those wholesale market components, can be accessed on the ANRE website, in the Monthly Report on the monitoring results for the electricity market.

Components of the wholesale market	2014 (GWh)	2015 (GWh)	2016 (GWh)	2017 (GWh)	2018 (GWh)	Evolution compared to 2017 - % -	Weight from the domestic consumption in 2018 - % -
Regulated agreements market	9058	6413	4152	1741	-	▼100.0	-
Directly negotiated agreements market	4611	1509	1283	616	438	▼28.9	0.8
Centralized bilateral agreements markets, of which:	37284	56717	65337	59829	67005	▲12.0	120.2
CBCM -EL	34319	31407	21729	22821	22736	▼0.4	40.8
CBCM -CN	1621	7915	12718	11474	15273	▲33.1	27.4
TCO-CM	1344	17394	30890	25534	28996	▲13.6	52.0
Centralized universal service market	-	4592	8046	5601	2208	▼60.6	4.0
Day Ahead Market	21496	22496	25810	24716	23541	▼4.8	42.2
Intra-Day Market	64	76	131	152	159	▲4.3	0.3
Balancing Market	4169	4861	4001	4497	3305	▼26.5	5.9
Export*	8200	10504	8587	6548	5479	▼16.3	9.8

Source: Monthly reports of participants to the wholesale electricity market, OPCOM SA and CNTEE Transelectrica SA - ANRE processing

* The quantity related to the export contracts in 2018 includes both the quantities exported by the suppliers/traders and those exported through CNTEE Transelectrica S.A., in its capacity as a transfer agent for coupled DAM.



Source: Monthly reports of participants to the wholesale electricity market, OPCOM SA and CNTEE Transelectrica SA - ANRE processing

In 2018 **trading on CMBCs organized by OPCOM SA (CMBC-OTC, CMBC-EA and CMDC-CN) was predominant**, which mainly covers transactions on medium- or long-term contracts, followed by DAM in the case of short-term transactions. At the same time, the volume of electricity traded on negotiated bilateral contracts decreased steadily, reaching in 2018 the lowest share related to the domestic consumption (about 0.8%), these being the quantities under contracts concluded by competitive producers and suppliers prior to the entry into force of the Law.

It is also noted, **the reduction by approx. 26.5% of the volume of electricity traded on the balancing market compared to 2017.** The data show that among the centralized markets for bilateral contracts, CMDC-EA continued to have values close to those of 2017, registering a slight reduction of the traded volumes, while CMDC-CN and CMBC-OTC registered significant increases of these volumes. The electricity market for large end-customers is still inactive by the end of 2018 being submitted only one initiating offer that trade of which was nevertheless cancelled because of the lack of replies. IDM continues to have an insignificant weight, the increase of the traded volume compared to 2017 being insignificant (4.3%) compared to the small volume traded. In regards to the cross-border business activity, presented in the following table, it results that in 2018, compared to the previous year, it decreased in terms of exports, as well as of imports of electricity. Overall, it can be noted that Romania maintains its position of net exporter in the region, even though the difference between the exported and the imported quantities diminishes gradually from year to year.

Import/export transactions	2015	2016	2017	2018
Export				
Volume (GWh)	10504	8587	6548	5479
Average price (Ron/MWh)	168.05	155.58	189.7	193.66
of which, by coupled DAM *				
Volume (GWh)	34	717	804	1399
Average price (Ron/MWh)	157.75	143.57	178.25	180.23
Import				
Volume (GWh)	3776	3570	3654	2934
Average price (Ron/MWh)	157.43	149.81	242.53	248.66
of which, by coupled DAM*				
Volume (GWh)	2953	2249	2031	1123
Average price (Ron/MWh)	157.93	150.82	252.70	253.40

Source: Monthly reports of participants in the wholesale electricity market, OPCOM SA and CNTEE Transelectrica SA - ANRE processing

* The quantity corresponding to export contracts in 2018 includes both the quantities exported by suppliers/traders, as well as the export completed by means of CNTEE Transelectrica S.A., in its capacity of transfer agent for coupled DAM.

For a comparative analysis with previous year's figures, the annual average prices per PAN component are shown below:

Average prices per components of the wholesale market	2018 -Ron/MWh-	2017 -Ron/MWh-	Evolution in 2018 compared to 2017 - % -
Regulated agreements market	-	121.12	-
Directly negotiated agreements market	161.29	158.93	▲ 1.5
CMBC, of which:	199.06	170.69	▲ 16.6
CBCM -EA	187.97	165.97	▲ 13.3
CMBC-CN	205.62	175.17	▲17.4
CMBC-OTC	204.30	172.89	▲18.2
Centralized universal service market	238.98	187.01	▲27.8
DAM*	216.16	219.95	▼1.7
IDM**	105.89	178.85	▼41.8
BM**	401.67	336.19	▲19.5
Export****	193.66	189.70	▲2.1

Source: Monthly reports of participants in the wholesale electricity market, OPCOM SA and CNTEE Transelectrica SA - ANRE processing

* the average annual price is calculated as the average of the hourly closing prices of the market and it is published by Opcom S.A.
** the average annual price is calculated based on the volume and the annual trading value published by Opcom S.A.
*** the average annual price is calculated as the average of monthly average deficit prices.
****the average annual price reflects the price information regarding the quantities exported by suppliers/traders, as well as those exported through CNTEE Transelectrica SA, as a courier agent for the coupled DAM.

Regarding the average prices on the wholesale electricity market presented, we would like to make the following clarifications:

- Average prices do not include VAT, excise duties or other taxes and were determined by weighting the prices with the monthly deliveries corresponding to sales transactions reported monthly by market participants, with the above-mentioned exceptions;
- All prices include the TG component of the transport fee (for centralized markets it is included by the bidders in the price).

The comparative analysis of the average annual prices resulting from transactions concluded on wholesale market components in 2018 compared to the previous year reveals the increase of the average annual prices on all components of the wholesale market except for the day-ahead and intra-day market, in the following market conditions:

- the completion on the date of 31.12.2017, of the last stage provided in the Schedule for phasing-out regulated tariffs, included in the Memorandum of Understanding concluded between the Romanian Government and the European Commission on the date of 13.03.2012;
- the increase of the domestic consumption;
- the regional situation characterized by weather conditions similar to those from Romania;
- the high hydraulicity recorded in the first part of the year and the reduction of the hydro source in the second part of the year;
- an average temperature higher by 1.350C than the multiannual average recorded in the period 1981 – 2010, 2018 being the third hottest year recorded in Romania since 1901 to the present, according to the Press Release of the Ministry of the Environment published on the website of the National Meteorological Administration on the date of 14.01.2019;
- the planned or accidental unavailability of some important dispatchable units;
- the increase of the quantities tendered at procurement and of the participants' availability to purchase energy at high and very high prices.

In the last part of the year, some of these market conditions led to the registration of a long-term energy shortage and a lack of sale offer on all of the components of the wholesale market.

Characterization of the activity on the wholesale market of the main categories of participants

Following the removal of the wholesale market regulated component, the volume of the supplies of energy corresponding to the contracts implemented on the competitive market increased by 5% in 2018, compared to 2017.

It is noted the maintenance of the majority share of the supplies under traded contracts on CMBC-OTC, in parallel with the reduction of the share of CMBC-EA and the increase of the share of CMBC-CN. As such, the final structure of the activity on the centralized markets of contracts in 2018 is the following: 23% of the volumes have been delivered onCMBC-CN, 34% on CMBC-EA, and the rest of 43% on CMBC-OTC.

The volumes of the supplies of energy carried out under import and export contracts are a lot smaller than the monthly volumes supplied in 2017 under the same types of contracts.

It is noted a different monthly evolution of the volumes imported compared to those exported. The significant increase of the volumes imported in the months of May, June, and those from the period between September and December, correlated with the decrease of the volumes exported in these months, led to the registration of some significant variations of the export-import balance, being recorded a negative balance for the months of May and December 2018.

Overall, the supplies corresponding to the sales of the dispatchable producers on the competitive market represented in 2018 a quantity of almost 65.6 TWh, traded at the annual average price of Ron 199.43/MWh; compared to the values of 2017, it is noted an increase by 5% of the quantities of energy sold and by 10% of the annual average price.

The largest part of the said quantity was sold on the centralized market of bilateral contracts (approx. 43.8 TWh), and from that, it was predominant the sale to energy suppliers (39.7 TWh at the average price of Ron 191.87/MWh). Large quantities have been sold as well by means of short-term markets (DAM and PI) - approx. 14.5 TWh at the annual average price of Ron 219.77/MWh. Compared to the previous year, the sale structure of dispatchable producers continued to change, with an increase of the quantity traded on markets like PCCB and PI to the detriment of PCSU, that recorded a drastic decrease of 89%, and DAM with a decrease by 11%.

The lowest annual average price achieved by the suppliers at sale is recorded for the sale contracts on the CMBC-EA (Ron 200/MWh), and the highest annual average price is recorded on the CMBC-CN (Ron 220.37/MWh). It is noted the fact that the average price on the CMUS (Ron 242.99/MWh) recorded in 2018 as well values higher than those recorded on the other centralized markets of contracts administered by Opcom SA.

In 2018, the annual average price for which the SoLR purchased energy from the markets like CMBC (Ron 217.46/MWh) is smaller than the one for which they purchased energy from the DAM (Ron 253.42/MWh).

Distribution operators purchased 58 TWh of energy only by means of the competitive market, mainly by means of the products existing on the CMBC-EA and CMBC-CN (46.9%, respectively 25.6% of the volume of the annual procurement), followed by the procurement from DAM (approx. 23.6%) and CMBC-OTC. As regards their activity on the centralized markets, they are noted the following:

- some distribution operators active on the CMBC-EA and DAM in 2017 reduced their acquisition from these markets turning in 2018 towards the CMBC-CN and CMBC-OTC; if in 2017 there has been only one operator active on the CMBC-OTC, in 2018 4 of them became active, purchasing energy from this market;
- 5 of the distribution operators intensified their activity on the CMBC-CN;
- the average prices of acquisition on the CMBC-CN and CMBC-OTC have been, in general, higher than those recorded at the acquisition from the CMBC-EA;
- all of the distribution operators have been active on the DAM in 2018, like in 2017, one of these increasing its acquisition for the DAM compared to the previous year;
- for all of the distribution operators the average prices of acquisition on the DAM have been higher than the average price of acquisition from the markets like CMBC.

Evolution of The Centralized Market for Bilateral Contracts with Continuous Double Negotiation - CMBC-OTC

Launched in May 2014, CMBC-OTC was also in 2018 the most important component of the wholesale electricity market, the electricity supplied to this market having a market share of 52% of domestic consumption, and representing approx. 28.4% of all wholesale transactions on the wholesale market.

The annual quantity supplied under the sale-purchase contracts concluded on the CMBC-OTC was 28,996 GWh, at the average annual price of Ron 204.30/MWh. The quantities supplied monthly varied between a minimum of 1,811 GWh (37.5% of the domestic consumption) in the month of February 2018 and a maximum of 2,852 GWh (64.3% of the domestic consumption) in the month of July 2018. Monthly average prices varied between Ron 166.78/MWh (in the month of April) – Ron 230.47/MWh (in the month of November).

The sales of the suppliers on this market in 2018 represented about 57% of the entire quantity supplied, at the annual average price of Ron 211.39/MWh, while the producers sold about 43% of the total supplies on this market, at the annual average price of Ron 194.94/MWh. The data regarding the quantities supplied and the corresponding prices have been obtained based on the monthly reports of the participants on the market and it refers to the energy supplied in the reporting month, following the transaction concluded on the CMBC-OTC.

The HHI concentration indicator, calculated by OPCOM SA according to the volume that each participant contracted for delivery, recorded monthly values in the range of 620 – 1,466 on sale, values indicating a market within the limits that separate non-concentrated markets from those with a moderate degree of concentration and in the range of 461 – 582 on purchase, values indicating a non-concentrated market.

The C3 concentration indicator steadily recorded values of less than 30% on sale and values comprised between 32.64% and 52.06% on purchase, the latter being specific to a moderately concentrated market.

As regards trading on the CMBC-OTC in 2018, the activity of the participants on this market intensified compared to the previous year, being recorded an increase of the number of traded contracts from 3,816 to 4,976.

From the brief analysis of the information comprised in the monthly reports of Opcom S.A. with regards to the supervision of the administered markets, it resulted the following:

- Compared to the previous year, the monthly traded volume increased by 30%, and the weighted average price of transaction increased by approx. 15.7%, respectively from Ron 195.26/MWh in 2017 to Ron 225.90/MWh on 2018;
- the monthly average price of transaction of the same product varies according to the transaction month and the specificity of each traded product;
- they have been traded significant quantities by means of the instruments specific to the standard products with band delivery profile for monthly, quarterly, bi-annual and annual contracts;
- it has been concluded a significant number of transactions between the participants – members of some groups of companies; in case of one of the groups, both the supplier of last resort, as well as the concessionaire distribution operator concluded contracts with the companies of the group.

OPCOM SA calculates and publishes daily reference prices for each CMBC-OTC product, calculated as an arithmetic mean of the CMBC-OTC participants' proposals.

Average trading prices, determined as weighted averages of prices with quantities of electricity traded using specific instruments (standard products) that can be traded on CMBC-OTC for each delivery profile (band, void, peak) are also calculated published daily by OPCOM SA on its own website at the Tranzacții-Rezultate (Transactions-Results) section.

In the CMBC-OTC section, Opcom S.A. also publishes daily information on traded products and aggregate data, synthesis and statistics, as well as data/information published in accordance with the provisions of Art. 26 of the CMBC-OTC Regulation - in 2018 full information on 737 transactions was published. In March 2018 there were record values of maximum closing price variations of 72%.

Evolution of the Centralized Market for Bilateral Electricity Contracts, with the three methods of trading – CMBC-EA, CMBC-CN and CMBC-FP

In 2018, the quantity of energy supplied under the contracts concluded on the CMBC-EA was 22,736 GWh, in decrease by approx. 0.4% compared to 2017 and market share of 40.8% of the domestic consumption, while the annual average price for the total quantity supplied increased by approx. 13,3% compared to the same period of comparison.

During 2018, the sales of the suppliers on this market represented approx. 8.9% of the entire quantity supplied, at the annual average price of Ron 200.00/MWh, while dispatchable producers supplied approx. 91.1% of the total quantity traded at sale, at the annual average price of Ron 186.77/MWh.

As regards the transactions carried out in 2018, this activity decreased significantly compared to 2017, being recorded a decrease by approx. 41.6% of the volume of energy offered for transaction (sale and purchase) and by approx. 50% of the volume of energy traded. At the same time, the weighted average price of transaction recorded an increase by approx. 33% compared to the previous year: from Ron 176.07/MWh in 2017, to Ron 234.28/MWh in 2018.

The number of participants registered on the CMBC-EA in 2018 was above the value 283, the minimum number being recorded in September 2018, and the maximum number (of 316 participants) in the month of January, values below those recorded in 2017, when the number of participants was consistently above 340.

The most active participant in terms of intent to sell was the producer CE Oltenia SA, who offered the highest volumes aimed for sale.

As regards the concluded sales, two great producers stood out: CE Oltenia S.A. and SN Nuclearelectrica S.A., who held in turns the position of first seller (with shares that varied between 29.04% in the month of December 2018 and 73.95% in the month of September 2018).

From the analysis of the purchase offers, it results that in 10 of the 12 months of the year, the most interested in the purchase of energy on this market have been, alternatively, 4 of the 5 SoLRs designated, without managing nevertheless to materialize their intent to buy. The highest market shares have been recorded by 2 of the SoLRs who had as well the highest purchase offer in the respective months.

The HHI concentration indicator, calculated by Opcom S.A. based on the volumes traded by the participants, recorded monthly values in the range 1,836 – 5,629 for sale, indicating a market with a high concentration and in the range of 347 – 1,867 for purchase, specific to non-concentrated and moderately concentrated markets, and the C3 concentration indicator on the purchase side recorded values between 19.13% and 68.63%, and on the sales side between 64.43% and 92.38%.

The supplies of energy corresponding to the contracts traded on the CMBC-CN recorded in 2018 a share of approx. 27.4% of the domestic consumption, representing approx. 15% of the total supplies of energy on the wholesale market.

The energy supplied in 2018 under the contracts of sale concluded on the CMBC-CN represented approx. 30.9% of the total, at the annual average price of Ron 220.37/MWh, while dispatchable producers supplied for sale approx. 69.1% of the total quantity supplied, at the annual average price of Ron 199.02/MWh.

As regards the transactions on the CMBC-CN in 2018, the number of participants registered increased from 171 in February 2018 to 188 in the period between October and December 2018, and the number of contracts traded in 2018 was 7,145 (with a minimum number of 163 in January and a maximum number of 2,139 in May).

The analysis of the data regarding the volumes traded indicates a decrease by approx. 20% of the annual volume traded in 2018 compared to the one traded in the previous year. In the month of May 2018, it was registered a new record of transaction (4,828 GWh), representing a monthly maximum of the past two years, the previous one being recorded in May 2017.

The data related to the transactions is presented in the monthly reports of Opcom S.A. for the monitoring of the functioning of the administered markets.

Evolution of the Day-Ahead Market - DAM

The volume of electricity traded on DAM in 2018 decreased by approx. 4.8% compared with last year. The monthly share of DAM transactions in domestic consumption varied between 39.5% (July 2018) and 43.8% (April 2018), at year level being registered a decrease compared to 2017 (42.2% compared to 45.3%).

The average DAM closing price (calculated as the arithmetic mean of daily closing prices) decreased by approx. 1.7% compared to the average of 2017.

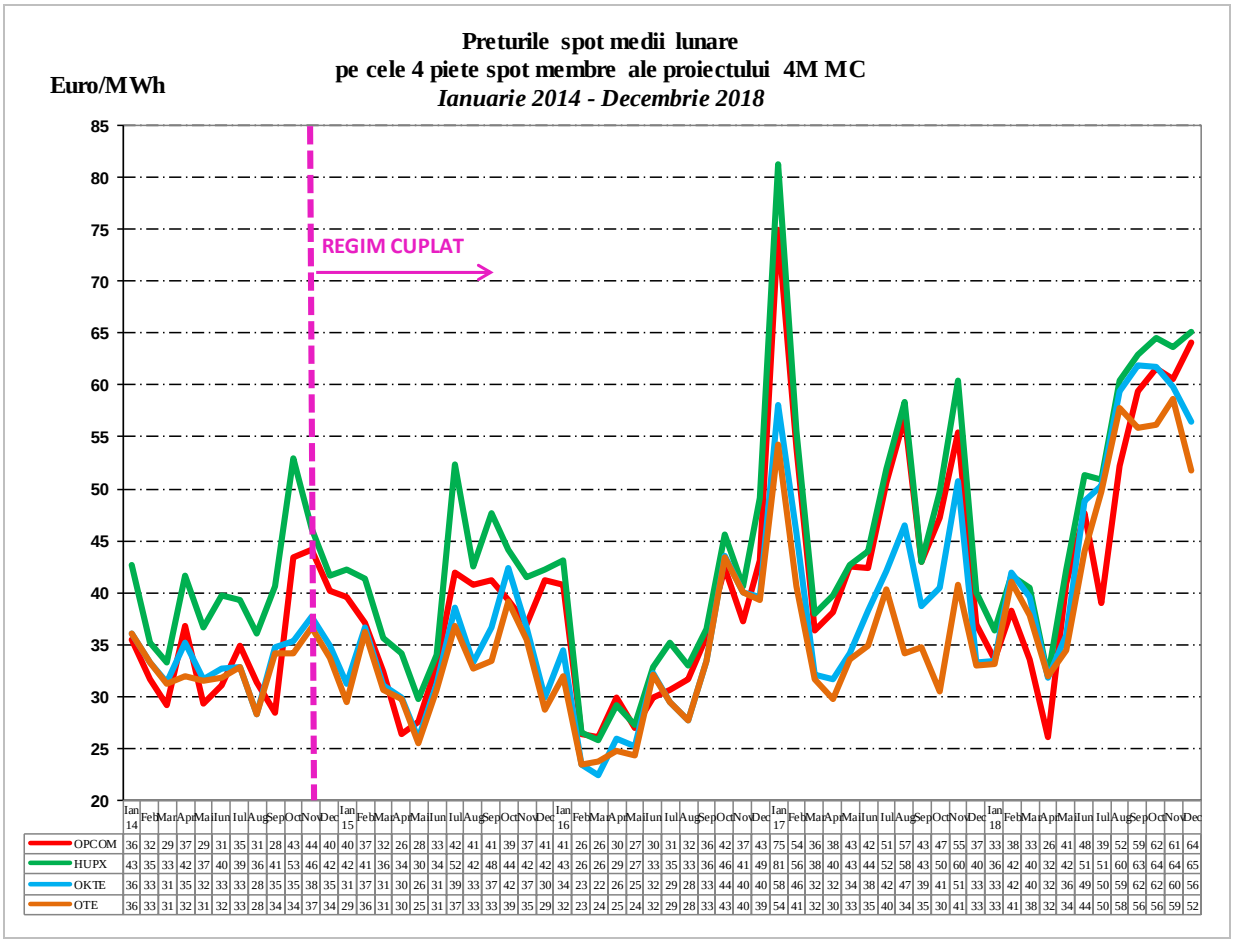
Monthly variations of the average monthly price established on DAM existed in both directions. The minimum value of the period was reached in April 2018 (Ron 121.28/MWh), and the maximum in December 2018 (Ron 298.47/MWh), the average annual price calculated as an average of average daily prices was Ron 216.16/MWh in 2018.

The monthly evolution of the average price and volume traded on the DAM in the period 2006-2018, is presented in the Monthly Report regarding the results of the monitoring of the energy market, published on the website of ANRE.

As of November 19, 2014, the DAM in Romania operates in a regime coupled with spot markets in Hungary, Slovakia and the Czech Republic, in the 4M MC project, to harmonize European national markets and create a European internal market for electricity. electricity. Coupled operation is based on ACER's recommended coupling algorithm (Euphemia), which aims to maximize social welfare across the entire area of coupled markets.

The coordinated calculation of cross-border allocation capacity is under the governance of transmission and system operators in the four countries, in line with European law, and the allocation model used is that of implicit allocation of the available interconnection capacity on the DAM.

The following chart shows the monthly average spot prices of the 4 day ahead markets involved in the 4M MC coupling mechanism starting with January 1, 2014, before and after the onset of coupled operation.

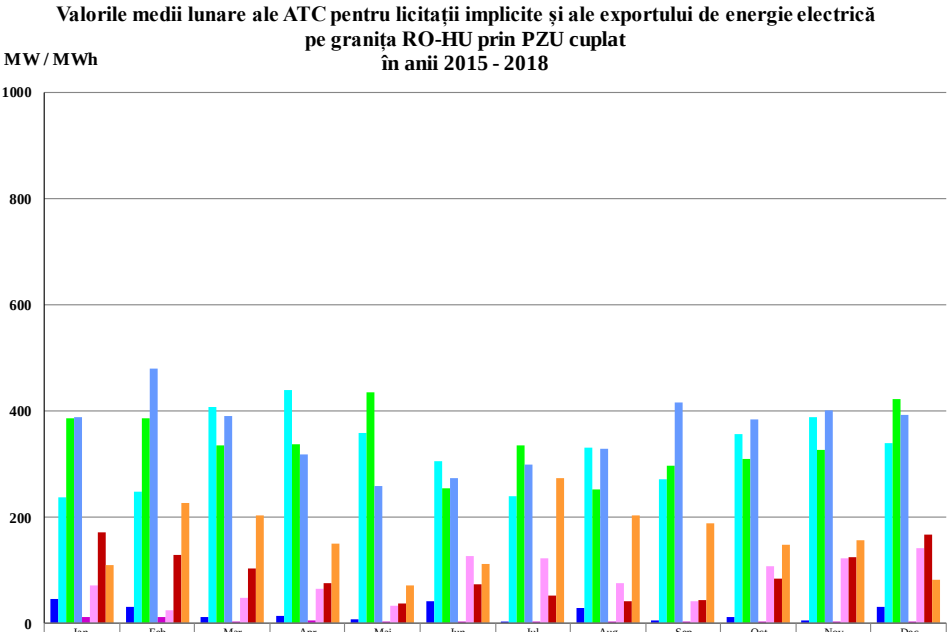


	Ian 14	Feb	Mar	Apr	Mai	Iun	Iul	Aug	Sep	Oct	Nov	Dec	Ian 15	Feb	Mar	Apr	Mai	Iun	Iul	Aug	Sep	Oct	Nov	Dec	Ian 16	Feb	Mar	Apr	Mai	Iun	Iul	Aug	Sep	Oct	Nov	Dec	Ian 17	Feb	Mar	Apr	Mai	Iun	Iul	Aug	Sep	Oct	Nov	Dec	Ian 18	Feb	Mar	Apr	Mai	Iun	Iul	Aug	Sep	Oct	Nov	Dec
OPCOM	36	32	29	37	29	31	35	31	28	43	44	40	40	37	32	26	28	33	42	41	41	39	37	41	41	26	26	30	27	30	31	32	36	42	37	43	75	54	36	38	43	42	51	57	43	47	55	37	33	38	33	26	41	48	39	52	59	62	61	64
HUPX	43	35	33	42	37	40	39	36	41	53	46	42	42	41	36	34	30	34	52	42	48	44	42	42	43	26	26	29	27	33	35	33	36	46	41	49	81	56	38	40	43	44	52	58	43	50	60	40	36	42	40	32	42	51	51	60	63	64	64	65
OKTE	36	33	31	35	32	33	33	28	35	35	38	35	31	37	31	30	26	31	39	33	37	42	37	30	34	23	22	26	25	32	29	28	33	44	40	40	58	46	32	32	34	38	42	47	39	41	51	33	33	42	40	32	36	49	50	59	62	62	60	56
OTE	36	33	31	32	31	32	33	28	34	34	37	34	29	36	31	30	25	31	37	33	33	39	35	29	32	23	24	25	24	32	29	28	33	43	40	39	54	41	32	30	33	35	40	34	35	30	41	33	33	41	38	32	34	44	50	58	56	56	59	52

Source: Information published by OPCOM SA - ANRE processing

In order to better meet the purpose for which the DAM coupling mechanism was implemented, i.e. the transfer of energy to the level and in the sense determined by the known production and consumption conditions and depending on the prices of the coupled markets, starting with 1 January 2016, transport in Romania and Hungary, CNTEE Transelectrica SA and Mavir ZRt, following the recommendations of the regulatory authorities of the two states, ANRE and MEKH, agreed to reserve a quota of the interconnection capacity for the DAM allocation. The same rule was adopted for the allocation of interconnection capacity on the border with Bulgaria.

The following chart shows the monthly average values of the transmission capacity available hourly for export to DAM and electricity exported through DAM coupled, calculated as arithmetic average of the hourly flows, completed in the period 2015 - 2018.

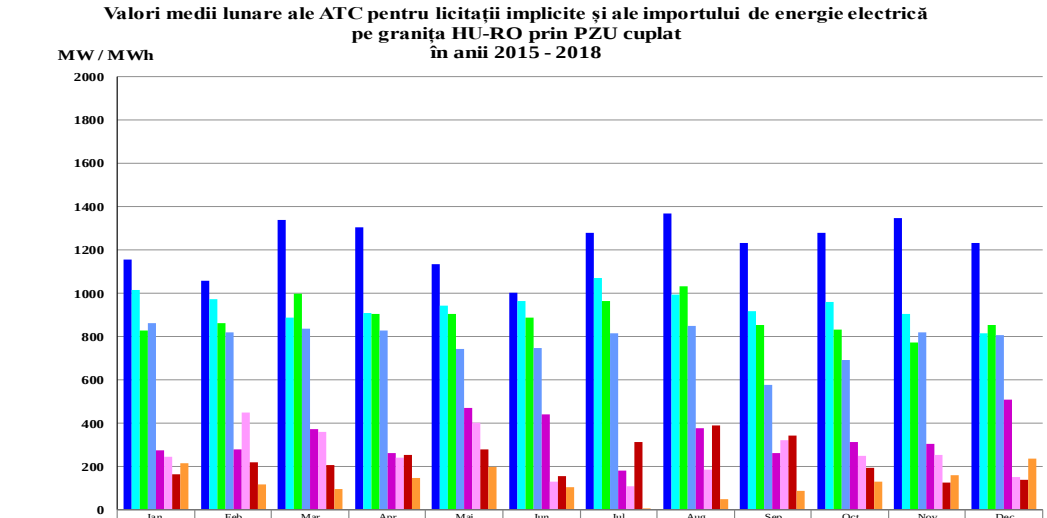


	Ian	Feb	Mar	Apr	Mai	Iun	Iul	Aug	Sep	Oct	Nov	Dec
ATC RO-HU 2015	45	31	11	13	8	41	4	29	6	11	5	30
ATC RO-HU 2016	237	249	407	440	358	305	239	331	272	356	387	340
ATC RO-HU 2017	386	386	335	337	435	255	335	252	297	309	326	422
ATC RO-HU 2018	387	480	390	319	258	273	300	328	416	384	401	393
Export RO-HU 2015	12	11	4	5	1	3	1	4	1	2	2	2
Export RO-HU 2016	72	25	48	65	34	127	122	75	41	106	122	141
Export RO-HU 2017	172	128	104	76	36	73	53	42	44	85	124	167
Export RO-HU 2018	109	226	202	151	71	112	273	204	187	148	157	81

Source: Monthly reports of OPCOM SA – ANRE processing

Starting from 2016 they have been recorded annual increases of the ATC for exports on DAM. In 2018 it was recorded an increase by approx. 6% of the ATC and an increase by approx. 74% of the electricity flows exported on the RO-HU border through the coupling mechanism, compared to 2017.

As about the ATC allocation for implicit auctioning for imports on the Hungarian border, following the application of the netting principle, lower ATC values for coupled DAM resulted for 2018. The following chart shows the values of the monthly ATC allocated for import on DAM and the electricity flows imported by DAM coupled between 2015-2018.



	Ian	Feb	Mar	Apr	Mai	Iun	Iul	Aug	Sep	Oct	Nov	Dec
ATC HU-RO 2015	1153	1056	1339	1302	1134	1002	1280	1366	1231	1277	1345	1231
ATC HU-RO 2016	1013	973	887	909	942	962	1069	995	918	961	905	813
ATC HU-RO 2017	829	864	996	903	904	885	964	1030	851	830	771	854
ATC HU-RO 2018	863	820	835	828	742	747	816	848	576	692	819	807
Import HU-RO 2015	274	277	370	261	472	441	180	379	262	311	302	508
Import HU-RO 2016	244	448	360	240	401	131	109	186	323	249	253	151
Import HU-RO 2017	165	218	207	255	277	155	311	390	344	195	126	136
Import HU-RO 2018	216	115	97	145	196	103	3	48	87	131	157	237

Source: Monthly reports of OPCOM SA - ANRE processing

We can see a decrease in ATC allocated for imports on DAM by approx. 12% compared to 2017 and the reduction of the electricity flow imported through DAM coupled with approx. 45%. Although there were trading opportunities reflected in price differences between the two areas, cross-border exchanges could not be achieved over many time intervals because of the values set for the two-way ATC (export/import). The following table shows the monthly situation of the number of hourly intervals in which no larger shifts were made in both directions, given the insufficient values of ATC allocations (the changed flow was equal to the hourly allocated ATC and the difference between PIP DAM in Romania and PIP DAM in Hungary was different from zero).

Month	Number of intervals with insufficient ATC DAM export (RO-HU)	Number of intervals with insufficient ATC DAM import (HU-RO)
January	142	20
February	207	13
March	309	8
April	266	15
May	128	38
June	227	10
July	625	0
August	352	2
September	179	37
October	162	28
November	182	6
December	85	36
Total year 2018	2,864	213

Source: Daily data published by OPCOM SA - ANRE processing

The evolution of the hourly evolution of the difference between the closing prices of DAMs coupled on Romania and Hungary respectively, correlated with the cross-border flows on the Romanian-Hungarian border in both directions in 2018 is presented in the Monthly Report regarding the results of the monitoring of the energy market, published on the website of ANRE.

The price established on DAM in 2018 incorporates with sufficient accuracy the available information on the level of resources and the electricity demand corresponding to the moment, while also presenting the specific high volatility.

The HHI concentration indicator had values that indicate a lack of concentration on the purchase side, with monthly values in the range 449 - 966. On the sales side, the monthly values of the HHI have been in the range 435 – 1,121, being recorded 2 months of moderate concentration of the market, respectively September and October 2018, in the other months the values indicating a lack of concentration of the market.

Intra-Day Market - IDM

IDM is a volunteer market that provides participants with standard trading tools designed to facilitate the regulation of the contract portfolio as close as possible to the moment of electricity delivery and a better management of possible imbalances, thus contributing to a balance between production and consumption.

The volume of electricity traded in the year 2018 on the IDM was approx. 159 GWh, up 4.3% compared to the previous year and 21% compared to that of the year 2016. The monthly volumes of the analysed year exceeded 11.5 GWh in the first 8 months of the year, lowering towards the end, to a minimum of 5.8 GWh in November 2018.

Out of a total of 134 license holders registered during the year, a monthly average number of 60 participants concluded transactions of sale or purchase, representing 46% of the total participants registered who have been active on this market.

The average weighted price in 2018 was Ron 105.89/MWh, 41% lower than in 2017. At a value level, the transactions represented approx. Ron 16.8 million, a reduction by 38% compared to the value of 2017 on this market. IDM is still not used to its potential by the participants on the market, situation which is not specific to the markets with growing renewable energy production.

Balancing market – BM

At the end of 2018, 66 Balancing Parties and 113 participants were operating on the balancing market, holding a total of 224 dispatchable units in commercial exploitation.

The following table shows a comparison of the annual values from the past 5 years of the C1 and HHI concentration indicators, based on the actual energy delivered by producers on the BM for each type of regulation and sense.

Year	Type of regulation	Sense of regulation	2014	2015	2016	2017	2018
C1 (%)	Secondary regulation	Increase	59	58	59	58	70
		Decrease	58	57	60	58	70
	Fast tertiary regulation	Increase	58	55	63	82	73
		Decrease	70	74	56	42	39
	Slow tertiary regulation	Increase	61	37	41	34	52
		Decrease	63	36	39	39	73
C3 (%)	Secondary regulation	Increase	94	94	95	98	97
		Decrease	95	93	94	98	97
	Fast tertiary regulation	Increase	92	85	93	94	87
		Decrease	90	95	93	99	94
	Slow tertiary regulation	Increase	80	91	82	80	94
		Decrease	91	85	87	83	97
HHI	Secondary regulation	Increase	3495	4368	4502	4687	5443
		Decrease	3396	4274	4504	4706	5470
	Fast tertiary regulation	Increase	3400	3626	4432	6811	5513
		Decrease	4836	5779	3942	3488	3265
	Slow tertiary regulation	Increase	3759	2997	2941	2369	3627
		Decrease	3959	2640	3117	2928	5747

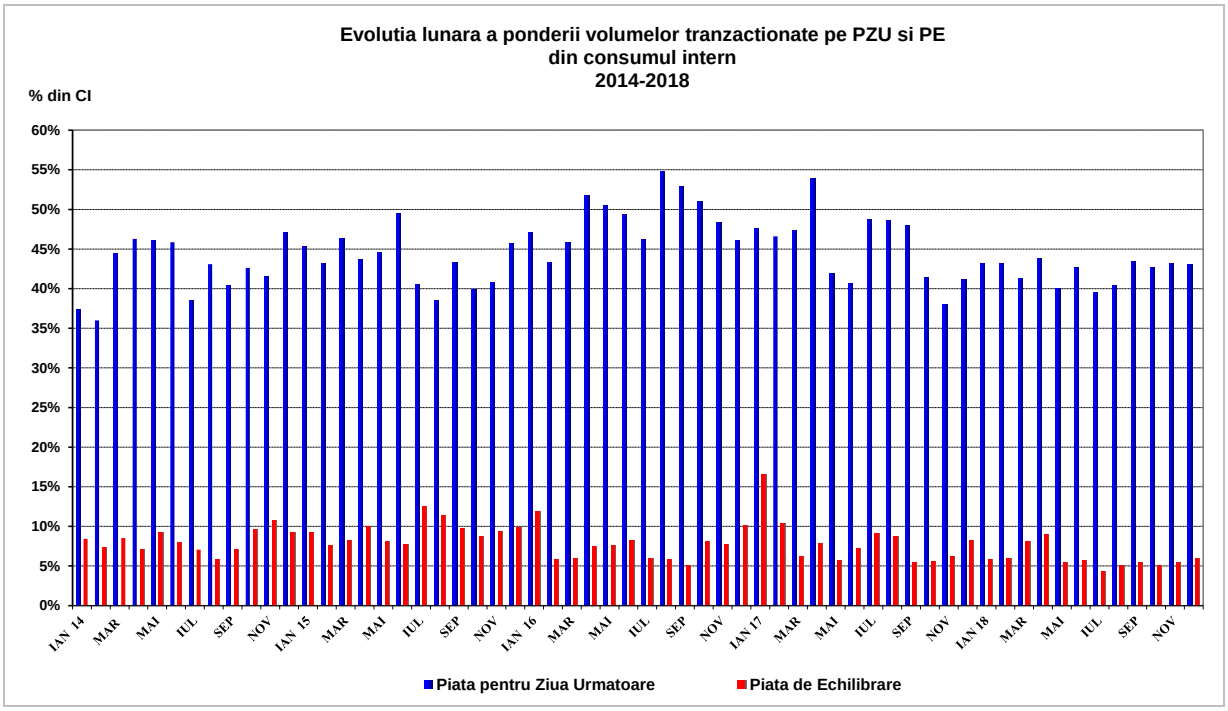
Source: Monthly reports of CNTEE Transelectrica SA - ANRE processing

The annual concentration indicator values indicate for 2018 also a high concentration of the balancing market for all regulation categories (except for the fast tertiary regulation upon decrease), in increase compared to the annual values of the 4 previous years of comparison. It is noted as well the existence of a dominant participant, Hidroelectrica, on types of fast secondary and tertiary regulation.

Even though at year level, Hidroelectrica is the dominant participant on fast tertiary regulation upon decrease, at monthly level, CE Oltenia holds the highest market share on this type of regulation in 7 of 12 months.

Monthly volumes recorded on the BM in 2018 varied between the minimum value of 188 GWh (recorded in July) and the maximum value of 419 GWh (March), the volume traded on the BM in 2017 decreasing by approx. 26% compared to the previous year and 17% compared to 2016. The share of monthly volumes traded on the BM from the domestic consumption (calculated as the difference between the energy supplied in the network and the export-import commercial balance) recorded, in most of the months, reduced values, between 4-6% of the internal consumption.

The period from March to April 2018 constituted an exception, when both the absolute values of the volumes traded on this market (30-50% higher compared to the average of the year), and their share from the monthly domestic consumption (approx. 8-9%) have been higher.



Source: Monthly reports of OPCOM SA and CNTEE Transelectrica SA - ANRE processing

The annual average values of the prices for settlement of imbalances recorded by PREs in 2018 (the surplus price and the deficit price) have been Ron 401.67/MWh for the deficit price (about 20% higher than 2017) and Ron 35.48/MWh for the surplus price (about 40% lower that of the previous year). The specified values are calculated as average of the recorded hourly prices.

To be noted that at monthly level, the monthly average deficit prices increased abruptly starting from the month of September 2018, reaching in the month of December to the value of Ron 700.79/MWh, following the changes occurred once with entry into force of the provisions of ANRE Order no. 31/2018 (removal of the limitation to Ron 250/MWh of the difference between the highest price from the offers corresponding to a time frame for the dispatchable units from the portfolio and the lowest price from the offers corresponding to the same time frame).

In 2018, the additional value resulted from the redistribution of the additional revenues/costs originating from the balancing of the system had month by month, with a single exception (April 2018) positive values, with significance of revenue (rights to be collected). At year level, the cumulative value represented an additional revenue of approx. Ron 50.11 million. Once with the enforcement of the provisions of ANRE Order no. 31/2018, the additional revenue, respectively the additional cost originated from the balancing of the system is redistributed monthly to each PRE (les the PREs Unplanned changes and Shipper – DAM transfer agent, belonging to CNTEE Transelectrica S.A.), starting from its contribution to the reduction or aggravation of the system imbalance.

From the data published by CNTEE Transelectrica S.A. on its own website in the chapter Transparency/Balancing and STS, it results that, except for the months of August, October and December, there have been, monthly, days of trading intervals in which they have been ordered reductions of the power of wind and photovoltaic power plants registered as dispatchable units on the balancing market. The reasons for the reductions have been determined by the need to balance the production and the

consumption and the compliance with the value of the planned balance, in the conditions in which they have been used the other possibilities of regulation and sporadically for the compliance with the safety criterion N-1 in the conditions of unavailability of some line. In the month of April 2018, it was recorded the highest number of days in which such reduction has been ordered.

During the first 8 months of 2018, CNTEE Transelectrica S.A. identified 2 participants to the BM who met the publishing conditions for offers and transactions after exceeding the limit of 40% of the volume of transactions for a certain type of regulation and direction during 3 consecutive months (Hidroelectrica on secondary regulation upon increase and decrease and on fast tertiary regulation upon increase and CE Oltenia on slow tertiary regulation upon decrease). Moreover, in January 2018, OMV Petrom met the publishing conditions on slow tertiary regulation upon increase, and CE Oltenia on secondary regulation upon increase and on fast tertiary regulation upon decrease.

Starting from the month of September 2018, through the enforcement of **ANRE Order no. 31/2018**, CNTEE Transelectrica S.A. publishes on its own internet page, in the chapter Transparency/Balancing and STS, the fixed and daily offers, the transactions engaged and final of each participant on the BM, for each dispatch interval.

The market for system technology services

Participants to the balancing market that provided system technological services (STS) in 2018 were Hidroelectrica, CE Oltenia, CE Hunedoara, Electrocentrale București, SNGN Romgaz, Electrocentrale Galați, Veolia Energie Prahova, Veolia Energie Iași, Bepco and Electroenergy Sud, qualified producers for this type of services.

In order to cover the necessary reserve of secondary regulation of frequency-power and the reserve of power corresponding to the tertiary regulation, established by CNTEE Transelectrica S.A., through the UNO-DEN for the maintenance of the level of security in the functioning of the NPS, they are purchased quantities by types of reserves, both based on contracts with ruled quantities and prices, as well as following the organisation of monthly, weekly and shorter tenders, depending on the needs.

In 2018, the monthly volumes purchased by CNTEE Transelectrica S.A. under the contracts concluded with the STS suppliers covered 100% of the necessary established by UNO-DEN, except for the months of April, May and December, when there have not been sufficient offers at some tenders organized to cover the band necessary of secondary regulation and reserve of fast tertiary regulation.

For the period between 03 January and 15 March 2018, ANRE issued the decision of procurement of some hourly quantities at prices regulated for the reserve of secondary regulation, fast tertiary regulation and slow tertiary regulation from the producer CE Hunedoara, according to GD no. 760/2017. For the same period, through other two decisions they have been established hourly values of the quantities of reserves of slow tertiary regulation and the ruled prices, according to GD no. 760/2017, for the procurement from the producers Electrocentrale Galați and Electrocentrale București (alternative fuel oil producers).

Subsequently, considering the provisions of GEO no. 26/2018, on the adoption of some measures for the safety of the supply of energy that set up the obligation of CE Hunedoara to supply STS at a value of the electric power of at least 400 MW, ANRE issued the decision on the procurement of the slow tertiary reserve supplied by the producer involved for the period from 01 May to 31 December 2018 at the regulated price of Ron 18.06/MWh (compared to Ron 17.82/MWh, the price regulated for the period from 03 January to 15 March 2018 for the same producer).

The annual quantities procured in a regime ruled by CNTEE Transelectrica S.A. for each type of reserve represented about 0.8% of the total quantity of secondary reserve, 0.6% of the total fast tertiary regulation and 54.4% in case of the reserve of slow tertiary regulation. Significant quantities have been purchased from CE Hunedoara (the only producer with quantities ruled on the secondary reserve and fast tertiary regulation, respectively with over 88% of the acquisition regulated on the reserve of slow tertiary regulation).

If in terms of quantity, the total acquisition of reserves increased in 2018 compared to that of 2017 by 0.3%, at value level it was by approx. 2.5% more expensive (without taking into account the penalties for non-completion).

The ratio between total quantities of reserves contracted in a regulated, respectively competitive regime was in 2018 of approx. 22%/78%, being recorded an increase of the ratio of the competitive component in the total of purchased reserves, compared with the value of the same ratio recorded in 2017 (approx. 30%/70%).

Compared to the average prices resulted following the monthly and weekly tenders organised for the acquisition of the reserve of secondary regulation from the first semester of 2018, when they have been recorded values comprised in the range Ron 64.5-75.6/h*MW, in the months of the second semester the average prices of the participants were constantly at the value of Ron 80/h*MW. In most of the timeframes, the closing price at monthly and weekly tenders was established by the offers of CE Oltenia and Hidroelectrica.

In case of the fast tertiary reserve, the variation of the individual average prices of the participants resulted following the monthly and weekly tenders was low in the first 11 months of the year, while in December they have been recorded high prices, varying in the range Ron 53.8-113.1/MWh. For this type of reserves, the closing price for over 90% of the timeframes of the monthly and weekly tenders, was established by Hidroelectrica.

Following monthly and weekly tenders organized for the acquisition of slow tertiary reserve, monthly average prices recorded by the producers who supplied the respective service varied, except for the period between June-August 2018, in the range Ron 12.4-27.6/MWh. If the months June and July have been characterized by very low levels of the prices resulted from monthly tenders (Ron 7.9/MWh in June and Ron 9.9/MWh in July), in August 2018 it was recorded the maximum value of price of the entire year (Ron 78.8/MWh). For this type of reserve, the closing price at monthly tenders was established by Romgaz followed by CE Oltenia, and at weekly tenders by CE Hunedoara.

On the competitive component, similarly to the previous year, it was predominant the acquisition from the producer Hidroelectrica for secondary reserves (73.8%) and fast tertiary regulation (83.4%) while as regards the reserve of slow tertiary regulation, the producer with the highest market share (40.7%) was Electrocentrale Galaţi.

Besides the predominant participant, 4 other producers submitted offers at the tenders organized for the acquisition of the secondary reserve, from which it stood out CE Oltenia, with a market share of 20.8%, the other participants having low market shares (CE Hunedoara, Romgaz and Veolia Energie Prahova). As regards the acquisition of the reserve of fast tertiary regulation, even though the degree of participation of the producers was higher (CE Oltenia, Bepco, Electrocentrale Galaţi, Romgaz, Electroenergy Sud, CE Hunedoara, Electrocentrale Bucureşti, Veolia Energie Iaşi and Veolia Energie Prahova, the same participants like in 2017), sub the market share of each of them was below 4%. At the tenders organized for the reserve of slow tertiary regulation, besides the participant with the highest share, Electrocentrale

Galați, other 4 producers have taken part (Romgaz, CE Hunedoara, CE Oltenia and Electrocentrale București), with market shares significantly higher than those recorded at the tenders on fast tertiary regulation.

Details on the tenders organized by CNTEE Transelectrica S.A. are published on its website, in the chapter Energy Market/ System Technological Services Market/Info.

In the following chart they are presented the concentration indicators that characterize the STS market at level of year 2018, calculated based on the data reported monthly by CNTEE Transelectrica S.A., related to the quantities contracted for each type of reserve, at level of the entire market and detailed in a regulated regime and through market mechanisms (taking into consideration the assignments of quantities).

Year 2018		Secondary reserve	Fast tertiary reserve	Slow tertiary reserve
Total acquisition	Contracted quantity (h*MW)	4,080,788	5,960,811	6,546,960
	C1 (%)	73.2	82.9	55.6
	C3 (%)	97.35	89.60	89.75
Regulated component	Contracted quantity (h*MW)	34,560	34,560	3,562,240
	C1 (%)	100	100	88.4
	C3 (%)	100	100	100
Competitive component	Contracted quantity (h*MW)	4,046,228	5,926,251	2,984,720
	C1 (%)	73.8	83.4	40.7
	C3 (%)	97.3	90.1	85.6
	HHI	5895	6993	2902

Source: Monthly reports of CNTEE Transelectrica SA - ANRE processing

It is found and that this year as well, a high degree of concentration on all types of regulation reserves, in the conditions of the participation of a low number of producers qualified for system technological services who submitted significant offers in terms of quantity at the tenders organized by CNTEE Transelectrica S.A. on this market.

To cover the losses of power in the network, CNTEE Transelectrica S.A. buys the necessary quantities from the centralized markets administered by OPCOM, from the producers and suppliers of energy. The highest rate of the total acquisition of energy from the markets was represented by the quantities purchased from DAM (above 45%), followed by the acquisition on CMBC-EA (approx. 36%) and that on CMBC-CN (17.7%).

3.2.2. Retail electricity market

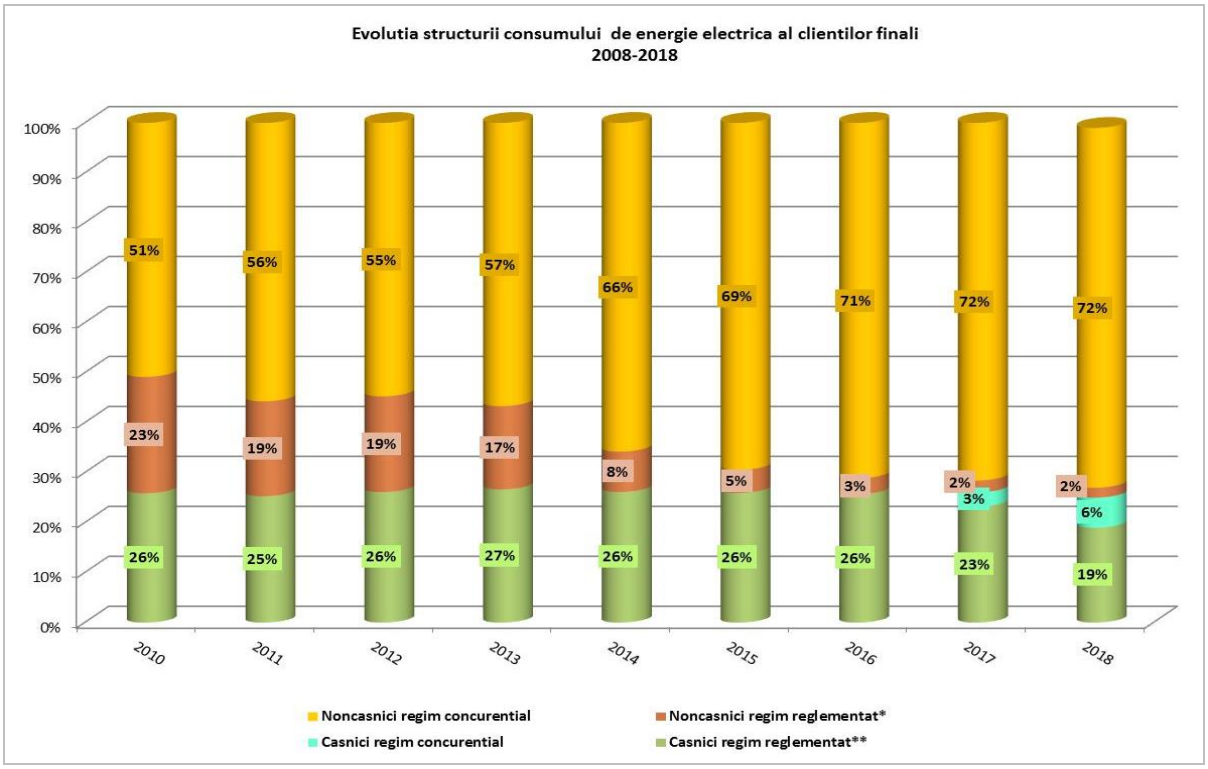
3.2.2.1 Monitoring prices, transparency, market openness and competition

During 2018, 97 holders of licenses for electricity supply were active on this market, of which 5 are suppliers designated by ANRE as SoLRs and other 25 have a license for the commercial exploitation of power generation capacities with dispatchable units.

At level of the entire year, the consumption of energy of end customers was approx. 50 TWh, by 3.3% higher compared to that of 2017. Of that, the largest quantity (approx. 74.5% of the final consumption) was represented by the consumption of non-household customers (over 37 TWh, an increase by 4% compared to 2017), while the consumption of household customers (or approx. 12.8 TWh) recorded an increase by only 1.4%.

2018 is characterized by an increase by 2.2 times compared to the previous year, of the consumption of energy in a competitive regime of household customers (of over 3 TWh), following the removal of the regulated prices. As such, amid the information campaigns and the increase of the number and diversification of the offers for the supply of energy submitted by the suppliers dedicated to the competitive segment, an increasing number of household customers decided to conclude contracts of supply at competitive prices keeping their supplier of last resort or opting for another competitive supplier. The following chart presents the structure of the consumption of energy at end costumers in the period 2010-2018, calculated on the basis of the data collected and processed by ANRE.

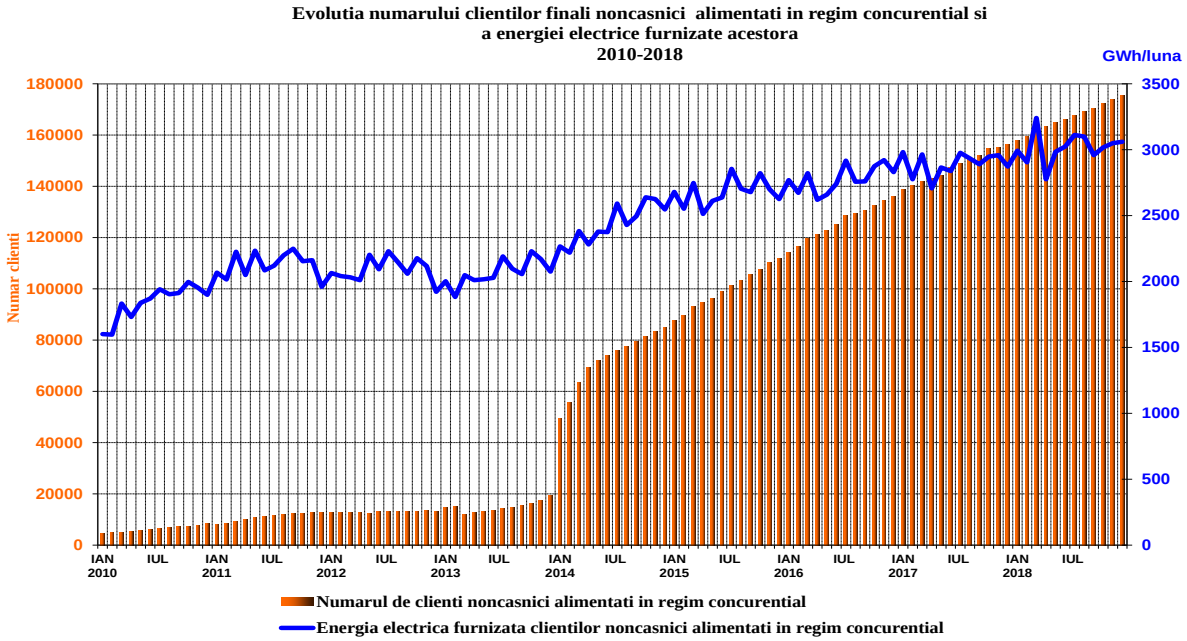
Starting from January 2017, the consumption of household costumers who moved on the competitive market is reported separately.



** non-household customers supplied in regime of SU, UI, inactive, ** household customers supplied in regime of SU*
Source: Monthly reports of suppliers - ANRE processing

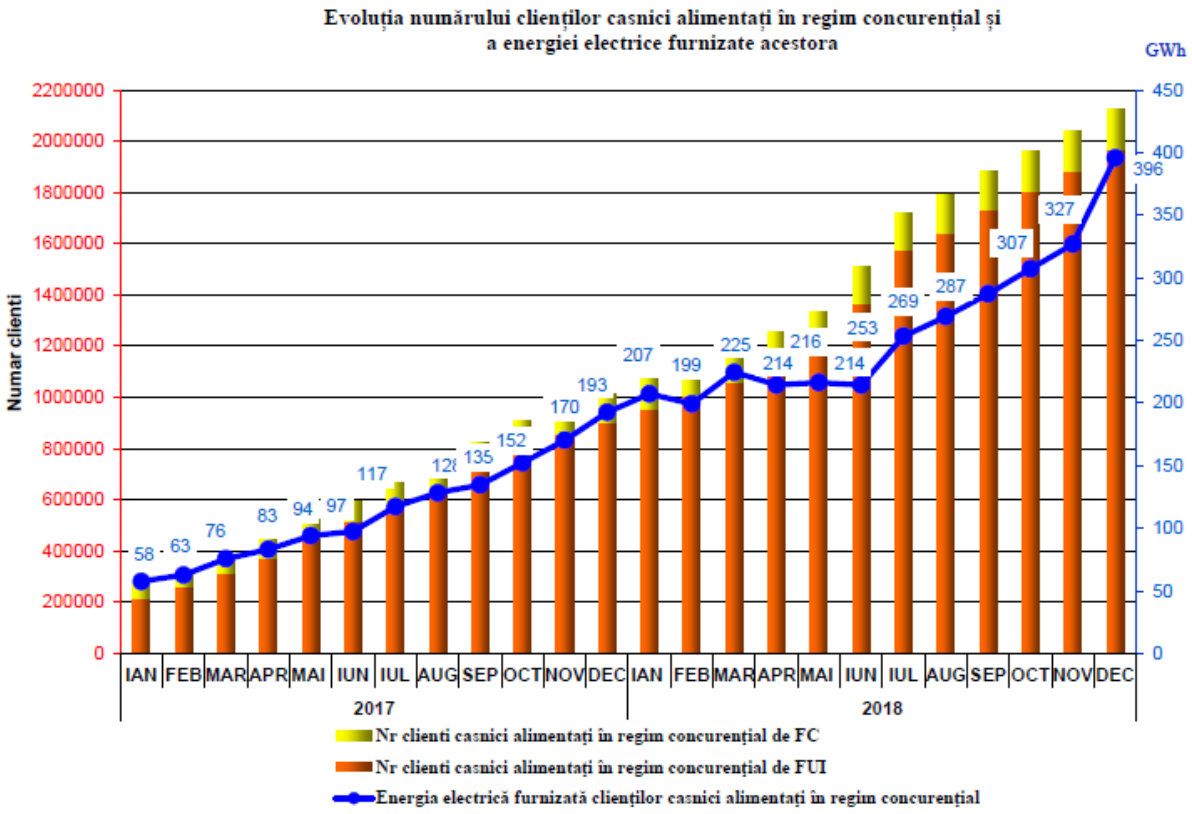
The evolution in the number of final non-household customers to whom electricity is provided under competitive conditions is represented graphically for the period 2010-2018. As shown, the number of those who exercised the right to choose the electricity supplier also registered a strong growth in 2018.

The power supplied also includes the self-supply of dispatchable producers to other places of consumption for which the annual consumption exceeds 200 GWh.



Source: Monthly reports of suppliers - ANRE processing

In case of **household customers supplied in competitive conditions,** the chart of the evolution of the number of customers and energy supplied on a monthly basis on the competitive market is drawn for the period 2017-2018 (for which the data for this type of customers was collected separately) and it is presented in the following image.



Additional information can be found in the *Report on the results of the monitoring of the energy market for the month of December 2018*, posted on the website of ANRE.

The values of the concentration indicators of the competitive retail market during 2010-2018 showcases the existence of a non-concentrated market for each year, determined by the large number of suppliers that activated on this market and their division as market power.

Year	C1 (%)	HHI
2010	14	562
2011	13	467
2012	12	530
2013	12	570
2014	13	557
2015	15	548
2016	16	572
2017	12	573
2018	10	551

Source: Monthly reports of suppliers - ANRE processing

We mention that the charts showing the market shares of final customer suppliers, calculated for the entire retail power market and separately for the competitive component of this market are presented in the

Monthly reports on the results of the monitoring of the energy market, public document posted on the website of ANRE.

In terms of market shares, the situation of the energy suppliers who recorded in 2018 rates of over 5% of the quantity of energy supplied to end customers (household and non-household) continued to be similar to that of 2017. Electrica Furnizare continues to be the supplier of energy with the highest market share, in decrease nevertheless, compared to the previous year (17.08% compared to 19.04%, the decrease of the share corresponding to a decrease of the quantity supplied to customers by approx. 7%), followed by Enel Energie Muntenia (11.27% compared to 11.49%, the energy supplied being nevertheless higher by over 1%) and E.ON Energie România (9.88% compared to 10.87%, the quantity supplied being as well in decrease by over 6%).

As regards the supply of energy on the competitive segment, in 2018 it was modified the hierarchy of the first 3 suppliers, on the first place, with the highest market share being Enel Energie Muntenia (with a quantity of supplied energy higher with almost 18% compared to the previous year), followed by Electrica Furnizare (in decrease by 11.6% compared to the energy supplied to its customers in competitive conditions in 2017) and Enel Energie (whose quantity supplied competitively increased by approx. 23% compared to 2017).

3.2.2.2 Recommendations on supply prices, investigations and measures to promote competition

The following tables present the specific dates (quantity, average price) of each category of final customers supplied under competitive regime, as per the block tariffs established by (EU) Regulation 1952/2016.

The average sale price per block tariff results from dividing the total value of suppliers' revenues from sales to a given category of customers (including the price for services such as transmission, distribution, system services, imbalances, PRE aggregation taxes, measurement) to the total quantity of the electricity sold in that block tariff. Please note that prices do not include VAT, excise or other taxes.

Block tariffs non-household customers	2018			2017		
	Annual consumption (GWh)	Average price (Ron/MWh)	No. of clients	Annual consumption (GWh)	Average price (Ron/MWh)	No. of clients
IA	1.431	396,09	128.496	1.399	355,85	113.589
IB	4.581	381,74	41.668	4.307	342,69	37.763
IC	3.601	337,74	3.567	3.439	295,38	3.370
ID	8.279	310,24	1.554	8.433	271,41	1.432
IE	4.936	288,81	135	4.678	238,37	121
IF	3.130	272,09	32	2.899	233,16	31
IG	10.299	240,73	41	9.511	209,51	24
Total	**36.256**	**299.44**	**175.493**	**34.666**	**261.41**	**156.330**

Source: Monthly reports of suppliers - ANRE processing

In case of **non-household end customers**, there is an increase of approx. 1.6 TWh of the total annual consumption compared to 2017, with an increase of approx. 12% in the total number of end customers, the highest increases in customer numbers being recorded in the IA and IG categories.

Block tariffs household customers	2018			2017		
	Annual consumption (GWh)	Average price (Ron/MWh)	No. of clients	Annual consumption (GWh)	Average price (Ron/MWh)	No. of clients
DA	1002	407,83	1.083.460	403	371,16	501.553
DB	967	410,44	690.157	402	371,67	316.651
DC	566	402,71	237.655	258	369,87	128.544
DD	417	395,61	102.747	207	365,52	60.821
DE	163	386,17	13.442	97	356,66	8.095
Total	**3.116**	**404.94**	**2,127,461**	**1.366**	**369.18**	**1,015,664**

Source: Monthly reports of suppliers - ANRE processing

In 2018, **the number of household customers who moved on the competitive market was double to the one existing at the end of year 2017**, with a consumption of approx. 2.3 times higher than the one recorded in the previous year. They are noted some important increases (from simple to double) of the number of household customers in the categories of clients DA and DB, while the consumption of the same categories exceeded a lot the consumption recorded in 2017 (by approx. 250% for DA and approx. 240% for DB). High values of end consumption were registered in 2018 also in other categories of household customers (for instance DC and DD).

Although on the whole of the competitive retail electricity market, the structure indicators indicate an unconcentrated market, in terms of block tariffs we can see that the low degree of concentration is characteristic only for IC, ID, IE, IF and IG, while for IA and IB the level of concentration is moderate, similar to the situation in 2017.

In the case of household customers supplied under a competitive regime, the concentration is high both on the whole and on each block tariff, the highest concentration being for the category of customers with a consumption below 1000 kWh (DA block), similarly to the previous year.

Tariffs regulated for household customers

Following the completion of the schedule for the elimination of regulated tariffs, in 2018 ANRE no longer established regulated contracts for the sale-purchase of energy, respectively regulated tariffs at end customers.

Tariffs/ prices applied to end customers of suppliers of last resorts in 2018

CPC tariffs

According to the schedule for the elimination of regulated tariffs, provided by the Memorandum of Understanding signed by the Romanian Government with the European Commission on March 13, 2012, starting from 2018 **the entire consumption of energy of the clients who have exercised their eligibility is ensured from the competitive market**.

For the first semester of 2018, based on the *Methodology for the establishment of the tariffs applied by suppliers of last resort to end customers*, approved by **ANRE Order no. 92/2015**, as further amended and supplemented, at the end of 2017 they have been approved the following CPC tariffs:

SoLR	**CPC Tariffs January - June 2018 [Ron/kWh]**		
	IT (110 kV)	**MT (1-110 kV excluding)**	**JT (0,1-1 kV including)**
Electrica Furnizare S.A. (Endorsement no. 42/20.12.2017)			
-Muntenia Nord	0.3329	0.3644	0.4738
-Transilvania Nord	0.3324	0.3738	0.4710
-Transilvania Sud	0.3306	0.3707	0.4711
CEZ Vânzare S.A. (Endorsement no 40/20.12.2017)	0.3516	0.3929	0.4998
E.ON Energie România S.A. (Endorsement no. 43/20.12.2017)	0.3385	0.3779	0.4975
Enel Energie Muntenia S.A. (Endorsement no. 41/20.12.2017)	0.3175	0.3460	0.4508
Enel Energie S.A. (Endorsement no. 39/22.12.2017)			
- Banat region	0.3414	0.3758	0.4785
- Dobrogea region	0.3302	0.3668	0.4877

Compared to the values approved for the second semester of 2017, **the CPC tariffs decreased on average at national level by approx. 0.3% in the first semester 2018.** According to the provisions of the *Methodology* approved by **ANRE Order no. 92/2015,** they have been approved as well the values of the CPC tariffs differentiated for the energy supplied during day hours, respectively during night hours.

Starting from the date of 1 July 2018 the differentiated CPC tariffs have been removed following the entry into force of **ANRE Order no. 102/2018** repealing ANRE Order no. 121/2017 for the approval of the conditions for the application of the tariffs component of the competitive market, to the customers benefitting from this type of tariff being applied the price for the universal service.

Price for the universal service

The price for the universal service is applied by two categories of suppliers of last resort, respectively by **bound suppliers of last resort** and **optional suppliers of last resort,** each of these categories of suppliers applying the price for the universal service approved by ANRE according to the applicable regulations.

The assignment of the suppliers of last resort is made according to the provisions of Art. 54 of the *Law no. 123/2012 on energy and natural gas, as further amended and supplemented*, respectively: *"Suppliers of last resort are assigned by ANRE from the suppliers existing on the energy market, through competitive mechanisms, based on a regulation which establishes the methods and criteria for their selection, for each category of customers they serve".*

For this purpose, the ANRE approved by **ANRE Order no. 26/2018,** *Regulation for competitive selection in view of the assignment of the suppliers of last resort,* who came into force on the date of 31 January 2018. The *Regulation* establishes the stages, terms and criteria of competitive selection for the assignment of the suppliers of last resort by ANRE, and the conditions for the performance and termination of their activity.

Through the *Regulation*, ANRE assigns two categories of SoLR, respectively bound SoLR and optional SoLR, defined as follows:

a) bound SoLR - SoLR assigned by criteria of eligibility and capacity and having imposed the fulfilment of the obligations provided for by art.53 and art. 55 para. (1) letters a) and b) of *Law no. 123/2012 on energy and natural gas, as further amended and supplemented*;
b) optional SoLR - SoLR assigned by criteria of eligibility, capacity and availability, undertaking the fulfilment of the obligations to ensure the universal service to the customers provided for by art. 55 para. (1) letter b) of *Law no. 123/2012 on energy and natural gas, as further amended and supplemented*;

For each grid area it is assigned a single bound SoLR and an unlimited number of optional SoLR; an energy supplier may be assigned as bound SoLR for maximum 3 grid areas; an energy supplier may be assigned as optional SoLR for one or several grid areas; the energy supplier assigned as bound SoLR cannot be assigned as optional SoLR too in the same grid area, but can be active at the same time as optional SoLR in other grid areas.

The mechanism of competitive assignment consists of a selection based on capacity, for bound SoLR and a selection based on capacity and availability (offer with price) for optional SoLR. Any supplier has the right to take part in the process of selection for the assignment in the capacity of bound/optional SoLR, in the conditions of fulfilment of certain eligibility criteria. The assignment of each bound/optional SoLR is made under the decision of the ANRE President.

According to the provisions of this Regulation, **they have been issued the ANRE Decisions no. 656-660 from 25.04.2018,** for the assignment of the suppliers of last resort, for each grid area, **starting from the date of 1 July 2018,** respectively:

- CEZ Vânzare S.A., for the grid area Oltenia;
- Societatea Electrica Furnizare S.A., for the grid areas Muntenia Nord, Transilvania Nord and Transilvania Sud;
- Enel Energie Muntenia S.A., for the grid area Muntenia Sud;
- Enel Energie S.A., for the grid areas Banat and Dobrogea;
- E.ON Energie România S.A., for the grid area Moldova.

By **ANRE Decision no. 1000 from 20.06.2018** it was assigned as well an optional supplier of last resort, respectively the company Enel Energie Muntenia S.A. for the grid areas Oltenia, Muntenia Nord, Transilvania Nord, Transilvania Sud and Moldova.

Considering the completion of the schedule for the elimination of regulated tariffs on the date of 31.12.2017, starting from the date of 01.07.2018 it came into force a new *Methodology for the establishment of the method of calculation and conditions of approval of prices applied by bound suppliers of last resort and optional suppliers of last resort to end customers*, approved by **ANRE Order no. 39/2018**, the purpose of which is, mainly:

- the establishment of the conditions in which ANRE approves the prices proposed by suppliers of last resort for the energy supplied to non-household customers who have not exercised, on the date of the entry into force of the law, their right of eligibility (inactive customers) and to customers benefitting under the law from the universal service (customers in US regime), in accordance with the provisions of art. 22 of the Law**;**
- the establishment of the method of calculation of the prices applied to customers who no longer have an energy supplier (customers in UI regime), in accordance with the provisions of art. 75 of the Law.

The methodology added a new principle of establishment of prices to clients in US regime, respectively the establishment of a **limit price in relation to which they are approved the prices for the universal service applied by bound SoLR.** The price for the universal service applied by the optional SoLR is established through the application of a discount on the price for the universal service applied by the bound SoLR.

The main elements comprised in the new methodology refer to:

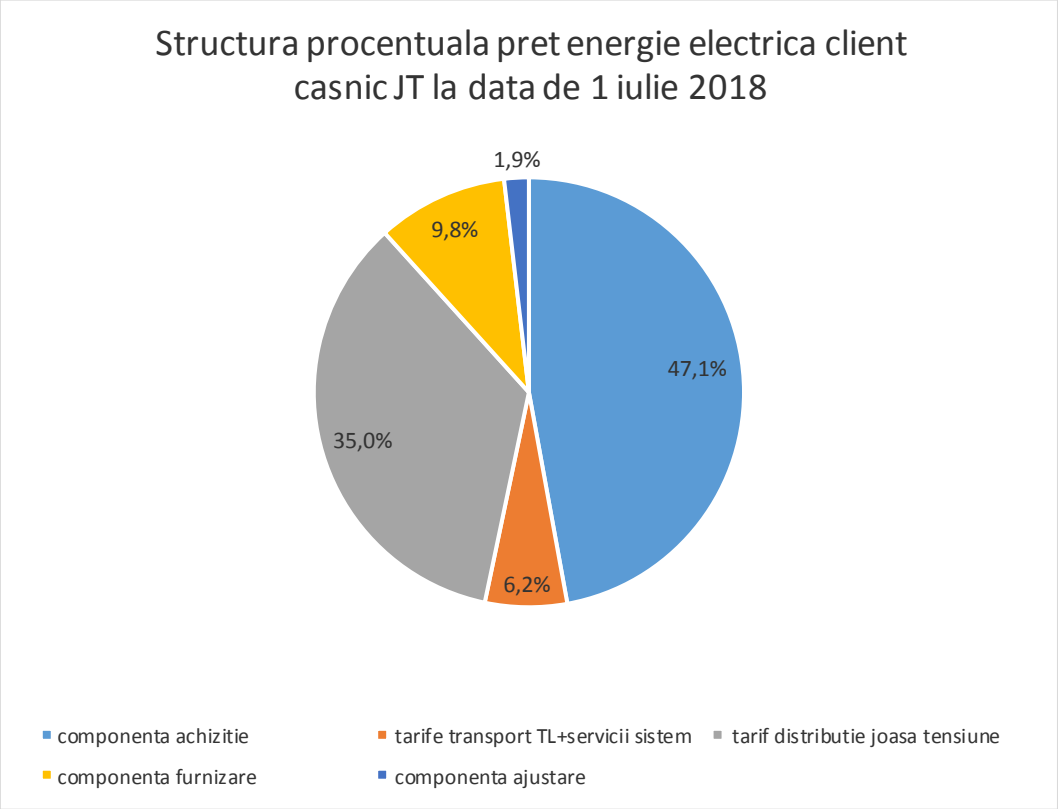
a) the use of the notions of bound supplier of last resort and optional supplier of last resort,
b) the prices approved by ANRE do not include the tariffs regulated for the services, following to be included by the SoLR in the final prices applied to end customers,
c) ANRE establishes for each bound SoLR by grid area **the maximum price for the universal service,** calculated as the sum of the cost of the energy bought from centralized markets, based on the data communicated by Opcom, by the economic operators who also have the capacity of SoLR, the component of supply determined on the basis of the values obtained in a defined period of time and the component of adjustment,
d) the price for the universal service applied to the end customers from the portfolio of the bound SoLR is established by the latter by reference to the maximum price for the universal service;
e) the price for the universal service applied to the end customers from the portfolio of the optional SoLR is established by the latter through the application of a reduction on the price for the universal service applied by the bound SoLR.

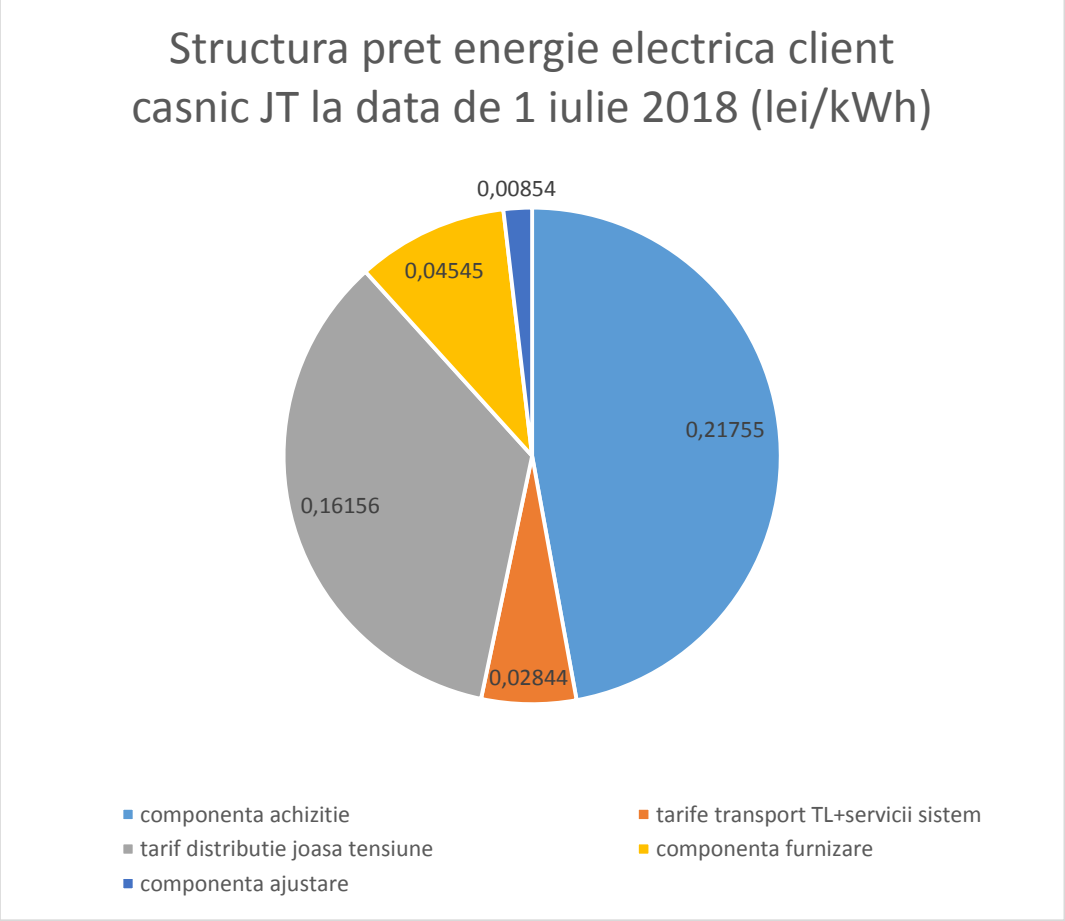
Following the enforcement of the provisions of the *Methodology for the establishment of the method of calculation and the conditions of approval of the prices applied by bound suppliers of last resort and optional suppliers of last resort to end customers*, they have been issued the following decisions and approved the following prices for the bound suppliers of last resort:

Name of bound SoLR	**Decision for the establishment of the maximum price of the US**	**Maximum price of the universal service** (Ron/kWh)	**Endorsement no.**	**Price approved for the universal service** (Ron/kWh)
CEZ Vânzare S.A.	812/22.05.2018	0.28477	16/29.05.2018	0.28477
Enel Energie S.A.	814/22.05.2018		18/29.05.2018	
- grid area Banat		0.27245		0.27245
- grid area Dobrogea		0.26120		0.26120
Enel Energie Muntenia SA	815/22.05.2018	0.24312	19/29.05.2018	0.24312
Electrica Furnizare	813/22.05.2018		17/29.05.2018	
- grid area Muntenia Nord		0.27963		0.27963
- grid area Transilvania Nord		0.27780		0.27780
- grid area Transilvania Sud		0.27021		0.27021
E.ON Energie Romania SA	816/22.05.2018	0.28321	20/29.05.2018	0.28321

The structure of the prices approved by ANRE and that of the final prices for the universal service corresponding to the bound suppliers of last resort is presented in the table below:

Bound supplier of last resort	Electrica Furnizare SA			ENEL ENERGIE SA		ENEL ENERGIE MUNTENIA SA	CEZ VANZARE SA	E.ON ENERGIE ROMANIA SA
Distribution area	Muntenia Nord	Transilvania Nord	Transilvania Sud	Banat	Dobrogea	Muntenia	Oltenia	Moldova
MU	**Ron/kWh**	**Ron/kWh**	**Ron/kWh**	**Ron/kWh**	**Ron/kWh**	**Ron/kWh**	**Ron/kWh**	**Ron/kWh**
Acquisition component	0.21309	0.21309	0.21309	0.22074	0.22074	0.22285	0.22044	0.21636
Supply component	0.04629	0.04609	0.04642	0.04405	0.03989	0.03346	0.05022	0.05721
Adjustment component	0.02026	0.01862	0.01071	0.00765	0.00057	-0.01319	0.01411	0.00963
Price of the universal service	**0.27963**	**0.27780**	**0.27021**	**0.27245**	**0.26120**	**0.24312**	**0.28477**	**0.28321**
Transmission tariff – grid extraction component - Tl	0.01689	0.01689	0.01689	0.01689	0.01689	0.01689	0.01689	0.01689
System service tariff	0.01155	0.01155	0.01155	0.01155	0.01155	0.01155	0.01155	0.01155
HV distribution tariff	0.01479	0.01873	0.02029	0.01622	0.01874	0.00938	0.02154	0.01780
MV distribution tariff	0.04633	0.06011	0.06038	0.05063	0.05529	0.03784	0.06281	0.05717
LV distribution tariff	0.15571	0.15735	0.16080	0.15332	0.17620	0.14268	0.16968	0.17672
Final price for US customers								
HV	0.32286	0.32497	0.31894	0.31711	0.30838	0.28094	0.33475	0.32945
MV	0.35440	0.36635	0.35903	0.35152	0.34493	0.30940	0.37602	0.36882
LV	0.46378	0.46359	0.45945	0.45421	0.46584	0.41424	0.48289	0.48837

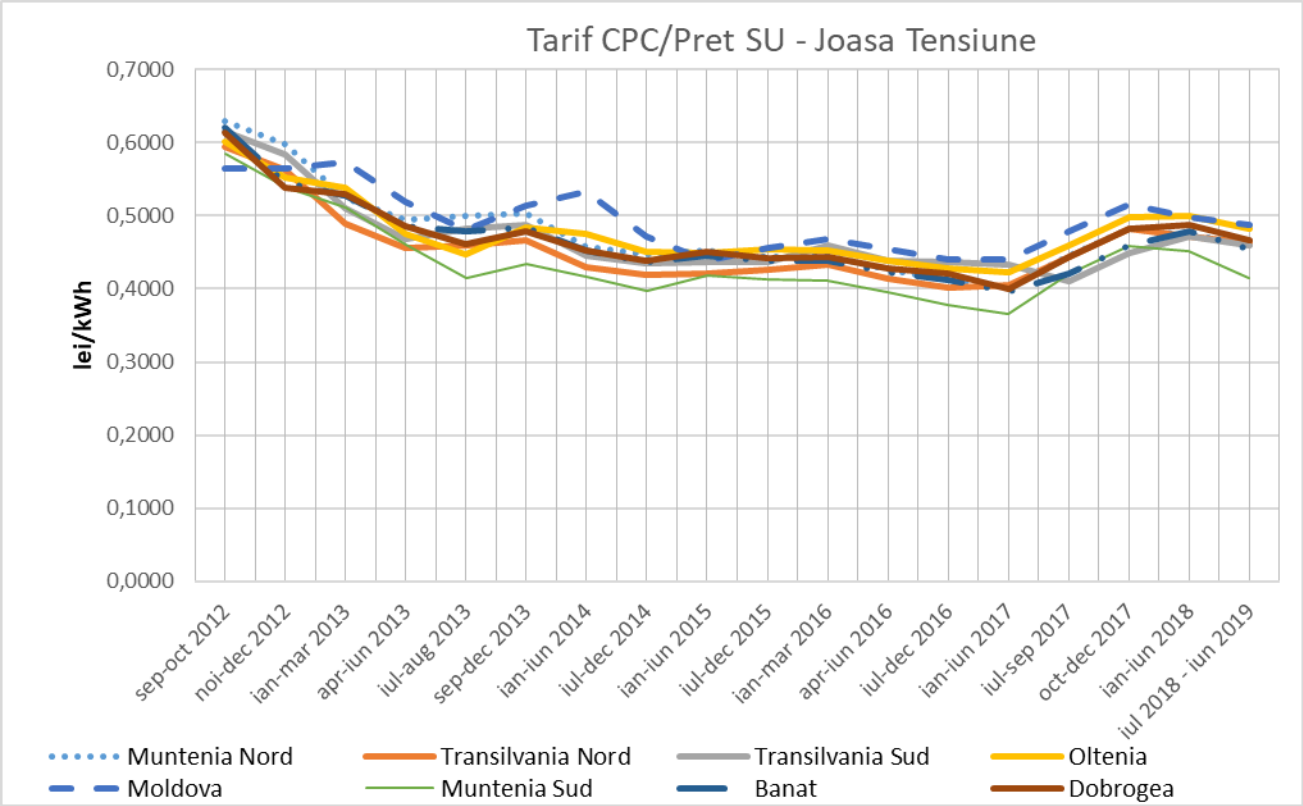

Structura procentuala pret energie electrica client casnic JT la data de 1 iulie 2018
1,9%
9,8%
47,1%
35,0%
6,2%
componenta achizitie
tarife transport TL+servicii sistem
tarif distributie joasa tensiune
componenta furnizare
componenta ajustare

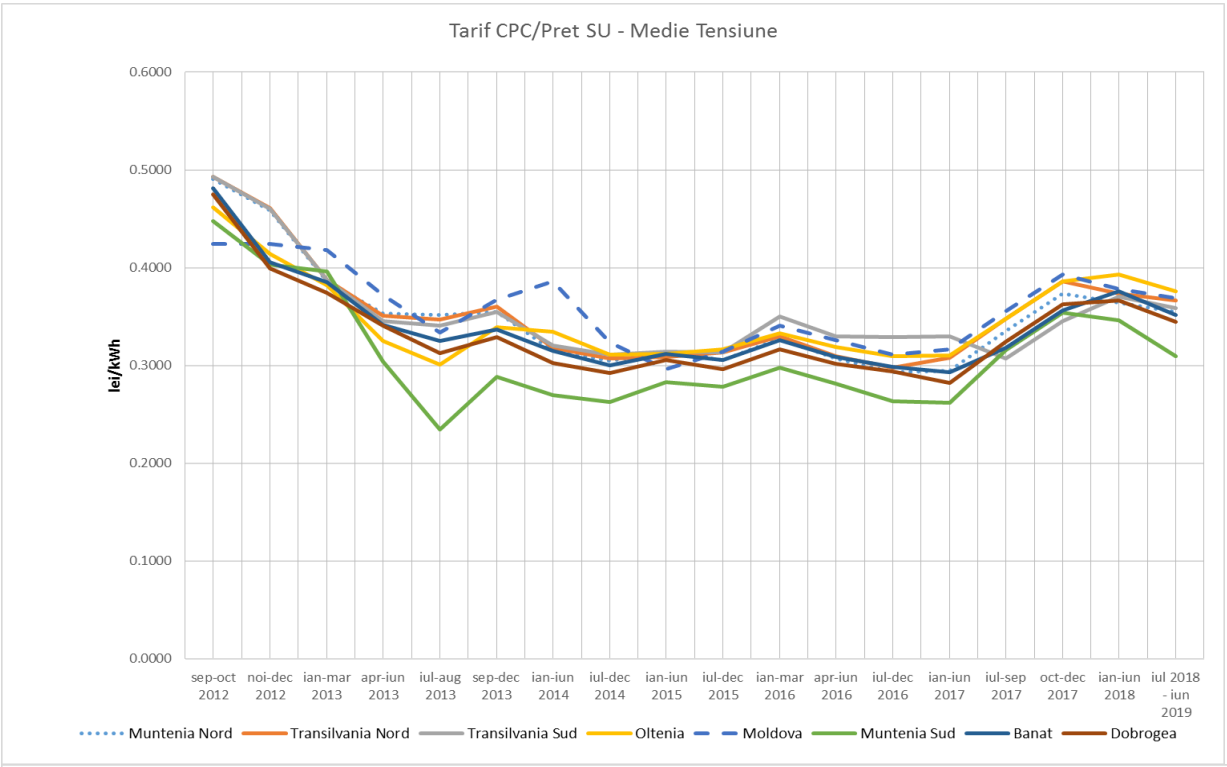

Structura pret energie electrica client casnic JT la data de 1 iulie 2018 (lei/kWh)
0,00854
0,04545
0,21755
0,16156
0,02844
componenta achizitie
tarife transport TL+servicii sistem
tarif distributie joasa tensiune
componenta furnizare
componenta ajustare

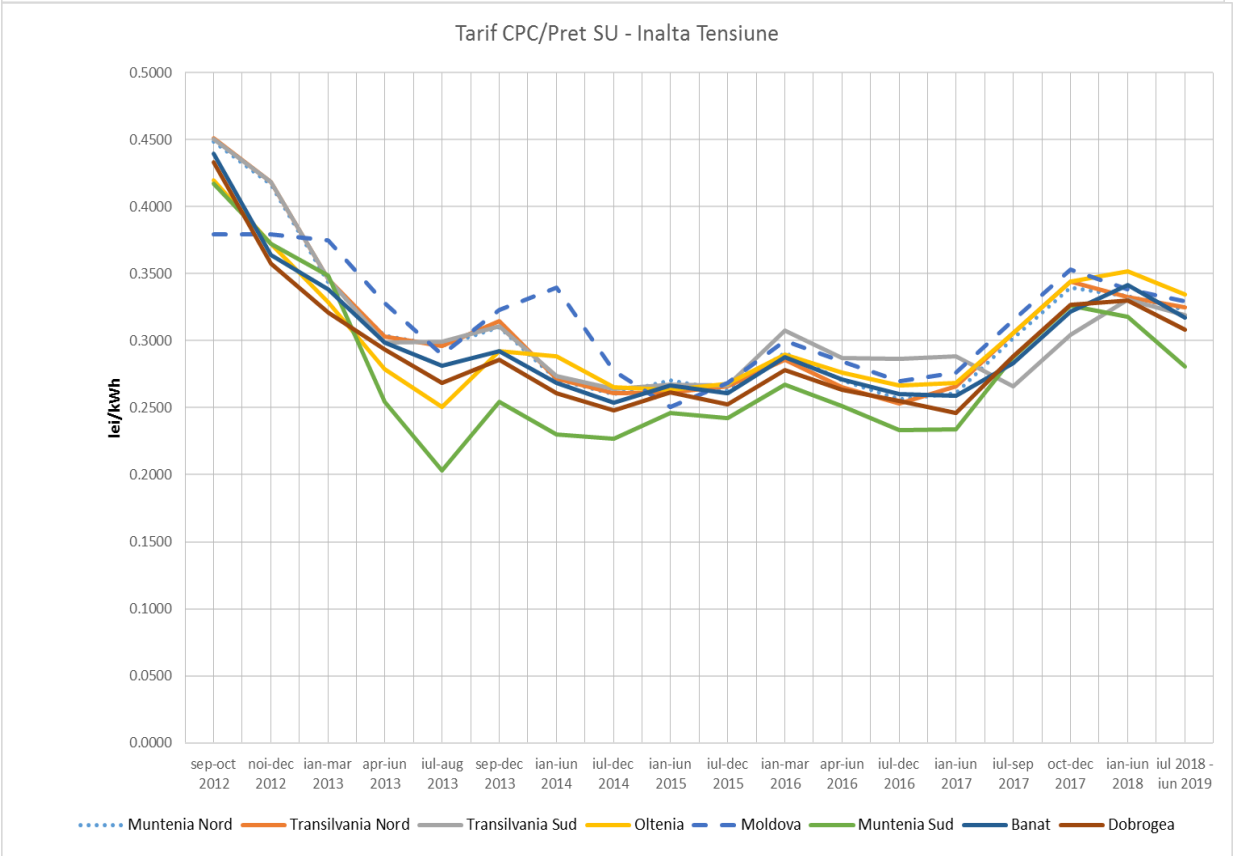
For the optional supplier of last resort Enel Energie Muntenia S.A., they have been approved through the Endorsement no. 22/20.06.2018 the following prices for the universal service:

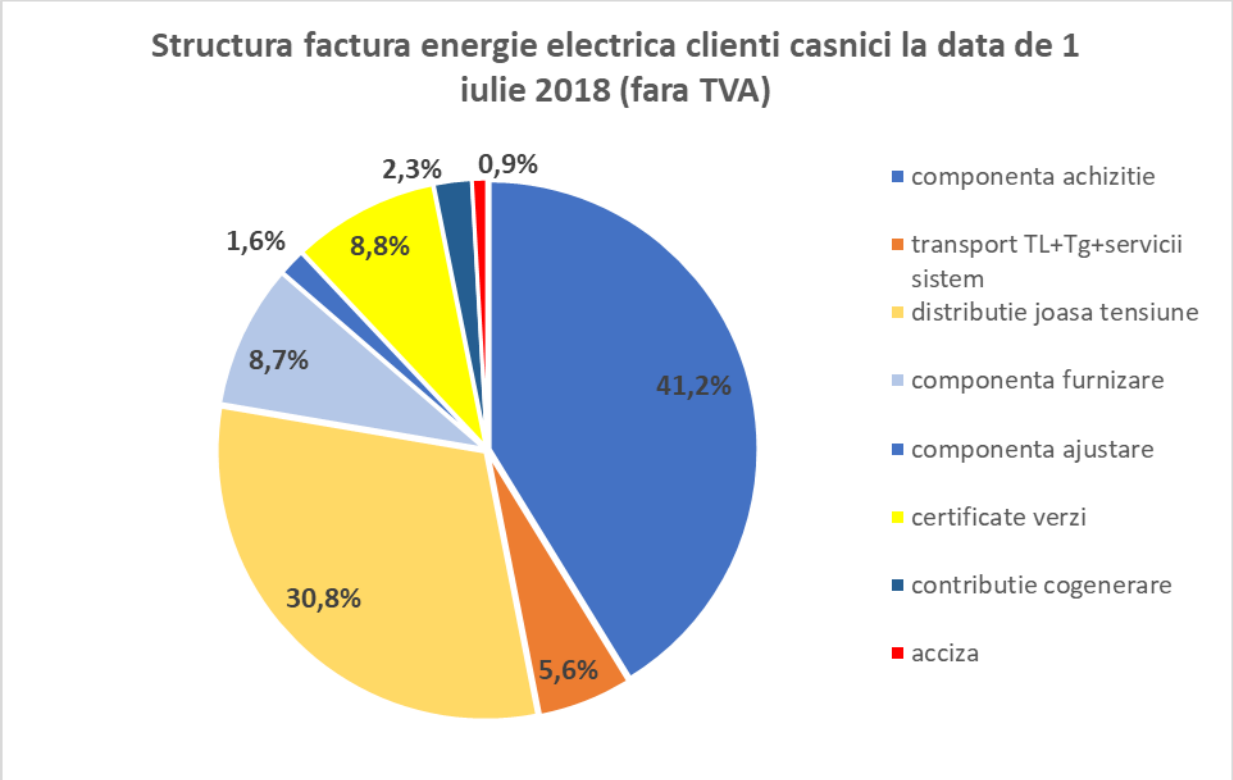
Grid area	Muntenia Nord	Transilvania Nord	Transilvania Sud	Oltenia	Moldova
Price for the universal service (Ron/kWh)	0.27879	0.27697	0.26940	0.28392	0.28236

The evolution of CPC tariffs applied to customers benefitting from the universal service until the date of 30 June 2018 and the evolution of the prices for the universal service applied to customers benefitting from the universal service starting from the date of 01 July 2018 is presented in the chart below:




Tarif CPC/Pret SU - Medie Tensiune
lei/kWh
0.6000
0.5000
0.4000
0.3000
0.2000
0.1000
0.0000
sep-oct 2012
noi-dec 2012
ian-mar 2013
apr-iun 2013
iul-aug 2013
sep-dec 2013
ian-iun 2014
iul-dec 2014
ian-iun 2015
iul-dec 2015
ian-mar 2016
apr-iun 2016
iul-dec 2016
ian-iun 2017
iul-sep 2017
oct-dec 2017
ian-iun 2018
iul 2018 - iun 2019
Muntenia Nord
Transilvania Nord
Transilvania Sud
Oltenia
Moldova
Muntenia Sud
Banat
Dobrogea


Tarif CPC/Pret SU - Inalta Tensiune
lei/kWh
0.5000
0.4500
0.4000
0.3500
0.3000
0.2500
0.2000
0.1500
0.1000
0.0500
0.0000
sep-oct 2012
noi-dec 2012
ian-mar 2013
apr-iun 2013
iul-aug 2013
sep-dec 2013
ian-iun 2014
iul-dec 2014
ian-iun 2015
iul-dec 2015
ian-mar 2016
apr-iun 2016
iul-dec 2016
ian-iun 2017
iul-sep 2017
oct-dec 2017
ian-iun 2018
iul 2018 - iun 2019
Muntenia Nord
Transilvania Nord
Transilvania Sud
Oltenia
Moldova
Muntenia Sud
Banat
Dobrogea



Regulated market monitoring reports

The following tables present information on **the number of places of consumption serviced by SoLR, the quantities of electricity sold by SoLR to end customers and the average prices of acquisition by SoLR of electricity on the wholesale market**.

It 2018, **it was maintained the downward trend of the average number of places of consumption**, compared to 2017 being recorded 1,135,888 places of consumption less, of which 99.99% represent places of consumption of household clients. This evolution is the consequence of the completion, on 31.12.2017, of the Schedule for the elimination of regulated tariffs, provided for by the Memorandum of Understanding signed by the Romanian Government with European Commission on 12 March 2012, and of the campaign initiated by the suppliers active on the competitive market in order to attract the customers from the regulated market.

The data presented is the data reported by the SoLR at the end of December 2018, respectively 2017.

SoLR / Client type	CEZ Vânzare	E.ON Energie România	Electrica Furnizare	ENEL Energie	ENEL Energie Muntenia	TOTAL FUI 2018	TOTAL FUI 2017
Total household customers	**916,224**	**1,166,834**	**3,164,210**	**596,244**	**645,622**	**6,489,134**	**7,624,987**
% household customers from total end customers	99.24%	98.69%	96.25%	95.86%	97.76%	97.21%	97.61%
Non-household in US regime	857	135	28,118	1,461	757	31,328	35,723
Inactive	5,924	15,060	94,633	24,036	13,875	153,528	149,320
Non-household taken over in UI regime	251	250	612	240	153	1,506	1,354

Total non-household customers	**7,032**	**15,445**	**123,363**	**25,737**	**14,785**	**186,362**	**186,397**
% non-household customers of the total final customers	0.76%	1.31%	3.75%	4.14%	2.24%	2.79%	2.39%
Total end customers	**923,256**	**1,182,279**	**3,287,573**	**621,981**	**660,407**	**6,675,496**	**7,811,384**

Source: Monthly reports of suppliers of last resort – ANRE processing
Note: The data corresponding to 2017 includes the adjustments received from the SoLRs during 2018.

SoLR average purchase prices of wholesale electricity on the wholesale market for year 2018

Transaction type	Customer type / Indicator type (quantity and price)	[MU]	Household customers	Non-household customers in US regime	Inactive customers	Non-household customers in UI regime	Total non-household customers	TOTAL customers
Purchase on negotiated contracts	quantity	[GWh]	2,454	0,048	0,200	0,000	0,247	2,701
	average price	[Ron/MWh]	213,48	213,52	89,41	0,00	113,29	204,30
Purchase on CMBM	quantity	[GWh]	5.922,681	66,649	503,266	11,420	581,334	6.504,015
	average price	[Ron/MWh]	216,32	214,43	230,82	239,81	229,12	217,46
Purchase on CMUS	quantity	[GWh]	2.182,322	25,693	-	-	25,693	2.208,015
	average price	[Ron/MWh]	238,96	240,26	-	-	240,26	238,98
Purchase on IDM	quantity	[GWh]	0,415	0,002	0,500	0,015	0,516	0,931
	average price	[Ron/MWh]	342,60	347,03	394,90	392,77	394,68	371,47
Purchase on DAM	quantity	[GWh]	1.996,452	24,180	246,532	9,683	280,394	2.276,847
	average price	[Ron/MWh]	253,41	264,72	253,31	230,64	253,51	253,42
Purchase on BM	quantity	[GWh]	423,915	3,734	187,453	7,861	199,049	622,964
	average price	[Ron/MWh]	274,85	282,89	292,31	282,80	291,76	280,25
Total purchase	**quantity**	**[GWh]**	**10.528,24**	**120,31**	**937,95**	**28,98**	**1.087,23**	**11.615,47**
	average price	**[Ron/MWh]**	**230,41**	**232,18**	**249,08**	**248,49**	**247,19**	**231,98**
Sale on DAM	quantity	[GWh]	-243,905	-1,924	-14,647	-0,682	-17,253	-261,158
	average price	[Ron/MWh]	178,22	175,16	165,02	220,13	168,33	177,57
Sale on BM	quantity	[GWh]	-627,516	-6,255	-66,964	-3,368	-76,587	-704,103
	average price	[Ron/MWh]	178,71	171,00	182,81	212,53	183,15	179,19
Total sale	**quantity**	**[GWh]**	**-871,42**	**-8,18**	**-81,61**	**-4,05**	**-93,84**	**-965,26**
	average price	**[Ron/MWh]**	**178,57**	**171,98**	**179,61**	**213,81**	**180,42**	**178,75**
Net sale	**quantity**	**[GWh]**	**9.656,82**	**112,13**	**856,34**	**24,93**	**993,39**	**10.650,21**
	average price	**[Ron/MWh]**	**235,08**	**236,57**	**255,69**	**254,12**	**253,50**	**236,80**

Source: Monthly reports of suppliers of last resort – ANRE processing

In 2018 compared to 2017, **the average net purchase price increased with approximately 15.9%** (Ron 32/MWh), given:

- the termination of the process of implementation of the schedule for the eliminated of regulated tariff on 31.12.2017; in 2017, the purchase of energy under regulated contracts represented

approximately 14% of the total purchase of energy aimed at end customers from the regulated market;

- the market conditions already presented;
- the policy of purchase on DAM of the SoLRs (approx. 21%), in the context in which the price paid by SoLRs for this type of purchase increased in 2018 compared to 2017 by Ron 11.66/MWh (5%).
- the modification of the conditions of participation of SoLRs on CMUS for the purchase of energy aimed to cover the consumption of the end customers serviced in regime of universal service and of the regulatory framework.

Quantities of energy sold by SoLRs to end costumers in 2018

Client type / **Indicator type** (qnt., val., average price)	**[MU]**	**Household customers**	**Non-household customers in US regime**	**Inactive customers**	**Non-household customers in UI regime**	**Total non-household customers**	**TOTAL customers**
quantity	[GWh]	9,656.82	112.13	856.38	24.89	993.40	**10,650.21**
value	[thousand Ron]	4.543.138.93	51,571.73	419,604.25	11,334.06	482,510.05	5,025,648.98
average price	[Ron/MWh]	470.46	459.94	489.98	455.37	485.72	471.88

Source: Monthly reports of suppliers of last resort – ANRE processing
Note: The prices do not include the VAT, excise duties or other taxes.

SoLR / **Type of customer**	**Type of indicator**	**[MU]**	**CEZ Vânzare**	**E.ON Energie România**	**Electrica Furnizare**	**ENEL Energie**	**ENEL Energie Muntenia**	**TOTAL FUI 2018**	**TOTAL FUI 2017**
Household customers	quantity	[GWh]	1,390.74	1,417.50	4,343.37	1,067.25	1.437,96	9,656.82	11,231.11
	value	[thousand Ron]	682,638	699,286	2,033,857	503,439	623,920	4,543,139	4,760,093
	average price	[Ron/MWh]	490.85	493.32	468.27	471.72	433.89	470.46	423.83
Non-household customers	quantity	[GWh]	38.16	65.46	513.76	128.48	247.54	993.40	1,144.90
	value	[thousand Ron]	19,659	34,543	254,243	64,033	110,032	482,510	496,819
	average price	[Ron/MWh]	515.23	527.65	494.87	498.41	444.50	485.72	433.94
Total customers	quantity	[GWh]	1,428.89	1,482.97	4,857.13	1,195.73	1,685.50	10,650.21	12,376.01
	value	[thousand Ron]	702,297	733,828	2.288.100	567,472	733,952	5,025,649	5,256,912
	average price	[Ron/MWh]	491.50	494.84	471.08	474.58	435.45	471.88	424.77

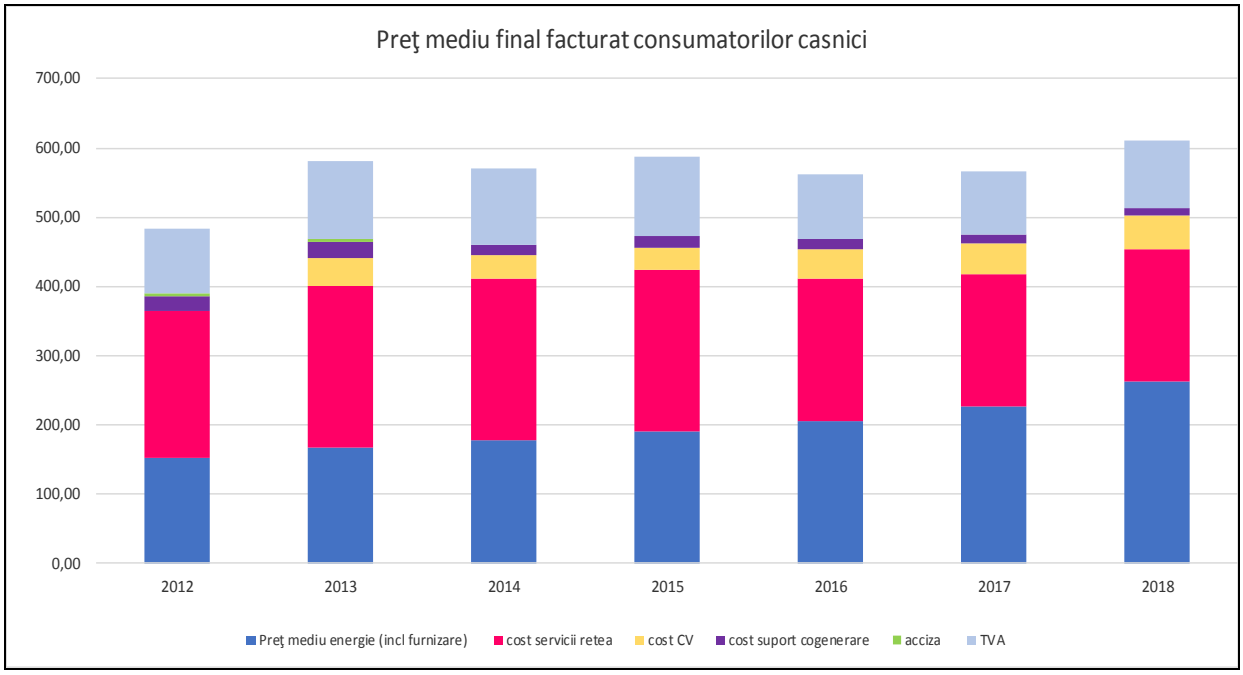
Source: Monthly reports of suppliers of last resort – ANRE processing
Note: The prices do not include the VAT, excise duties or other taxes. The data corresponding to 2017 include the adjustments received from the SoLRs during 2018.

Correlated with the decrease of the average number of places of consumption, it is noted a decrease of the consumption of energy in 2018 compared to 2017, by 1,725.79 GWh.

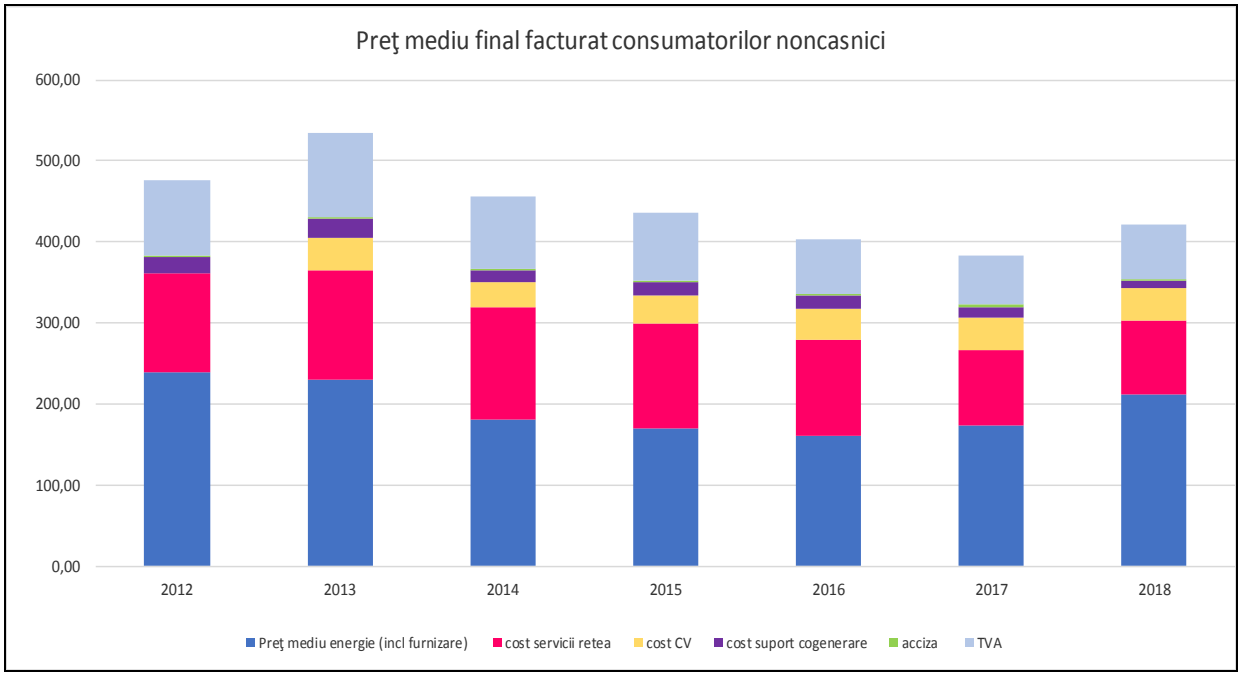
The increase of the net purchase average price reflected also in the average price of sale that recorded as well an increase in 2018 compared to 2017 by 11% (Ron 47/MWh). The increase of the net purchase average price was partly compensated by the decrease of the regulated tariffs of transmission and distribution in the analysed period.

Analysis of the average price of electricity invoiced to final customers

This section includes the evolution of the components of the average price for the electricity invoiced to final customers, household and non-household, cumulative for the regulated market and the competitive market, during 2012-2018.



Source: Monthly reports of suppliers – ANRE processing



Source: Monthly reports of suppliers – ANRE processing

In 2018, for end customers, the average sale price of energy, excluding the cost of grid services and charges, registered an increase compared to the previous year by 19.8% (Ron 37/MWh). In case of non-household customers, this price increased by 21.3%, and in case of household customers, by 16.7%, as it results from the following table as well. This evolution

was determined by the prices at which they have been concluded the transactions on the centralized markets of contracts and on DAM.

- Ron/MWh -

	Household customers			Non-household customers		
	Price without tax	Price with tax	Tariff network services	Price without tax	Price with tax	Tariff network services
year 2012	365.24	482.42	213.84	361.37	475.43	123.02
year 2013	400.11	581.31	232.74	364.45	534.42	134.35
year 2014	412.06	575.07	234.66	318.97	455.35	138.77
year 2015	422.81	592.80	231.73	299.64	436.83	130.54
year 2016	411.25	566.66	205.56	279.29	403.36	118.67
year 2017	416.97	570.61	191.77	266.49	383.47	92.62
year 2018	454.10	615.79	191.30	302.94	421.84	91.95

Source: Monthly reports of suppliers – ANRE processing

In 2018 it was recorded a significant increase of the final average price of sale (with taxes) of energy, both for household customers, as well as for non-household customers, following the changes intervened on the energy market.

3.3. Security of power supply

In accordance with Art. 24 of the *Law no. 123/2012 on energy and natural gas, as further amended and supplemented*, in the event of unexpected crisis situations on the energy market and if the physical security or safety of persons, devices or installations or the integrity of the system is threatened, the transmission system operator proposes to ANRE and the ministry to adopt safety measures. Measures taken in these situations must affect as little as possible the proper operation of the European internal market and should be limited to solving the crisis that generated them. The implementation of these measures is done by Government decision, initiated by the relevant ministry.

3.3.1 Monitoring balance between supply and demand

Measures taken in 2018 to cover the peak of consumption as well as energy deficits

According to the legal provisions, CNTEE Transelectrica S.A. as TSO is responsible for ensuring NPS operation safety, frequency and tension stability, continuity in customer service and coordination of electricity exchanges with other power systems.

In order to meet this responsibility, TSO determined the possibility of a crisis situation in the operation of the NPS based on short and medium term analysis of NPS adequacy using information on fuel stocks, the state of the National Gas Transmission System, the volume of water reserves in storage lakes, the availability of power generation units, electricity consumption forecast for NPS or an area of the NPS, availability of RET and RED. As a result of this analysis, if a crisis situation is identified on the energy market, TSO is obliged to propose to ANRE and to the ministry the adoption of safety measures.

For the winter period from **November 2017 to March 2018**, taking into account the evolution of the consumption of energy from the period between 1 January – 1 September 2017, the inexistence of some signals regarding the occurrence of new economic operators with a relevant consumption of energy, the scenario of the National Power Dispatcher that takes into consideration a correction of the influence of the lower monthly average temperatures with 1-2°C, the TSO estimated an average increase of the consumption taken into account for the period between 15 November 2017 – 15 March 2018 by 1.1% compared to the values of the similar period corresponding to the Winter program of the previous year.

For the peak charges forecast for the winter 2017-2018, the National Power Dispatcher completed the balance between production and consumption in which it was taken into consideration a scenario starting from the following hypotheses:

a) the registration of a period of 7-10 freezing days, with negative temperatures, between minus 15°C to minus 20°C;

b) the structure of the evening peak production:

- without the contribution of wind and photovoltaic plants, natural limitations or dictated by technological protections;
- with reductions of power until the stop of the natural gas plants, small pressures in the natural gas transmission network;

c) at the consumption peak, the hourly maximum average value is 9,750 MW, identical to that recorded in January 2017. The instant maximum value was 9,991 MW. On the basis of these hypotheses they have been established the conditions for ensuring the adequacy of the NPS and they have been provided the necessary technical and organizational conditions.

These conditions have been provided for by *GD no. 760/2017 on the approval of the winter program in the field of energy regarding the measures to achieve NPS fuel safety stocks for the cold season and the volume of water in storage lakes, entitled the Winter Energy Program for the safe operation and stability of NPS in the period between 15 November 2017 and 15 March 2018, as well as other measures regarding the level of safety and security of NPS operations*.

The provisions of **GD no. 760/2017** established that TSO would acquire regulated technological services from S.C. Electrocentrale Galați S.A. – CET Galați, S.C. Electrocentrale București S.A., S.C. Veolia Energie Prahova – CET Brazi pentru combustibil alternativ păcură and S.C. Complexul Energetic Hunedoara S.A. As a consequence, ANRE approved the following decisions regarding the purchase of regulated technological services:

- **ANRE Decision no. 1814/12.12.2017**, on the prices and quantities regulated for the purchase of system technological services in the period between 3 January – 15 March 2018 supplied by S.C. Complexul Energetic Hunedoara S.A.
- **ANRE Decision no. 1815/12.12.2017**, on the purchase of the system technological service – slow tertiary reserve supplied by the company Electrocentrale București S.A. with groups functioning with alternative fuel, respectively heating oil, for the period between 3 January- 15 March 2018
- **ANRE Decision no. 1908/22.12.2017**, on the purchase of the system technological service – slow tertiary reserve supplied by the company Veolia Energie Prahova S.R.L. with groups from CET Brazi, functioning with alternative fuel, respectively heating oil, for the period 3 January - 15 March 2018.

Similarly, for the **period from 1 November 2018 to 31 March 2019**, the National Power Dispatcher has taken into consideration a scenario with lower temperatures with 1-2° C compared to the multiannual monthly average values, the effect of which is an increase of the

average gross domestic consumption of energy by approx. 2% compared to the values recorded in the period similar to the previous year. For the same period though, the National Commission for Strategy and Prognosis estimated a decrease of the national consumption of energy by approx. 1.7% compared to that recorded in the period between 1 November 2017-31 March 2018.

Under these conditions, being given the need for a dimensioning which is appropriate and covering the stocks of fuels and volumes of water in the great reservoirs on the date of 1 November 2018, in the analysis for the estimation of the consumption of energy it has been taken into consideration the prognosis of the National Power Dispatcher, respectively the increase of the consumption of energy of the country on average by 2% compared to the consumption recorded in the similar period of the winter 2017-2018.

For the peak charges forecast for winter 2018-2019, the National Power Dispatcher estimated a balanced between the production and the consumption in which it has been taken into consideration a scenario starting from the following hypotheses:
a) the registration of a period of 7-10 freezing days, with negative temperatures (–15°C – 20°C);
b) the hourly maximum average value considered at consumption peak is 9,900 MW;
c) the structure of the evening peak production without the contribution of wind and photovoltaic plants (natural limitations or dictated by technological protections) and with power reductions, until the stop of the natural gas plants (small pressures in the natural gas transmission network).

Based on these hypotheses they have been established the conditions for ensuring the NPS adequacy and they have been provided the necessary technical and organizational conditions.

These conditions have been provided for by *GD no. 773/2018 for the approval of the measures regarding the level of safety and security of operation of the National Power System, and the measures related to the completion of the safety stocks of the NPS as regards fuels and the water volume from reservoirs for the period between 1 November 2018-31 March 2019.*

The provisions of **GD no. 773/2018** established that the TSO would acquire regulated technological services from the producers Electrocentrale București S.A. and Electrocentrale Galați S.A. provided by the groups with alternative fuel, heating oil and furnace gas.

Based on **GD no. 773/2018**, it was approved by **ANRE Decision no. 1911/28.11.2018** the purchase of the system technological services – slow tertiary reserve supplied by the company Electrocentrale Galați S.A. with group from CET Galați functioning with alternative fuels, respectively heating oil, for the period between 1 December 2018 – 31 March 2019.

3.3.2. Monitoring the achievement of investments in production capacities in relation to supply safety

Forecast of the NPS balance between production and consumption for a period of 10 years

ANRE monitors the adequacy of the NPS based on the information and analyses submitted by TSO in the RET Development Plan and the RET Investment Plan. The RET Development Plan is updated every two years so that at the time of the current Activity Report, the ***RET Development Plan for 2018-2027***, which was approved by ***ANRE Decision no. 1604 from 5 October 2018*** is in force.

Within the ***RET Development Plan for 2018-2027***, TSO analysed the adequacy of the NPS in the 2018-2022-2027 perspective.

The production park in a system is considered adequate if it can cover the demand for electricity in all stationary regimes in which the national power system (NPS) can operate under normal conditions.

For the assessment in perspective, it has been verified the capacity of production for the time of the year when it is reached in the NPS the maximum value of consumption, namely the winter evening peak, using the methodology applied at European level within ENTSO-E. According to the this methodology, it is considered that, in order to cover the demand under conditions of security, it is necessary to exist in the power system a certain power available ensured by energy production units, significantly higher than the power consumed at consumption peak, being given that some of these units are withdrawn from operation for maintenance and planned repairs or they may be affected by unplanned unavailability or partial reduction of the availability, temporary or final, for different reasons. Also, to create the conditions to ensure the safe supply of energy it must be maintained at all times at disposal of the TSO a reserve of capacity of operational, secondary, fast tertiary and slow tertiary production, which is sized and mobilized to balance the production and the consumption in accordance with the provisions of the technical codes.

Once with the installation of a significant volume of wind power plants, characterized by an intermittent regime of operation, and with a random evolution of the available power, the need for a fast tertiary reserve grows as a consequence of the unpredictable production in these plants.

The main factors that will influence in the following years the need for a power reserve shall be: the improvement of the indicators of reliability of production units, that shall act in the meaning of the decrease of the need of power reserve and the increase of the weight of the power installed in wind power plants, that shall act in the meaning of the increase of the need for a power reserve.

The estimation of the adequacy of the production park in the 2018-2022-2027 perspective, in the reference scenario of variation of consumption (in which it was considered a cumulative increase of the energy consumption by approx. 2.7% on medium term, namely until 2022, and by other approx. 5.2% on the long term, namely until 2027), leads to the conclusion that the surplus of net power available in the system is approx. 11% of the net capacity of production in 2018, value that continues to be quasi-consistent also after the commissioning of units 3 and 4 of Cernavodă (12% due to the gradual reduction of the capacity of production from the units which function on the basis of fossil fuel, on one hand, and due to the increase of the consumption, on other hand, according to the data from the table below:

Adequacy of the production park in the NPS – Reference scenario

				MW
	Putere netă in SEN	**2018**	**2022**	**2027**
1	centrale nucleare	**1300**	**1300**	**2630**
2	centrale termoelectrice conventionale	**6559**	**7148**	**6529**
	• pe lignit	2676	3193	2860
	• pe huila	428	428	428
	• pe gaze naturale / hidrocarburi	3456	3528	3241
3	resurse energetice regenerabile	**4500**	**5100**	**5500**
	• eoliene	3000	3400	3600
	• fotovoltaice	1350	1500	1600
	• biomasa	150	200	300
4	centrale hidroelectrice	**6436**	**6505**	**6532**
	• CHEAP			
5	**Capacitatea netă de producere [5=1+2+3+4]**	**18796**	**20053**	**21190**
6	Putere indisponibilă totala	7946	8628	8924
	• Putere indisponibilă (Reduceri temporare+conservari)	4512	4940	5175
	• Putere in reparatie planificată	1110	1184	1115
	• Putere in reparatie accidentală (după avarie)	1217	1277	1347
	• Rezerva de putere pentru servicii de sistem	1107	1227	1287
7	**Puterea disponibilă netă asigurată [7=5-6]**	**10850**	**11425**	**12266**
8	Consum intern net la varful de sarcina	8855	9185	9690
9	**Capacitate rămasă (fără considerarea schimburilor cu alte sisteme)**	**1995**	**2241**	**2576**
10	Sold Import-Export la varful de sarcina	-800	-1000	-1200

In the favourable consumption variation scenario, characterized by an increase in electricity consumption by 5.08 % annually in the medium run (2022) and 4.67 % in the long run (2027) and a "green" evolution scenario for the production capacities, characterized by increased power installed in renewable energy sources, due to economic and financial conditions conducive to the implementation of energy policies promoted at European Union level, the surplus net power available in the system will be about 11% of the net production capacity. The increase of power unavailable in this scenario is due to the unforeseeable component associated to the increased production from renewable sources, especially from wind and photovoltaic sources. In this case, the prognosis of the adequacy considered the fact that the consequence of the installation of wind and solar plants is the increase of the power unavailable as a consequence of the specificity of the intermittent operation of these plants, characterized by a small number of hours of use of the maximum power. As the availability of wind and solar power plants is limited during the year and their production is not controllable, as is the case with conventional power plants, in order to ensure suitability it is imperative to have a certain amount of power in peak conventional plants with quick start and/or capacities to store energy, for instance power storage hydro plants, technologies and equipment for power storage etc.

Suitability of the production park from NPS - Favourable Scenario regarding the consumption/ "Green" scenario regarding capacities

				MW
	Putere netă in SEN	**2018**	**2022**	**2027**
1	centrale nucleare	**1300**	**1300**	**2630**
2	centrale termoelectrice conventionale	**6559**	**7148**	**6529**
	• pe lignit	2676	3193	2860
	• pe huila	428	428	428
	• pe gaze naturale / hidrocarburi	3456	3528	3241
3	resurse energetice regenerabile	**4500**	**5100**	**6500**
	• eoliene	3000	3400	4000
	• fotovoltaice	1350	1500	2000
	• biomasa	150	200	500
4	centrale hidroelectrice	**6436**	**6505**	**6532**
	• CHEAP			
5	**Capacitatea netă de producere [5=1+2+3+4]**	**18796**	**20053**	**22190**
6	Putere indisponibilă totala	7946	8666	9738
	• Putere indisponibilă (Reduceri temporare+conservari)	4512	4940	5815
	• Putere in reparatie planificată	1110	1179	1135
	• Putere in reparatie accidentală (după avarie)	1217	1321	1382
	• Rezerva de putere pentru servicii de sistem	1107	1227	1407
7	**Puterea disponibilă netă asigurată [7=5-6]**	**10850**	**11387**	**12452**
8	Consum intern net la varful de sarcina	8855	9500	9940
9	**Capacitate rămasă (fără considerarea schimburilor cu alte sisteme)**	**1995**	**1886**	**2512**
10	Sold Import-Export la varful de sarcina	-800	-1000	-1200

Integration of wind and photovoltaic power plants into the load curve requires conventional plants to provide a frequency adjustment function to compensate for power variations produced by them due to variations in primary renewable energy, significantly increasing the frequency of the cases in which thermoelectric groups must work with partial load or be turned off and then turned back on. It is therefore necessary to install peak power plants in the system because the operation of wind and photovoltaic plants has negative implications on the production costs and the lifetime of the basic operation groups.

To be noted that, if in 2016 the suitability of the system was 14%, it decreased in 2018 by 11% given the reduction of the capacity of conventional thermoelectric plants and the increase of the capacity of plants from renewable sources.

Assessment of the evolution of safety in power supply for a period of 15 years

In order to estimate the security of electricity supply, account shall be taken of the evolution of national consumption and capacity of production installed in NPS, as well as the evolution of demand for cross-border exchanges of electricity.

For a long time horizon until 2040, at community level the "Ten-Year Power Transmission Network Development Plan" (TYNDP) of 2018 was drawn up, in accordance with Art. 8 para. (10) of (EU) *Regulation No. 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions of access to the network for cross-border exchanges of electricity*.

ENTSO-E published for consultation in October 2017 the scenarios analysed under TYNDP 2018, for both gas and electricity, based on which decisions are made for future investment needs in the transmission infrastructure.

The assessments for the necessary conditions to ensure the safety in electricity supply for 2020-2030-2040 are further presented according to the scenarios elaborated under TYNDP 2018 mentioned above. The plan takes into account the integrated model of the European electric grid and it is based on the national plans for the development of the power transmission network for ten years, taking into account regional investment plans as well as Community-wide network planning issues, including projects of common interest ensuring the development of cross-border transmission capacities.

TYNDP 2018 provides development plants for power transmission grids for the time horizon 2020 - 2030 - 2040, taking into account several scenarios for the evolution of the consumption of energy, of the level and structure of capacities installed for the production of energy and level and structure of energy produced.

The scenarios of TYNDP 2018 include a **„Best Estimate" (BE)** short- and medium-term scenario (including an analysis of sensitivity of the merit order between coal and natural gas for 2025) and **three long term scenarios** reflecting the changes necessary in the production and use of energy to reach decarbonization targets. Until 2030, the scenarios are built on the hypothesis that gas precedes coal in the merit order, taking into account the prices of production and the need for the reduction of greenhouse gas emissions.

The scenarios considered for the time horizon 2030 - 2040 have been established according to the national policies and energy targets of the European Union related to the evolution of the power installed in power plants based on renewable energy sources and the reduction of carbon emissions, having as starting point the EUCO 30 scenario elaborated in 2016 under the aegis of the European Commission as a basic scenario of the policies of the commission, as follows:

- **„Sustainable Transition" (ST)** - The sustainable transition aims for a quick and sustainable reduction of CO_2 emission through the replacement of the coal with gas in the energy sector. The electrification of the heat and transmission develops in a slower rhythm than in other scenarios. In this scenario, the fulfilment of the EU objective for the reduction of CO_2 emissions by 80-95% until 2050 requires a quick development during the time horizon of 2040, through the intensive adoption of the technological progress.
- **„Distributed Generation" (DG)** – The distributed generation allows prosumers' participation on the market. This scenario represents a decentralized development of the energy production, with a focus on the technologies to end customers. The smart technology and the equipment/installation using double fuel, such as hybrid heat pumps, allow consumers to adopt changes in the use of energy depending on the market conditions. Electric vehicles start to have a wider use, they increase the capacity of generation from photovoltaic source and they start to be installed in buildings that are storage units. This evolution helps reaching a high level of response at level of demand by reference to power generation and supply. This scenario provides as well an increase of the use of biogas for the generation of power through the recovery of local raw materials.
- **„Global Climate Action" (GCA)** - Global Climate Action (GCA) represents a global effort for accelerated decarbonisation. The focus is on the use of energy from renewable sources on large scale and even on nuclear energy. Residential and commercial thermal energy becomes more electrified, which leads to a consistent decrease of the demand of gas in this sector. The decarbonization of the transmission is made both through the increase of the use of electric vehicles, as well as through the increase of the use of gas in this sector. The measures for energy efficiency affect all sectors. In this scenario it is provided the strongest development of the generation of energy on the basis of natural gas.

In the image below it is presented the diagram of the development of the scenarios from TYNDP 2018:

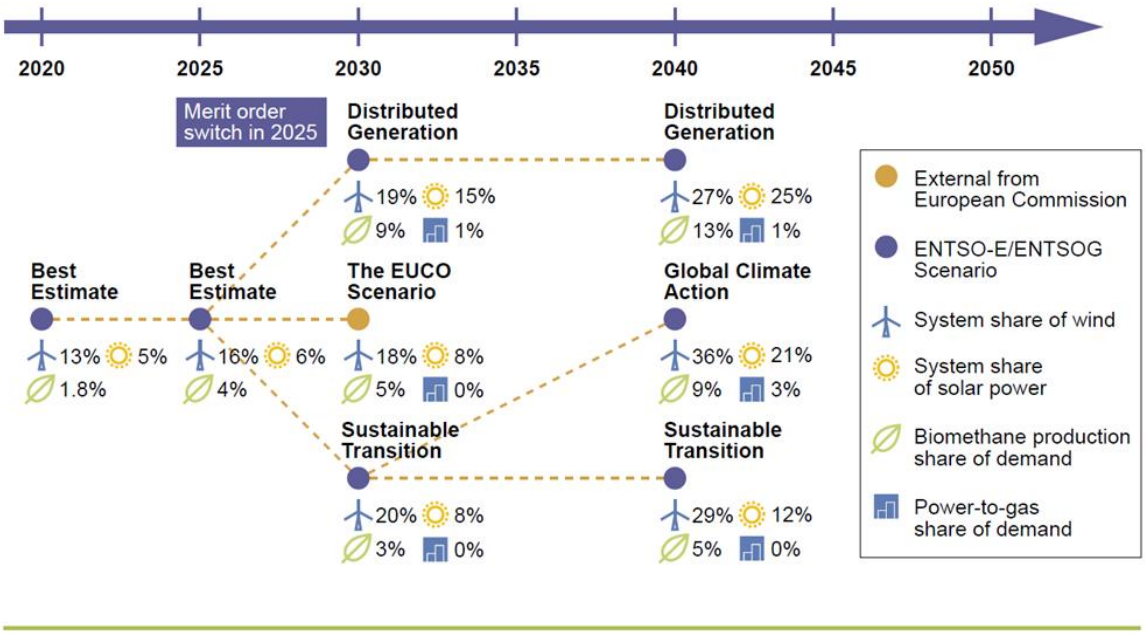
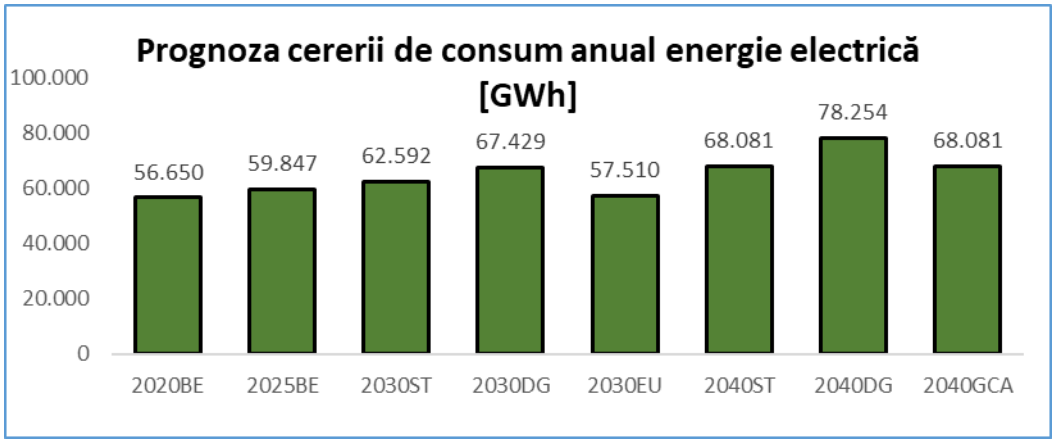
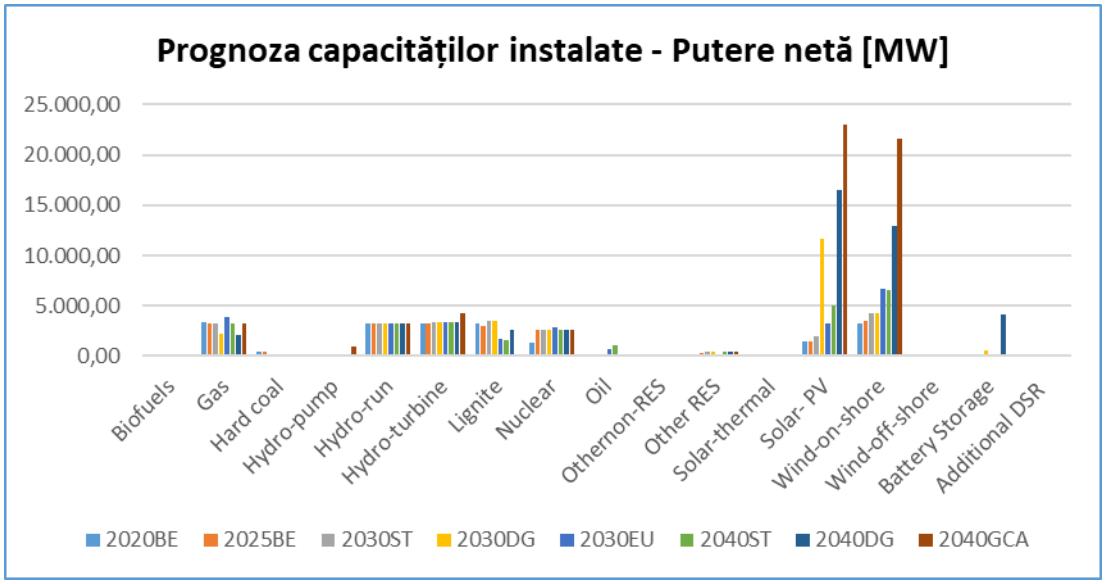
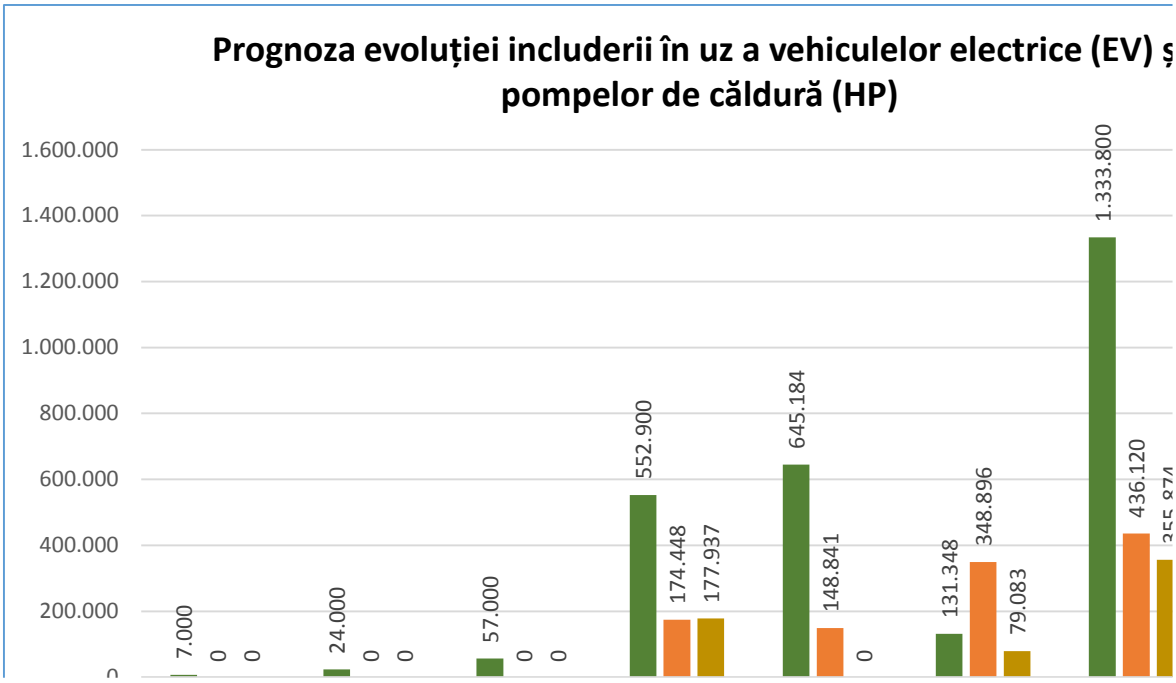


Diagram of scenarios comprised in TYNDP 2018

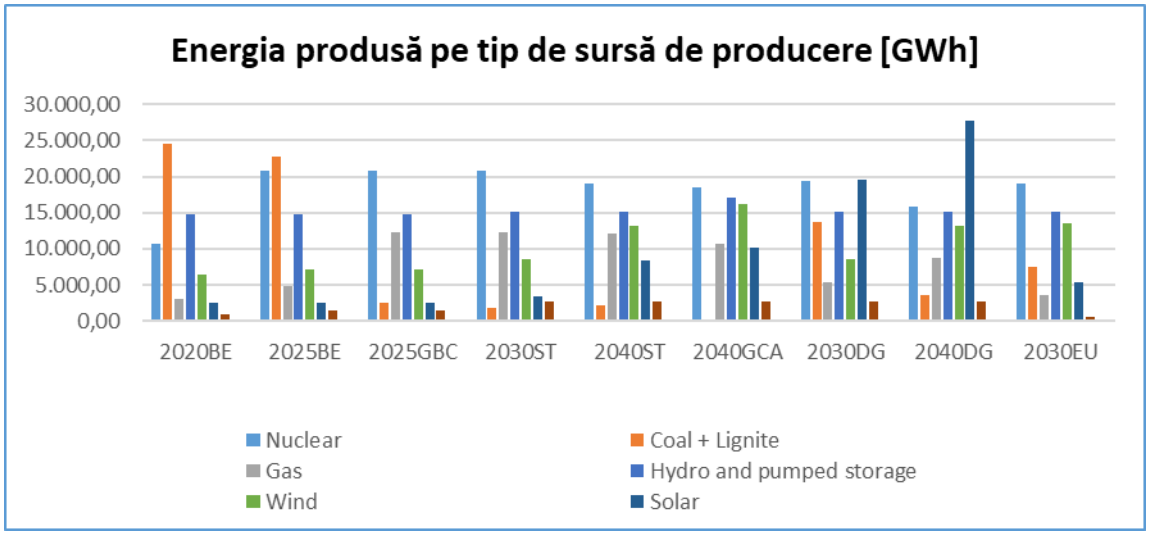
The prognoses and results corresponding to the scenarios from TYNDP 2018 for Romanian are presented in the graphics below:



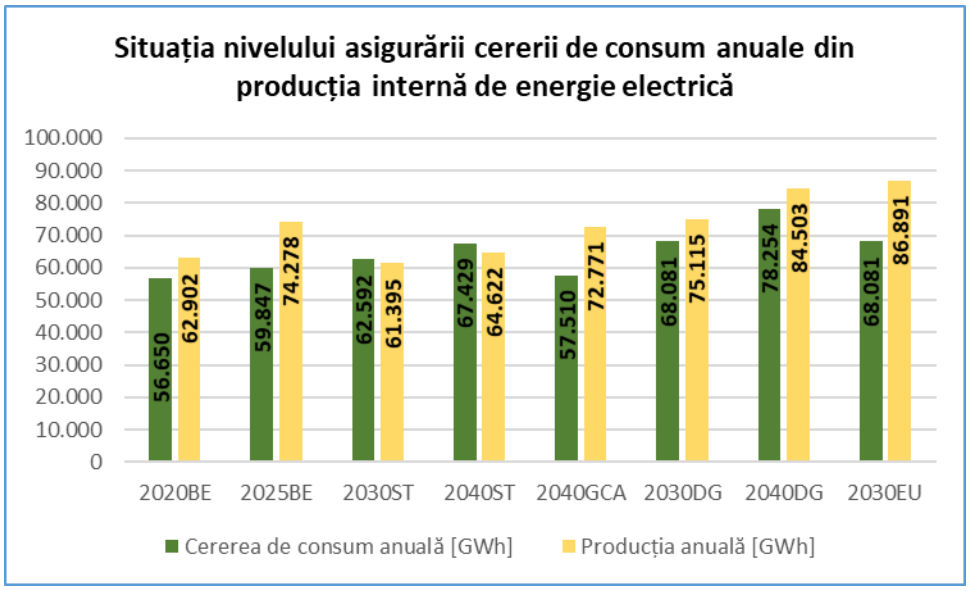




The results obtained with regard to the structure of the generation and the ensuring of the demand of consumption of energy corresponding to the scenarios from TYNDP 2018 in the hypotheses presented above are presented in the following chart.



It can be noted that as regards Romania **for all scenarios, the demand for energy forecast is covered by the energy generated, except for the ST scenario, in which the consumption is by 2% higher than the production for the time horizon 2030 and by 4% higher for the time horizon 2040**, as presented in the following chart:



Monitoring the planning of the commissioning of new production capacities

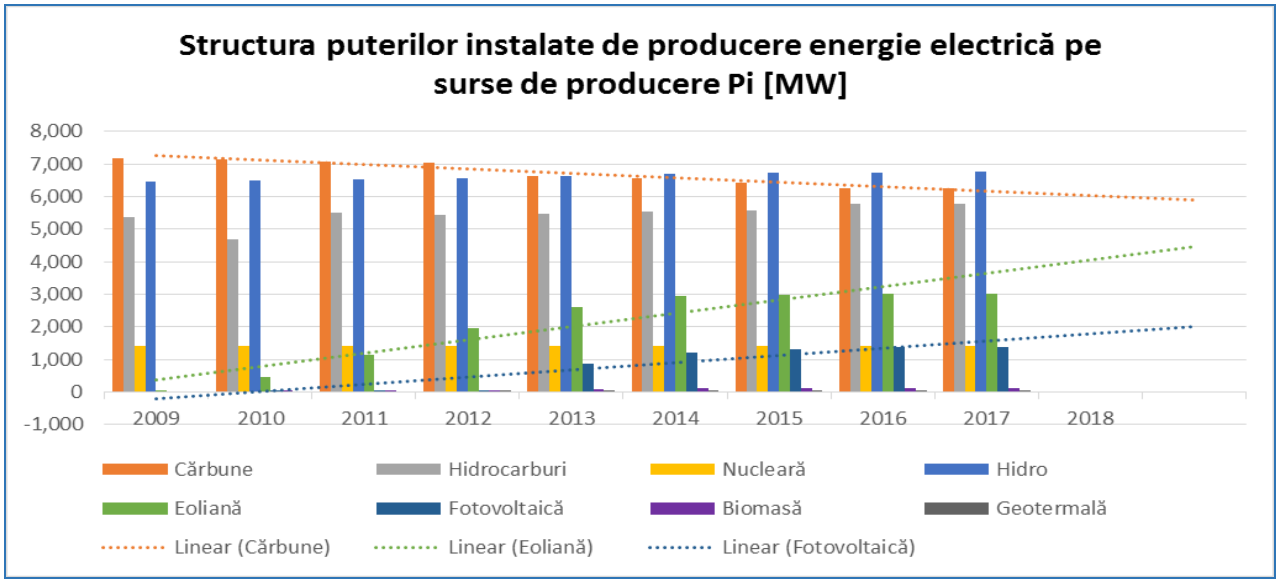
The following table presents the information related to the **structure of the production of energy by types of fuel** in the period 2016-2018 (GWh):

Type of fuel	2016		2017		2018	
	gross	net	gross	net	gross	net
Coal	16,091	14,176	17,154	15,102	15,871	14,002
Hydrocarbon	9,960	9,266	10,803	10,041	10,941	10,258
Nuclear	11,286	10,368	11,509	10,561	11,379	10,442
Hydro	18,272	18,077	14,608	14,542	17,783	17,681
Wind	6,590	6,524	7,403	7,332	6,319	6,260
Biomass	453	448	401	395	311	308
Photovoltaic	1,820	1,802	1,870	1,850	1,771	1,754
Geothermal	-	-	-	-		
Total	**64,472**	**60,661**	**63,748**	**59,823**	**64,375**	**60,705**

In the tables and charts below it is presented the evolution of the power installed and power available of the capacities of power generation in the period 2009 – 2018. The situation of the power installed of the capacities of power generation by sources of generation (*the dotted lines from the chart present the trend of the powers installed corresponding to the capacities of generation on coal and from renewable sources – wind and photovoltaic)*:

- **Pi [MW]**

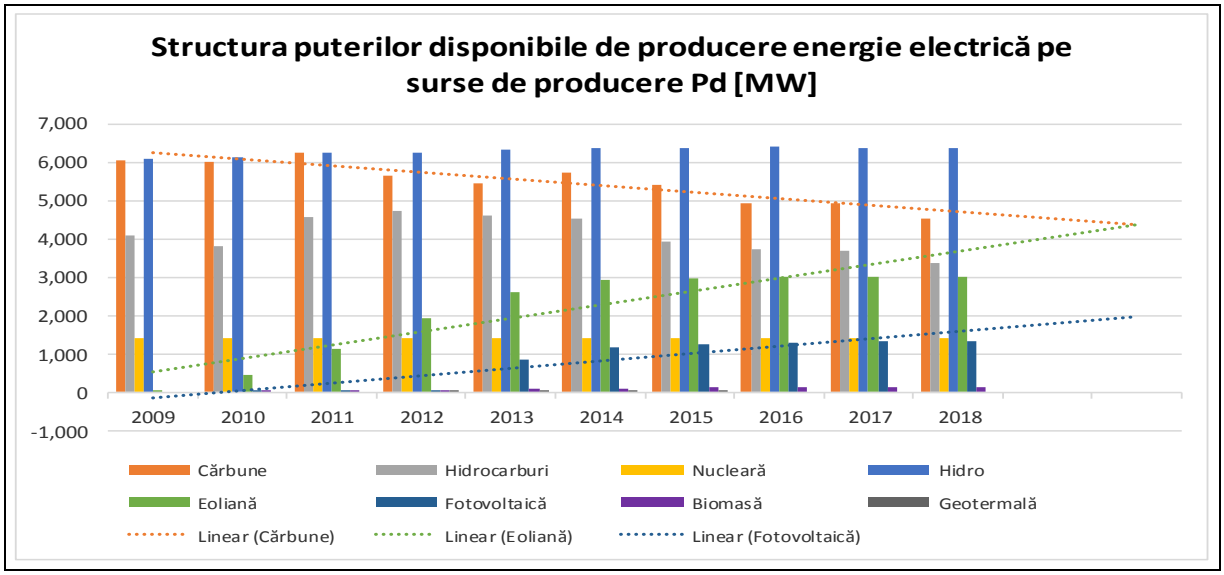
Type of fuel	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Coal	7,178	7,141	7,091	7,025	6,615	6,555	6,435	6,240	6,240	6,232
Hydrocarbon	5,368	4,672	5,519	5,429	5,464	5,547	5,562	5,792	5,789	5,456
Nuclear	1,413	1,413	1,413	1,413	1,413	1,413	1,413	1,413	1,413	1,413
Hydro	6,469	6,499	6,528	6,563	6,648	6,709	6,731	6,744	6,761	6,759
Wind	13	466	1,140	1,941	2,607	2,953	2,978	3,025	3,030	3,032
Photovoltaic	0	0	1	29	860	1,223	1,301	1,371	1,375	1,382
Biomass	0	23	26	38	96	100	121	129	130	132
Geothermal				0.05	0.05	0.05	0.05	0.05	0.05	0.05
Total	**20,441**	**20,214**	**21,718**	**22,438**	**23,703**	**24,500**	**24,541**	**24,714**	**24,738**	**24,406**



The situation of the available power of the capacities of power generation by sources of generation (*the dotted lines from the chart present the trend of the powers installed corresponding to the capacities of generation on coal and from renewable sources – wind and photovoltaic):*

- **Pd [MW]**

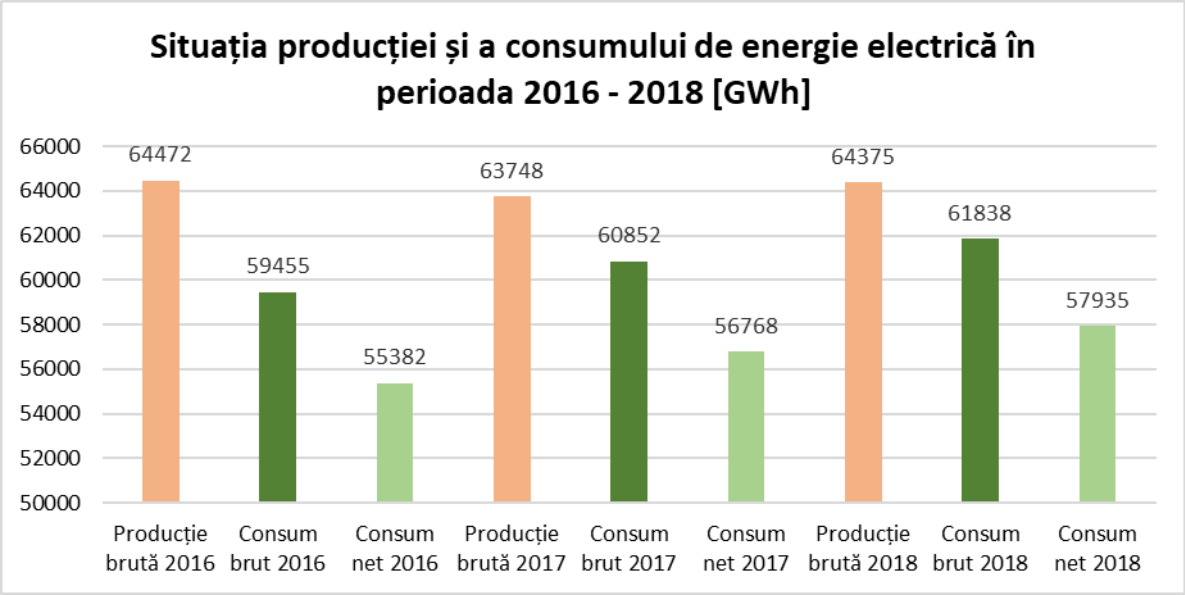
Type of fuel	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Coal	6,065	5,996	6,243	5,659	5,450	5,718	5,399	4,922	4,931	4,541
Hydrocarbon	4,110	3,796	4,564	4,717	4,600	4,538	3,917	3,738	3,703	3,377
Nuclear	1,413	1,413	1,413	1,413	1,413	1,413	1,413	1,413	1,413	1,413
Hydro	6,096	6,139	6,235	6,237	6,316	6,368	6,384	6,417	6,390	6,377
Wind	13	465	1,140	1,941	2,602	2,944	2,967	3,008	3,008	3,006
Photovoltaic		0	1	29	851	1,176	1,262	1,304	1,320	1,320
Biomass		23	26	38	96	99	118	126	127	128
Geothermal				0.05	0.05	0.05	0.05			
Total	**17,697**	**17,832**	**19,621**	**20,034**	**21,328**	**22,256**	**21,461**	**20,928**	**20,891**	**20,162**



In the table and chart below it is presented the evolution of the generation and of the monthly and annual consumption of energy in the period 2016-2018.

Month	Gross generation [GWh]			Gross consumption [GWh]			Net consumption [GWh]		
	2016	2017	2018	2016	2017	2018	2016	2017	2018
January	6,279	6,468	6,024	5,630	5,896	5,670	5,217	5,441	5,269
February	5,167	5,462	5,822	4,971	5,177	5,313	4,626	4,812	4,937
March	5,156	5,778	6,106	5,135	5,204	5,769	4,788	4,847	5,375
April	4,756	5,134	5,043	4,571	4,771	4,677	4,268	4,455	4,359
May	4,500	4,771	4,748	4,546	4,736	4,769	4,295	4,442	4,514
June	5,126	4,881	4,866	4,565	4,659	4,830	4,258	4,367	4,535
July	5,627	4,983	5,400	4,862	4,914	4,969	4,533	4,596	4,650
August	5,270	4,889	5,353	4,627	4,938	4,993	4,262	4,621	4,693
September	4,846	4,757	4,860	4,565	4,677	4,719	4,284	4,392	4,452

October	5,526	5,197	5,203	5,087	5,101	5,056	4,742	4,767	4,770
November	5,819	5,402	5,368	5,258	5,277	5,340	4,883	4,912	5,005
December	6,399	6,026	5,582	5,638	5,502	5,733	5,226	5,116	5.,376
Total year	**64,472**	**63,748**	**64,375**	**59,455**	**60,852**	**61,838**	**55,382**	**56,768**	**57,935**



In 2018 they have been commissioned the following new capacities of power generation:

Name of investor	Name of plant	County	Type of technology	Power approved (MW)	PIF date	PIF power per issuers (MW)	Approved power likely to be commissioned (MW)
EARTH TIME INVESTMENT SRL	Babadag	Tulcea	Wind	3.627	01.03.2018	3.627	0
XAB PARK SRL	CEE Mahmudia	Tulcea	Wind	1.372	15.06.2018		1.372
GRIGORE ADINA	Household wind generator	Constanta	Wind	0.001759	2018		0.001759
OMV PETROM SA	Parc 3 Pordeanu	Timis	Cogeneration	2.246	19.03.2018	2.246	
SC GENERA AVANTE SRL	Satu Mare	Harghita	Biomass	7.5	2018		7.5
PATT C.M	Household photovoltaic plant	Timis	Photovoltaic	0.0159	05.03.2018	0.0159	
NAIDIN C.C	Household photovoltaic plant	Timis	Photovoltaic	0.00736	04.08.2018	0.007	
TACHE ION	Lipanesti	Prahova	Photovoltaic	0.008	13.03.2018	0.008	
OMV PETROM SA	Schela	Galati	Thermo	1.86	26.01.2018	1.86	1.86
Total year 2018				**16.6380**		**7.7639**	**10.7338**

The situation of the capacities of generation unavailable for a period longer than 6 months during 2018:

Name of plant	Type of technology	Power installed [MW]	Power unavailable [MW]	Period of unavailability	Type of unavailability	Reason of unavailability
CET Bucuresti Sud – TA6	Natural gas + heating oil	125	125	01.01.2018 00:00 - 31.12.2018 23:59	Planned	Defective combustion plant.
CTE Iernut – TA2	Gas	100	100	01.01.2018 00:00 - 31.12.2018 23:59	Planned	Maximum time of release to service.
CTE Iernut – TA3	Gas	100	100	01.01.2018 00:00 - 31.12.2018 23:59	Planned	The values of NOx emissions are not within the limits provided for by Law 278/2013 on industrial emissions.
CTE Turceni – TA1	Coal	330	330	01.01.2018 00:00 - 31.12.2018 23:59	Planned	Conservation.
Total year 2018		**655**	**655**			

According to the estimations of the TSO from the RET development plan for the period 2018-2027, in 2018 it was scheduled the scrapping of some power generation units having a total capacity of 590 MW.

Monitoring the planning of the commissioning of new production capacities

The analysis of the plan for the commissioning of new production capacities is carried out by TSO in the 10-year RET Development Plan. According to the information presented in this plan for 2018-2027, 80% of the existing thermo-energy groups have exceeded their duration of useful life. Reengineering and/or modernization works have been carried out for NPS thermoelectric groups, but not all of them are equipped with greenhouse gas emission reduction facilities to enable them to comply with European Union emission standards for sulphur dioxide, nitrogen oxide and dust from large combustion plants.

In order to fall under the EU rules, the Ministry of Administration and the Interior issued the Order no. 859/2005 implementing the "National program for the reduction of sulphur dioxide, nitrogen oxide and dust from large combustion plants", according to which all of the thermoelectric groups must comply with the environment requirements imposed to stay in operation.

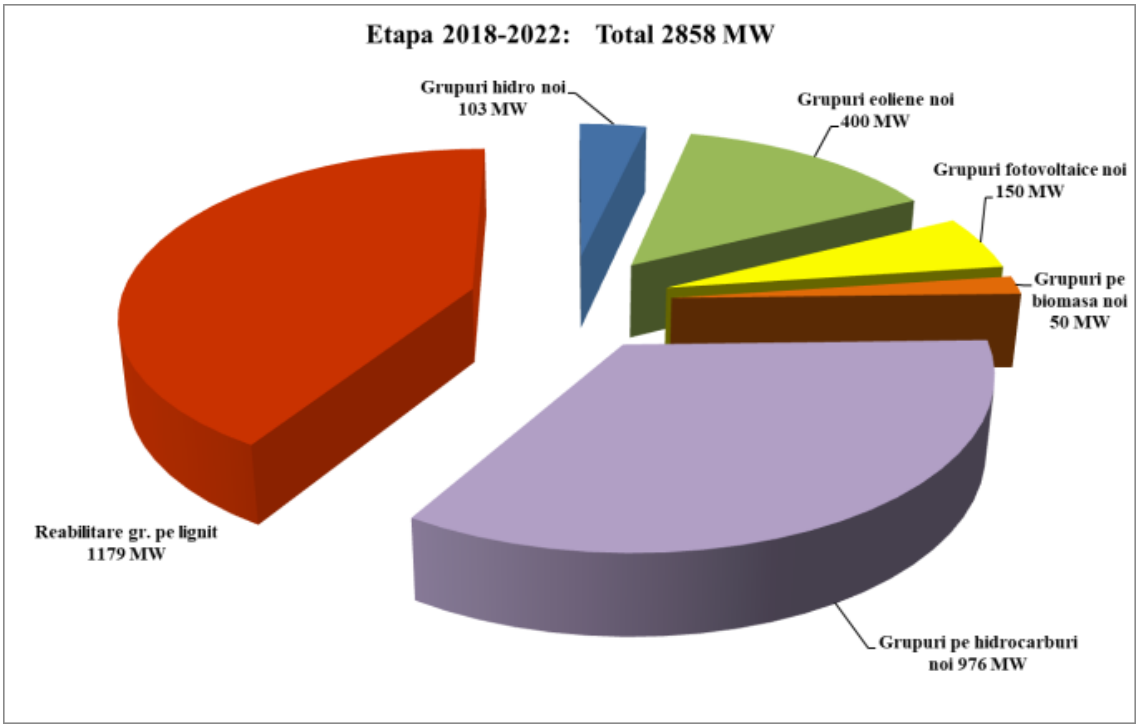
Therefore, for the period 2018-2027, the analysis of the development of the grid took into consideration a Baseline Scenario of the evolution of the capacities of generation, which includes a schedule for the final withdrawal from operation of some thermoelectric groups, at the end of life or due to the non-compliance with the requirements of the European Union on pollution, totalling 4,996 MW of available net power, of which 2,714 MW until 2022 inclusively. In certain cases, the scrapping of the groups is associated with the intent to replace them with new, more performant groups, the new capacities being ought to provide

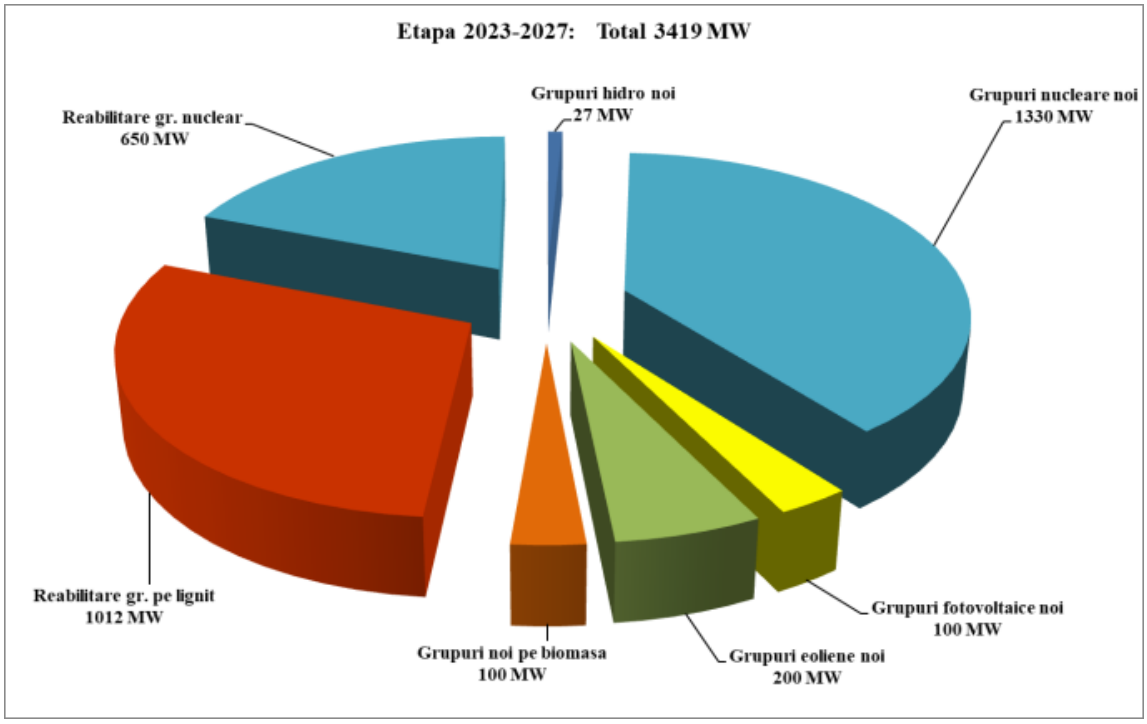
high global efficiency, to be flexible and to ensure the compliance with the conditions imposed through the grid code and the related regulations, at European level.

According to this development scenario, in the same period they will be put again into service, after rehabilitation, four groups in Turceni, three groups at Rovinari, a group in Craiova and a nuclear electric group at Cernavoda (stopped in reengineering for the prolongation of the life), totalling an available net power of 2,841 MW.

With regards to plans for installing new groups, according to information submitted by existing producers, they add up to a net available capacity of about 2,306 MW, excluding projects based on renewable sources.

The following figures highlight the rehabilitation projects and new groups for the forecast horizon 2018-2022, respectively 2023-2027, corresponding to the baseline scenario of evolution of the production park.



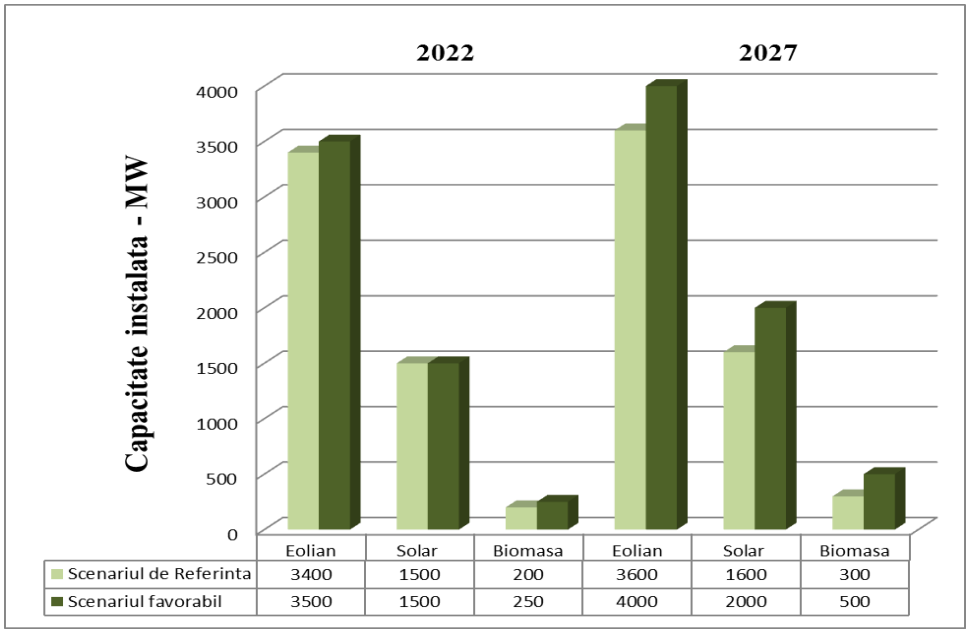


The new group projects provided in the RET 2018-2027 Development Plan include:

- completion of Nuclear Groups 3 and 4 from CNE Cernavoda, available for the time horizon 2027;
- new groups on natural gas (gas or combined cycle, condensing (Compania Romgaz implements an investment project in a natural gas plat with combine cycle at Iernut, with a capacity of 400 MW) or cogeneration turbines (Bucharest));
- the completion of some hydroelectric plants in different stages of execution;
- other new groups from intermittent renewable sources: wind, solar (photovoltaic);
- other new groups from biomass renewable sources. It was taken into consideration as well the completion until 2025 of the building project for hydroelectric plant with pump storage CHEAP Tarnița Lăpuștești, with 4 groups of 250 MW each.

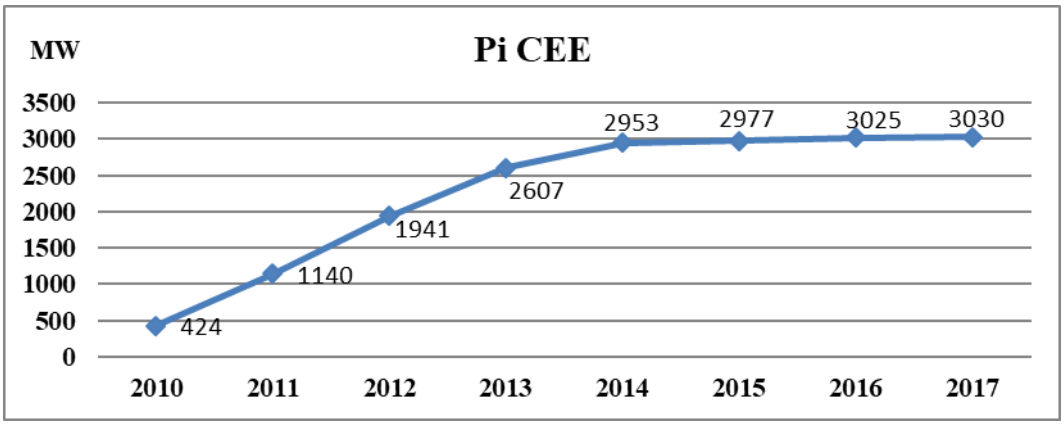
ANRE considers these assumptions to be too optimistic, as it is not possible to put into operation, for instance, the groups 3 and 4 of Cernavoda, given that they have not been initiated yet concrete activities for the completion of these investments.

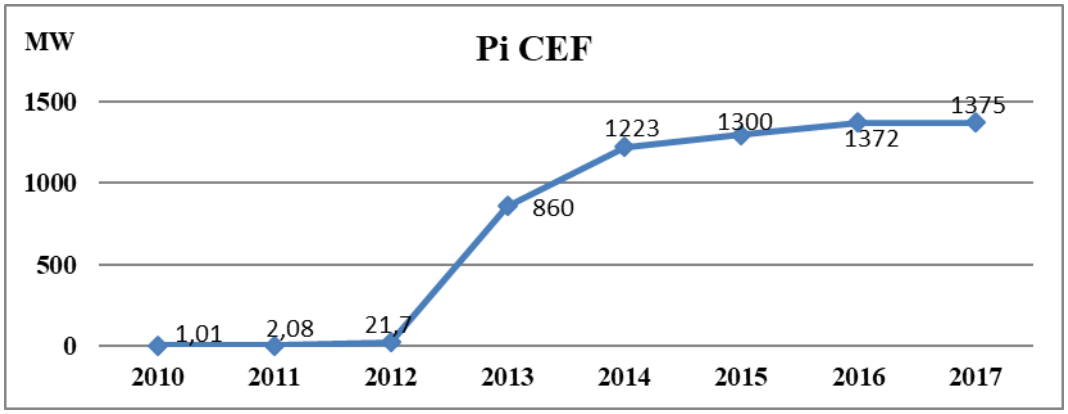
In addition to the *Baseline Scenario* for the evolution of the generation capacities, it was analysed as well a *Favourable Scenario ("green scenario")*, characterized by economic and financial conditions, favourable for the implementation of the policies on energy promoted at EU level (integration of renewable sources, increase of energy efficiency, reduction of CO2 emissions, development of Smart-Grid type of solutions and the integration of energy storage capacities in the grids), specific to the favourable scenario for the evolution of the consumption. In the image hereinafter it is presented the prognosis of the evolution the capacity to generate energy from renewable sources, by type of generation source, according to the two scenarios considered:



An element characteristic to the past years with regard to the evolution of the capacities to generate energy was defined by the great interest for the enhancement of renewable resources of energy: biomass, hydroelectric energy, photovoltaic energy and wind energy, through the enforcement of the provisions of the legal acts related to the schemes of support for the promotion of energy from renewable sources and high efficiency cogeneration.

The charts below show the evolution of the commissioning of the capacities of generation of wind (CEE) and photovoltaic (CEF) energy in the period 2010 – 2017.





Since the access to the current scheme of support on the basis of green certificates ended on 31 December 2016, it can be estimated that new investments in wind, photovoltaic capacities, micro hydro plants or based on biomass can take place in a slower rhythm in the period 2018-2027, considering that new capacities of generation can be commissioned particularly on the basis of co-financing from European structural funds. Therefore, for the period 2018-2027 it is estimated a lower rate of growth of the capacities installed based on SRE than that of the period 2010-2017.

4. Natural gas market

4.1. Issues regarding the regulation of network activities

4.1.1. Unbundling

According to the provisions of *Law no. 123/2012 on electricity and natural gas*, as further amended and supplemented, the transport and system operator is organized and operates according to the **independent system operator** model (ISO). With the entry into force of the Law no. 117/2014 approving Government Emergency Ordinance no. 6/2014, ANRE assessed the new certification conditions and approved the certification of the National Gas Transmission Company "Transgaz" – SA Medias, by issuing **ANRE Order no. 72/06.08.2014**. The ANRE Order was notified to the European Commission.

Distribution operators are the holders of the distribution license, which has as its specific activity the distribution of natural gas in one or more delimited areas. At the end of 2018, on the natural gas market in Romania, **35 companies** were licensed to distribute.

Economic operators from the natural gas sector which carry out regulated activities (transport, storage, distribution, supply) must ensure accounting, legal, functional and organizational separation. Distribution operators that serve a maximum of 100,000 final customers are exempt from the provisions on legal separation.

Economic operators from the natural gas sector have the obligation to submit the regulated accounting records (for the distribution and supply activities, respectively for the storage and transport activities. The regulated accounting records analysed comprise the following situations:

- Income,
- Expenditures,
- Tangible/intangible assets,
- Inventory assets.

Also, operators from natural gas sectors have the obligation to submit to ANRE, for review and approval, reports on separation, activity that involves checking assumptions, criteria and rules that will be the basis for the preparation of separate accounting records, which would allow obtaining information on costs, revenues, tangible and intangible assets and inventory items related to regulated activities carried out.

S.C. E.ON Gaz Romania S.A. and S.C. Distrigaz Sud S.A., as distribution system operators had the obligation to establish accounting, legal, functional and organizational separation between the distribution and supply of natural gas. In the case of S.C. E.ON Gaz Romania SA, as a result of legal unbundling by division of the company, two legally independent companies resulted - E.ON Gaz Romania S.A., specializing in the supply of natural gas and E.ON Gas Distributie SA (later Delgaz Grid SA), specializing in gas distribution as well as operation and maintenance of the distribution network. The two new companies have different offices. The legal unbundling process of the other large distribution operator S.C. DISTRIGAZ Sud S.A. was completed in April 2008, resulting S.C. Distrigaz Sud Retele SRL, specializing in gas distribution as well as operation and maintenance of the distribution network, and S.C. DISTRIGAZ Sud S.A. (later S.C. GDF SUEZ ENERGY ROMANIA and ENGIE ROMANIA etc.), specializing in the supply of natural gas.

Regarding the obligation to legally separate the underground storage activity, it was carried out by S.C. DEPOMUREȘ S.A. The process of legal unbundling of the last storage operator - S.N.G.N. Romgaz S.A. - ended in 2018. The storage activity was separated from SNGN ROMGAZ SA starting with 1 April 2018 by transfer of License no. 1942/2014 and is deployed within a storage operator, a subsidiary, in which SNGN ROMGAZ SA is sole shareholder. SNGN Romgaz SA – Storage Branch of Gaze Naturale Depogaz Ploiești SRL.

Other distribution system operators, servicing less than 100,000 final customers and who do not have the obligation of unbundling, established separate accounting records for regulated activities starting with 2007.

The licensed operators from the natural gas sector submit annually to the regulatory authority the financial reports and regulated accounting for the regulated activities carried out by them in the gas sector.

Prior to sending them to the regulatory authority, the required documents must be audited/verified in accordance with the legal provisions in force, monitoring especially the compliance with the obligation to avoid cross-subsidization between activities.

2018 was the year when **ANRE Order no. 63/2018** was published, for the approval of the *Regulation on ANRE's monitoring of the compliance programs established by distribution operators or natural gas storage operators*. The normative act aims at establishing minimum rules on:

- the compilation of the compliance programs by distribution operators or by the natural gas storage operators which are part of economic operators vertically integrated, according to the provisions of the *Law on Electricity and Natural Gas no. 123/2012, as further amended and supplemented*;
- the designation and the activity of the compliance officers monitoring the enforcement of compliance programs, prepare and submit to ANRE annual reports on the measures taken.

4.1.2. Technical operation

Balancing operation

In 2017 it was established a working group formed of representatives of the European Commission, ACER, ENTSOG, ANRE and SNTGN TRANSGAZ S.A., having as objective the assessment of the degree of implementation of the European regulations on the natural gas market from Romania, to give recommendations with regard to the regulation and implementation of a completely functional entry/exit system and in line with the European regulatory framework and to coordinate the process of its implementation. This working group elaborated *"The concept document for the development of an entry/exit system on the natural gas market from Romania and the implementation of European grid codes".*

The concept document was implemented through the approval of **ANRE Order no. 167/2018** *regarding the amendment and completion of the Grid Code for the national system of natural gas transmission*, approved by ANRE Order no. 16/2013, that came into force on the date of 19 September 2018.

The main modifications of the Grid Code made under this order took into consideration:

- the correlation between the provisions of the Grid Code with those of the *(EU) Regulation no. 312/2014* and *715/2009*;
- the implementation of a completely functional entry/exit system and in line with the European regulatory framework, grid users having the possibility to book independently the capacity by points of entry in the National Transmission System (NTS) and by points of exit from the NTS, for the purpose of consolidation of the competition through the creation of liquid wholesale markets of natural gas;
- the possibility for the transaction virtual point (TVP) to allow the performance of some bilateral transfers regarding the property of natural gas independently from their location in the NTS;
- the establishment of some new rules regarding the performance of commercial and operational processes in different points of entry/exit in/from the NTS;
- the introduction of the operational balancing account (OBA) between the transmission and system operator and the producers of natural gas, as well as between the transmission and system operator and the operators of underground storage deposits;
- the introduction of the TSO stimulation mechanism, in accordance with the provisions of art. 11 of *(EU) Regulation no. 312/2014.* The mechanism assumes the active involvement of the TSO in the short-term trading of standardized products and the its remuneration or application of penalties, as the case may be, depending on the performance obtained following the balancing activity of the NTS;
- the direct reservation of the capacity by each grid user (GU) by virtual points of exit towards the systems of distribution, in order to ensure the necessary consumption of the customers from the portfolio of grid users;
- being given the low liquidity of DAM and intra-day platforms, as well as the danger of registration of some large imbalances leading to unjustified increases of the prices for end customers, it was introduced the concept of "Balancing market of natural gas";
- the allocation principles have been subject to a series of modifications, namely: the final allocation established at the end of delivery month shall be equal with the amount of daily allocations to which they shall be added only the potential correction in case of failure of measuring systems. The differences between the levels of the monthly volumes measured, respectively the values of the monthly energy of natural gas and the final monthly allocation are determined in accordance with the *Methodology of settlement of differences between allocations and quantities of natural gas actually measured* elaborated by ANRE;
- the establishment of the principles of the main market and secondary market of capacity, and the methods of transaction of capacities on these markets;
- the introduction of the end customer's possibility to take part in transactions of natural gas in order to balance its own consumption.

Other amendments of the legal framework took into consideration:

- the stimulation of the short-term transaction of standardized products within the centralized markets of Romania both at GU level – for the commercial balancing of own portfolios of sources and consumptions, and at TSO level – for the physical balancing of the NTS in accordance with the provisions of *(EU) Regulation no. 312/2014 of the Commission from 26 March 2014 for the establishment of a grid code regarding the balancing of gas transmissions networks*
- the assignment of the responsible with the prognosis within the balancing area of the national transmission system and the selection of one of the information models defined within (EU) Regulation no. 312/2014

- the modification of the schedule for the reservation of the capacity offered by SNTGN TRANSGAZ S.A. in accordance with the schedule of ENTSO-G.

Monitoring compliance with network security and reliability rules

Technical condition of the natural gas transmission system

The natural gas transmission activity is carried out by S.N.T.G.N. Transgaz S.A. based on the operating license for the natural gas transmission system no. 1933/20.12.2013 issued by ANRE, valid until 08.07.2032.

The table below shows the quantities of transported natural gas, including those for underground storage during the period 2010-2018.

	MU	2011	2012	2013	2014	2015	2016	2017	2018
Transported natural gas, including those aimed at underground storage (without international transport of natural gas)	Billion m3	15.48	14.94	13.70	13.08	12.38	12.20	12.97	13.07
Natural gas transported for internal consumption	Billion m3	12.82	12.27	11.26	11.88	12.29	12.07	12.87	12.99

The total volume of natural gas transported increased compared to 2017 by 0.1 billion m3, mainly due to the increase of the obligation regarding the minimum stock constituted in underground storage deposits, requirement having as main purpose the provision of security in the supply of costumers during the cold season.

Natural gas transmission is provided by main pipelines with a total length of more than 13,381 km as well as through the installations, equipment and accessories thereof, the natural gas supply connections having diameters between 50 mm and 1200 mm at pressures between 6 bar and 63 bar, which ensure the take-over of the natural gas extracted from the production perimeters or the imported one and the transmission thereof for delivery to the final customers on the domestic and foreign gas markets.

The main components of the NTS of natural gas are presented in the following table:

Main components of the natural gas NTS as at 31.12.2018:

- 13.381 km gas transport mains and connections, of which 553 km transit pipes
- 1.130 gas regulation and measurement stations, on 1.237 directions
- 58 tub command stations (SCV, NT);
- 5 imported gas measurement stations;
- 6 measurement stations located on gas transit pipes (GMS);
- 3 gas compression stations (GCS);
- 1.039 cathodic protection stations (CPS);
- 902 gas odorizer stations (GOS).

The status of the service life of NTS components, in use on the date of **31.12.2018,** is shown in the table below:

Duration of operation	Transport mains 31.12.2018 (km.)	Supply connections 31.12.2018 (km.)	Number of regulation and measurement stations (SRM) on 31.12.2018	Number of regulation and measurement stations placed on gas transit pipes (SMG) on 31.12.2018	Number of regulation and measurement stations from imports (SMG) on 31.12.2018	Number of cathodic protection stations (SPC) on 31.12.2018	Number of tub command stations (SCV-NT) on 31.12.2018	Number of gas comprimation stations (SCG) on 31.12.2018
≥ 40 years	6,628	338	144	2	0	70	14	1
30 - 40 years	1,768	161	65	0	0	26	2	1
20 - 30 years	818	273	191	2	2	36	1	0
10 - 20 years	1,590	850	570	2	0	431	12	0
5 – 10 years	522	143	212	0	1	425	5	0
≤ 5 years	260	29	55	0	2	51	24	1
TOTAL	**11,586**	**1,794**	**1,237**	**6**	**5**	**1,039**	**58**	**3**

The changes intervened compared to the previous year are highlighted in the following table:

Crt. no.	Name of NTS objective/ component	M.U.	Total on 31.12.2017	Completions in 2018	Total on the date of 31.12.2018	Change compared to 2017 (%)
1	Transmission pipelines, excepting transit	**km**	11,009	24	**11,033**	0.22
2	Transit pipelines	**km**	553	0	**553**	0
3	Supply connections	**km**	1,788	7	**1,795**	0.39
4	Gas regulation-measurement stations/directions	**pcs**	1,233	4	**1,237**	0.32
5	Gas measurements stations placed on transit pipelines (GMS)	**pcs**	6	0	**6**	0
6	Gas measurements stations – import	**pcs**	6	-1	**5**	-16.67
7	Cathodic protection stations (CPS)	**pcs**	1,042	-3	**1,039**	-0.29
8	Tub command stations (SCV-NT)	**pcs**	58	0	**58**	0
9	Gas compressor stations (GCS)	**pcs**	3	0	**3**	0
10	Gas odorization stations (GOS)	**pcs**	872	30	**902**	3.44

To conclude, in 2018:

- The national transmission system recorded a slight decrease by 0.22%, by competing 24 km of pipeline extensions and 7 km of connections;
- They have been opened 4 new measurement directions, by means of the corresponding regulation and measurement stations;
- They have been commissioned 31 new odorization stations meant to help the fulfilment of the parameters of quality provided for by the standard for natural gas;
- It was suspended the activity of a measurement station located on one of the import pipelines, without affecting in any way the operation of the national transmission system.

Technical condition of natural gas distribution systems

The 35 natural gas distribution operators licensed by ANRE have in total, as of 31.12.2017, natural gas distribution pipelines and connections in a total length of 51,015 km. Of these, 59.84% are polyethylene pipes, which have been developed steadily over the last 20 years.

The following table shows the lifetime of pipelines for natural gas, polyethylene and steel distribution pipes at the end of 2018:

Pipe age	Length Steel objectives	Length Polyethylene objectives	Total length objectives	
(years)	**(km)**	**(km)**	**(km)**	**(%)**
≥40	1,648	0	1,648	3.23
[30;40)	2,085	0	2,085	4.09
[20;30)	11,381	224	11,605	22.75
[10;20)	4,913	15,456	20,369	39.93
<10	460	14,848	15,308	30.01
Total	**20,487**	**30,528**	**51,015**	**100**

Thus, out of the total of 51,015 km representing the length of the distribution system networks at national level, 30% is less than 10 years old, 39,93% is between 10 and 20 years old and only 7.32% is more than 30 years old.

The share of polyethylene and steel pipes, respectively, by category of age out of the total pipe length within the natural gas distribution systems is presented in the following table:

Pipe age (years)	Percentage of steel (%)	Percentage of polyethylene (%)
≥40	3.23	0
[30;40)	4.09	0
[20;30)	22.31	0.44
[10;20)	9.63	30.30
<10	0.90	29.11
Weight out of total (%)	40.16	59.84

The table and graph below show the dynamics of the natural gas distribution network development over the last 2 years, depending on its age:

Network age (years)	In 2017 (%)	In 2018 (%)
≥40	3.29	3.23
[30;40)	4.04	4.09
[20;30)	20.68	22.75
[10;20)	40.49	39.93
<10	31.50	30.01

Monitoring the performance indicators of the gas transmission service

In accordance with Art. 8 lit. g) Government Emergency Ordinance no. 33/2007 on the organization and functioning of ANRE, approved by Law no. 160/2012, in fulfilling its attributions and competencies, ANRE must contribute to the protection of the consumer, including through the imposition of quality standards for public services in the natural gas sector.

In fulfilling this objective, ANRE Order no. 161/2015 approved *The Natural Gas Transmission System Performance Standard* that entered into force on 1 October 2016 at the beginning of the 2017-2018 gas year, so that the first reporting of the indicators covered by this standard was carried out by the Transmission System Operator (TSO) until 1 December 2018.

To observe the provisions of the standard for the natural gas transmission service, the TSO reported the following:
- the record of limitations and/or interruptions planned and unplanned;
- the record of the requests regarding the access, respectively the connection to the system;
- the indicators of performance of the transmission service, determined according to the provisions of the standard;
- the record of compensations paid to exceed the specific indicators of performance;
- the total number of requests regarding the access, respectively the connection and average duration of their processing;
- the total number of claims, complaints and requests received, broken down by each specific indicator of performance and the average duration of their processing;
- the annual monitoring of the degree of satisfaction of solicitors and users of the system;

For the gas year 01.10.2017 – 30.09.2018, TSO reported the following performance indicators:

Crt. No.	General performance indicator	Specific performance indicator	Performance achievement condition in %	Degree of fulfilment of the performance condition %
1.	IP_0	IP_0^1	90	97.15
2.	IP_1	IP_1^1	95	100
		IP_1^2	95	100
		IP_1^3	95	99.38
		IP_1^4	95	-
		IP_1^5	95	-
3.	IP_2	IP_2^1	95	100

		IP_2^2	95	-
4.	IP_3	IP_3^1	95	100
		IP_3^2	95	100
		IP_3^3	95	100
		IP_3^4	95	100
5.	IP_4	IP_4^1	95	-
6.	IP_5	IP_5^1	98	99.61
		IP_5^2	98	100
7.	IP_6	IP_6^1	98	100
		IP_6^2	98	100
8.	IP_7	IP_7^1	80	97.27
9.	IP_8	IP_8^1	98	100
		IP_8^2	98	-
10.	IP_9	IP_9^1	90	-

As such, the indicators of performance for the transmission and system service refer to:

- the registration and settlement of requests/complaints/claims of users on natural gas transmission and system service;
- the access of the natural gas transmission system;
- the connection to the natural gas transmission system;
- the restoration of the lands and/or goods affected by the works to the infrastructure of the natural gas transmission system;
- the compliance with the conditions of delivery-receipt of natural gas;
- the limitation/interruption of the supply of the natural gas transmission and system service.

The obligation regarding the observance of the indicators of performance of the services provided for by the performance standard does not apply in emergency situation, declared in compliance with the legal provisions, in case of force majeure, declared in accordance with the legal provisions, respectively when they occur any partial or total technical restrictions of the upstream system.

1. IP_0 – Registration of requests/complaints/claims regarding the natural gas transmission system

Considering the territorial dispersion of the NTS as well as the complexity of the working procedures for monitoring the performance indicators according to the Standard, TSO put at the disposal of the solicitors a software for the registration of the requests/ complaints/ claims on the natural gas transmission and system service. As such, all of the 709 requests/complaints/claims received have been handled separately, by means of this software application. Nevertheless, a number of 20 requests have not been replied within the 2 working days provided for by the standard, which led to a value of 97.15% for the indicator IP_0.

2. IP_1 – Observing natural gas delivery-receipt conditions

The overall performance indicator IP1 is composed of five performance-specific indicators ($IP1^1$, $IP1^2$, $IP1^3$, $IP1^4$, $IP1^5$), which refer to:

- IP_1^1 - TSO's obligation to respond to the written complaints/claims of any NTS user regarding non-compliance with the agreed technological parameters of the delivery-receipt points, within maximum 10 business days from the date of registration;
- IP_1^2 - TSO's obligation to verify agreed technological parameters within 24 hours of the date of registration of the complaint/claim;
- IP_1^3 - TSO's obligation to respond to the written complaints/claims of any NTS user regarding the quality of natural gas within maximum 15 working days from the date of registration;
- IP_1^4 - TSO's obligation to respond to the written complaints/claims of any NTS user regarding the measurement of natural gas quantities within 15 working days from the date of registration;
- IP_1^5 - TSO's obligation to travel onsite in order to investigate and ascertain the operation of the natural gas metering system/instrument within a maximum of two working days from the registration of the complaint.

The TSO recorded a total number of 324 of complaints/claims with regard to the compliance of the conditions of natural gas delivery-receipt, broken down as follows:

- for the indicator IP_1^1 it was received a single complaint, which was replied within the term indicated for this indicator (rate of fulfilment = 100%);
- for the indicator IP_1^2 it was received a single complaint, which was replied within the term indicated for this indicator (rate of fulfilment = 100%);
- for the indicator IP_1^3 they have been received 322 complaints and claims, of which a number of 320 were replied within the term corresponding to this indicator. As such, IP_1^3 was fulfilled in a rate of 99.38%.
- for the specific indicators of performance IP_1^4 and IP_1^5 they have not been recorded any complaints, claims or requests.

3. IP_2 – Access to the NTS

The general indicator of performance IP2 is formed of two specific indicators of performance (IP_2^1, IP_2^2), that refers to:

- IP_2^1 - the obligation of the TSO to reply to the written request of any solicitor or TS user within 30 days from its date of registration; the reply being, as the case may be, the approval or the refusal of the access to the TS;
- IP_2^2 - the obligation of the TSO to reply to the written complaints/claims of any solicitor or TS user, with regard to the access to the TS, within maximum 15 days from the date of their registration;

In gas year 01.10.2017 - 30.09.2018 there were 32 NTS access applications, which were answered within the 30-day legal deadline as provided by $IP2^1$. Thus, this indicator was met 100%. The average processing time of the 32 requests for NTS access is 14.03 days.
There were no written complaints/claims from applicants or users about access to the NTS.

4. IP_3 – Connection to the NTS

The overall IP3 performance indicator consists of four performance-specific indicators ($IP3^1$, $IP3^2$, $IP3^3$, $IP3^4$), which refer to:

- IP_3^1 - TSO's obligation to respond to the written request of any NTS applicant or user within 30 days of its registration;
- IP_3^2 - TSO's obligation to respond to written complaints/claims of any NTS applicant or user regarding connection to the NTS within 15 working days from registration;
- IP_3^3 – TSO's obligation to complete the works and commission the connection facility within the term stipulated in the connection contract, if a new installation for NTS connection is built or an existing one is modified/relocated,
- IP_3^4 - TSO's obligation to respond to the written complaints/claims of any NTS applicant or user regarding the design, execution, reception and/or commissioning of the NTS connection facility within a maximum of 15 working days from the date of registration;

In gas year 01.10.2017-30.09.2018 there were 10 applications for connection to NTS. For all 10 connection requests, this 30-day deadline was met, which led to the 100% achievement of the $IP3^1$ specific performance indicator. The average processing time of the 12 requests for connection to NTS was 29.70 days, the legal term of 30 days being therefore complied with.

At the same time, they have been recorded 2 complaints or claims with regard to connection to the TS, that have been replied within the legal term of 15 days, which led to the 100% achievement of the $IP3^2$ specific performance indicator.

According to specific performance indicator $IP3^3$ related to TSO's obligation stipulated in art. 29 of the standard, providing that "in order to develop a new installation for connection to the NTS or modify/relocate an existing one, TSO must complete the works and commission the installation within the term stipulated in the connection contract." At SNTGN TRANSGAZ S.A. level, four connection facilities were commissioned on time; thus, this indicator was achieved in a rate of 100%. Compared to the preceding gas year, when no connection was put into service with the observance of the term provided for by the standard, the evolution is major, which indicates a significant improvement of the procedures that are generally related to the execution of the works performed by the TSO.

There have been 2 complaints or claims on the design, execution, reception and/or commissioning of the connection installations, of which one was replied within the legal term of 15 days, and one was classified; so, the IP34 indicator was met 100%.

5. IP_4 – Restoration of land and/or property affected by the execution of certain works to NTS objectives.

For the IP^4 general performance indicator - "Restoration of land and/or property affected by the execution of certain works to NTS objectives", there have not been any complaints or claims.

6. IP_5 – Notification of unplanned limitations and/or interruptions and resumption of the natural gas transmission system service.

In gas year 01.10.2017-30.09.2018 there were 1099 users affected by unplanned limitation and/or interruption of natural gas transmission system service, of which 1031 users were notified in less than 6 hours, which determined the value of the specific performance indicator $IP5^1$ to be 99.61%. Compared to the last gas year, the evolution of this indicator is a relevant one, of 21.45% - which reveals that the TSO has taken the necessary measures for its improvement, to comply with the minimum value provided for by the standard.

There were also 13 users affected for more than 24 hours by the unplanned interruption of the natural gas supply, all of them being notified in accordance with the contractual provisions and the terms stipulated by the standard; as such, the indicator IP_5^2 was achieved in a rate of 100%. The evolution in case, compared to the previous rate, is even more significant (+100%), which highlights that the TSO has taken all measures to comply in full with the requirement corresponding to this indicator.

7. IP_6 – Notification of planned limitations and/or interruptions and resumption of the gas transmission service.

In the case of planned interruptions and/or limitations of the provision of the natural gas transmission system, there were 7 affected users, of which only 48 users were notified in writing according to the standard 5 working days prior to the limitation/interruption, thus the $IP6^1$ specific performance indicator is 100%. We note that the TSO improved completely the measures taken for the notification of the affected customers, the increase recorded, compared to the previous gas year, being of 89.50%.

For the 7 customers affected it was resumed the supply of the natural gas transmission and system service within the term indicated in the notice, which led to the valued of the specific indicator of performance IP_6^2 of 100%. Also in this situation, it is highlighted that the TSO increased the quality of the service supplied to customers, the evolution of the indicator compared to the previous gas year being 21.88%.

8. IP_7 – Overall performance indicator for Settling requests/notifications/complaints concerning the provision of natural gas transmission and system services other than those separately dealt with in the performance standard.

The IP7 general performance indicator has a specific performance indicator $IP7^1$ for TSO's obligation to respond to any requests/complaints about the natural gas transmission system other than those separately dealt with in the standard within 30 days of registration.

Within the specific $IP7^1$ performance indicator there were 330 requests/complaints/claims, of which the legal 30-day deadline was met only for 321.

For the 9 requests/complaints/claims that were not answered within the 30-day legal term, the explanatory information/data was provided late by Territorial Exploitations in the country. Thus, the $IP7^1$ indicator had a value of 97.27%.
Even under these conditions it is highlighted an increase by 20.88% compared to the previous gas year, evolution which indicates a significant improvement of the quality of the service offered by the TSO to all customers.

The average processing time of the 330 complaints/requests/claims is 7.82 days, with approx. 20 days shorter than the similar one of the last years – fact which denotes the increased attention paid by the operator in the direction of the reduction of the time of response.

9. IP_8 – Overall performance indicator for Tel Verde.

The overall performance indicator IP_8 is composed of two performance-specific indicators (IP_8^1, IP_8^2), which refer to:

- IP_8^1 - TSO's obligation to keep for each gas year, for a total period of 3 calendar years, the information on the number of emergency calls with a waiting time of less than or equal to 60 seconds in relation to the total number of emergency calls received;
- IP_8^2 – TSO's obligation to ensure that the intervention team travels to the reported place as soon as possible from the moment of the call, but not more than 6 hours from the moment of the call, in order to fix the malfunction;

As for IP_8^1, there were 182 emergency calls in total, all having a waiting time of less than or equal to 60 seconds. Thus, the specific $IP8^1$ performance indicator was met 100%.
For the indicator IP_8^2 they have not been recorded any emergency calls with regard to gas leakage, therefore it has not been necessary for the intervention teams to travel to any locations.

10. IP_9 – Obligation to pay indemnifications due in accordance with the provisions of the natural gas transmission system performance standard.

The fulfilment of the obligation to pay the indemnifications due according to the Natural Gas Transmission System Performance Standard is carried out by the TSO at the justified request of the applicant or NTS user, within maximum 30 days from the registration of the application.

For failure to comply with its obligations, the standard sets out indemnifications that TSO is obliged to pay to the claimant at their justified request.

In gas year 01.10.2017 – 30.09.2018, SNTGN TRANSGAZ S.A. did not register any claim for payment of indemnifications. Thus, for each specific performance indicator, the total amount of indemnifications paid was zero.

In order to improve the quality of the natural gas transmission system, we have carried out activities to monitor the satisfaction of NTS applicants and users in accordance with the ISO 9001 family of standards. A report for assessing and determining the satisfaction of SNTGN TRANSGAZ SA with the company for gas year 01.10.2017 - 30.09.2018 was drawn up, based on the questionnaires filled out by them.

Based on the questionnaires received from the 14 respondents, a general satisfaction level of 7.70 (on a scale from 1 to 10) in the gas year 2017-2018, compared to 7.56 in the period 01.10.2016-30.09.2017, indicating that the services provided by TSO have improved given the corrective action plan developed in the last years, which includes among others:

- the identification of an implementation method for the suggestions notified, after their analysis;
- the monitoring of the settlement method for claims;
- the analysis of the Customer Assessment Report in the Audit for the Diagnosis of the Quality-Environment-Protection and Security Integrated Management System and the identification of the potential of improvement of the process.

The changes in the specific indicators of performance, compared to the preceding gas year, are highlighted in the table below:

Specific indicator of performance	Baseline value of the indicator	Gas year 2016-2017	Gas year 2017-2018	Evolution (%)

	(%)	(%)	(%)	
IP_0^1	90	---	97.15	---
IP_1^1	95	---	100	---
IP_1^2	95	---	100	---
IP_1^3	95	---	99.38	---
IP_1^4	95	100	---	---
IP_1^5	95	100	---	---
IP_2^1	95	100	100	0
IP_2^2	95	---	---	---
IP_3^1	95	100	100	0
IP_3^2	95	---	100	---
IP_3^3	95	0	100	+100
IP_3^4	95	---	100	---
IP_4^1	95	100	---	---
IP_5^1	98	78.16	99.61	+21.45
IP_5^2	98	0	100	+100
IP_6^1	98	10.50	100	+89.50
IP_6^2	98	78.12	100	+21.88
IP_7^1	80	76.39	97.27	+20.88
IP_8^1	98	100	100	0
IP_8^2	98	100	---	---
IP_9^1	90	---	---	---

NOTE: Fields marked with (---) are those for the indicators that could not be calculated (example: there have not been any requests or complaints based on which the respective indicator is determined).

As an overall observation, it can be noted that **all of the indicators** corresponding to the gas year 2017-2018 have values higher than 97% and that their degree of achievement in terms of compliance with the minimum threshold provided by the standard is 100%. Compared to the period 01.10.2016-30.09.2017, it is highlighted the improvement of some indicators of performance with values comprised between 20% and 100%, which represents a significant evolution of the quality of the services provided by SNTGN TRANSGAZ S.A.

Monitoring the performance indicators of the gas distribution service

The monitoring of the natural gas distribution service performance indicators is carried out in accordance with the *Natural Gas Distribution Service Performance Standard*, approved by ANRE Order no. 162/2015, as further amended and supplemented by ANRE Orders no. 42/2018 and 97/2018.

The performance indicators for the distribution and system service refer to:

- the registration and settlement of the complaints/claims/requests of users on gas distribution and system service;
- the contracting of the gas distribution service;
- the observance of gas delivery-reception services;
- the access to the gas distribution system (only for the period 01.10.2017-28.05.2018);
- the connection to the gas distribution system;
- the restoration of lands and/or property affected by the execution of some works on the gas distribution system objectives;

- the limitation/interruption of the supply of the gas distribution and system service.

The obligation of compliance with the performance indicators of the services provided in the performance standard does not apply to emergencies declared in accordance with the legal provisions; in case of force majeure declared in accordance with the legal provisions; in case of partial or total technical restrictions of the system upstream.

1. IP_0 – Overall performance indicator for registering complaints/requests for the gas distribution and system service.

In gas year 01.10.2017 – 30.09.2018, a total number of 398,743 complaints/requests/claims received were registered for all operators of the natural gas distribution system, of which 58,376 have bene sent by post, online, fax or e-mail. For the latter the operators have the obligation to send to the solicitor the number of registrations within maximum 2 working days. All of the 23 operators who received complaints/requests/claims by the means described above, met the condition for the performance of the indicator IP01, recording an average value of 93.39%. On the other hand, 13 operators registered only applications submitted at the specialized office, for which the solicitors received on the spot a registration number.

2. IP_1 – Overall performance indicator for contracting the distribution service and compliance with natural gas delivery-receipt conditions.

This indicator refers to the following:

- the contracting of the gas distribution service – indicator that has been modified once with the entry into force of ANRE Order no. 97/2018;
- ensuring the pressure of natural gas;
- ensuring the quality of natural gas;
- measurement of natural gas.

In gas year 01.10.2017 – 30.09.2018, for all gas distribution system operators:

- 5,197 applications were received for contracting the natural gas distribution service; from the reports sent by the distribution operators, it results the following situation: 28 of them met the condition for the IP_1^1 performance indicator, one has not met the condition for the IP_1^1 performance indicator, and 7 of them have not received requests for the contracting of the gas distribution service. As such, the overall result obtained for this indicator is 99.33%.
- it was recorded a number of 656 complaints/requests/claims referring to the non-compliance with the value of the natural gas pressure; of the information that the gas distribution system operators put at disposal, it resulted that 11 of them met the condition for the IP_1^2 performance indicator, the overall average at country level being 98.02%, and 25 have not received complaints/requests/claims referring to the non-compliance with the value of the natural gas pressure.
- it was registered a number of 57 complaints/requests/claims referring to the quality of natural gas; the 5 operators of the natural distribution system who received as well requests recorded an average value of the IP_1^3 performance indicator of 98.25%, meeting the condition provided for by the standard; on the other hand, 31 of them have not received complaints/requests/claims related to the quality of the natural gas.
- it was registered a number of 2,606 complaints/requests/claims with regard to the measurement of the quantities of natural gas; from the reports received from the 36 operators of the gas distribution system, 10 of them met the condition for the IP_1^4 performance indicator, only one has not met the minimum rate of 95% provided for by the standard, and 25 have not received complaints/claims with regard to the measurement of the quantities of natural gas. As such, the overall average at country level is 95.16%.

3. IP_2 – Overall performance indicator for access to the natural gas distribution system

The overall performance indicator IP_2 "Access to the natural gas distribution system" is formed of two specific performance indicators and it was calculated for the period 01.10.2017-28.05.2018, date on which it was eliminated, once with the entry into force of ANRE Order no. 97/2018.

In the said period, for all of the operators of the natural gas distribution system they have been recorded:

- a number of 245,394 requests for access to the DS; 31 DSOs met the condition for the IP_2^1 performance indicator, one has not met the condition for the IP_2^1 performance indicator, and 4 of them have not received requests regarding the access to the natural gas distribution system. The explanation of the operator who has not met the condition for the IP_2^1 performance indicator, was the very high volume of requests received compared with the same period of the last year, coupled with the late transmission by the solicitors of the documents filled in. The overall average at country level was 96.51%, superior to the minimum value provided for by the standard (95%).
- a number of 358 complaints/claims with regard to the access to the DS; 6 DSOs met the condition for the performance of the specific IP_2^2 performance indicator, only one has not met the condition for the performance of the specific IP_2^2 performance indicator, and 30 of them have not received complaints/claims related to the access to the SD. The reason exposed by the operator who has not fulfilled the minimum threshold of 95% corresponding to the IP_2^2 indicator was the very wide territorial coverage, fact that generated delays between the date of reception of the request, its processing at the local agency and the transmission of the final answer to the customer. Nevertheless, the overall value obtained for this indicator was 95.31%, superior to the minimum value provided for by the standard (95%).

4. IP_3 – Overall performance indicator for connection to the natural gas distribution system

Compared to the previous year, the overall IP_3 performance indicator "Connection to the natural gas distribution system" is formed of eight specific performance indicators, once with the completions of the ANRE Order no. 42/2018. As such, this indicator refers to the requests for the connection to the DS and the complaints/claims in this respect;

a) technical and economic studies carried out;
b) the submission of the documentation necessary to obtain the building permit;
c) the commissioning of the connections and SRM/SR/SM/PRM/PR/PM;
d) the making and commissioning of the extensions and/or dimensioning of the objectives/pipelines;

In the gas year 01.10.2017 – 30.09.2018, for all of the DSOs:

- it was registered a number of 63,040 requests for connection to the DS ; 32 DSOs met the condition for the IP_3^1 indicator performance and 4 have not met the condition for the IP_3^1 indicator performance, the explanations given being the very high volume of requests concentrated in a relatively short period of time, as well as the late transmission by the solicitors of the completions requested by the operators. Since two of the latter are the biggest and the most important at country level, the overall average was affected, being obtained the value of 86.58%, inferior to the minimum threshold of 95% allotted in the standard to this indicator
- it was registered a number of 3,399 technical and economic studies drawn up; from the data presented by the DSOs, it resulted that 19 of them met the condition for the performance of the indicator IP_3^{1-1} and 4 have not met the condition for the performance of

the indicator IP_3^{1-1} , the explanation being the concentration in a short period of time, of a large number of requests received, fact which made impossible the classification in the period provided for this indicator. The other 13 economic operators have not drawn up technical and economic studies, since they have not registered any requests requiring this. The global result obtained for this indicator is 89.73%, under the minimum rate provided for by the standard, of 95%.

- it was registered a number of 698 complaints/claims with regard to the connection to the DS; 11 operators of the natural gas distribution system met the condition for the performance of the specific performance indicator IP_3^2 , 3 of them have not met the condition for the performance of the IP_3^2 indicator, and 22 of them have not received any complaints/claims with regard to the connection to the DS. Calculating the overall average at country level, we obtain the value of 83.67%, inferior to the minimum value provided for by the standard (95%).
- it was registered a number of 36,111 DTAC documentations submitted ; of the 36 DSOs who presented the annual report, 23 have met the condition for the performance of the specific performance indicator IP_3^3 , 12 have not met the condition for the performance of the IP_3^3 specific performance indicator, and only one did not have DTAC documentations. Neither in this case it was reached the minimum threshold provided for by the standard, the value of the indicator being established at 83.30%.
- it was registered a number of 35,622 of connections and/or stations/stations of regulation/regulation-measurement commissioned; 27 of the DSOs met the condition for the performance of the specific IP_3^4 performance indicator, and 9 have not met the condition for the performance of the specific IP_3^4 performance indicator. The average obtained in these conditions is 94.37%, rate very close to the minimum value allotted to the IP_3^4 indicator in the standard, of 95%.
- it was registered a number of 3,038 complaints/claims with regard to the design, execution, reception and/or commissioning of the connection and/or station/station of regulation/measurement/regulation-measurement; from all of the DSOs, 7 have met the condition for the performance of the specific performance indicator IP_3^5 , 2 have not met the condition and 27 have not received complaints/claims with regard to the design, execution, reception and/or commissioning of the connection installation. The average obtained was 84.59%, value lower than the minimum value provided for by the standard (95%).
- it was registered a number of 1,478 extensions and/or dimensioning of the objectives/pipelines made and commissioned; of the 36 DSOs who submitted data corresponding to the gas year 2017-2018, 16 have met the condition for the performance of the specific performance indicator IP_3^{5-1} , 4 have not met the condition and 16 of them have not made and commissioned extensions and/or dimensioning of the objectives/natural gas pipelines. The global average rate was 96.62%, value complying with the minimum threshold provided for by the standard of 95%.
- it was registered a number of 262 complaints/claims with regard to the design, execution, reception and commissioning of the extension and/or dimensioning of the objectives/natural gas pipelines; the centralization of the data sent by the DSOs led to the following results: 3 have met the condition for the performance of the specific performance indicator IP_3^{5-2} , 3 have not met the condition and 30 have not received complaints/claims with regard to the design, execution, reception and/or commissioning of the extension and/or dimensioning of the objectives/natural gas pipelines. Since among the operators who have not achieved the minimum threshold there are the first two in terms of size, the average value was 84.35%, value lower than the minimum rate provided for by the standard (95%).

The explanations for which the DSOs have not met the condition for the performance of the performance indicators IP_3^3, IP_3^4, IP_3^5 and IP_3^{5-2} are the following:

a) there have been situations in which certain operators performed the design and received the permits stipulated in the Urbanism Certificate and drew up the DTAC documentations with ANRE-licensed natural gas companies, and those companies did not fully meet the contractual provisions regarding the submission of the documents within 90 days so as to obtain the Building Permit;
b) the delay with which the specific approvals/agreements are granted from the owners of the utilities/institutions/directories/competent authorities required for each objective, in order to obtain the building permit according to the provisions of Law no. 50/1991, republished, as further amended and supplemented;
c) disputes that extended the deadlines for completing the contracting processes for the design and execution activities of the pipeline and branch expansion works through SEAP;
d) the increase in the volume of access and connection requests generated mainly by the real estate development phenomenon, but also by customers' orientation to the use of natural gas instead of other traditional fuels.

5. IP_4 – Overall performance indicator for the restoration of land and/or property affected by the execution of works for natural gas distribution system objectives.

This indicator refers to the DSO's obligation to restore the affected land and/or assets to the initial state when, in the exercise of its right of use and servitude for the performance of the works necessary for the development, rehabilitation, modernization, operation and maintenance of the natural gas distribution systems or a part thereof, land and/or public property or private property of natural or legal persons is affected.

The overall performance indicator has a specific performance indicator $IP4^1$, DSO's obligation to respond to the complaints of any applicant or user of the distribution system regarding the restoration of land and/or property affected by the execution of works to the objectives of the distribution system within a maximum of 15 business days from the date of registration.

In gas year 01.10.2017 – 30.09.2018, for all operators of the natural gas distribution system there were 267 complaints/claims regarding the restoration of the land and/or assets affected by the performance of works to the distribution system objectives. All of the 9 operators of the DSOs who registered such requests met the condition for the performance of the specific performance indicator IP_4^1, and 27 have not received complaints/claims related to the restoration of the lands and/or property affected by the execution of some works to the objectives of the DS. As such, the overall average obtained was 92.86% above the minimum value allotted to this indicator in the standard (90%).

6. IP_5 – Overall performance indicator for notification of unplanned limitations and/or unplanned interruptions and resumption of the gas distribution and system service.

The general IP5 performance indicator has a specific $IP5^1$ performance indicator for DSO's obligation to notify the distribution system users as soon as possible but no more than 12 hours after the limitation/ interruption regarding the expected date and time for the resumption of the service, when the provision of the natural gas distribution and distribution service is limited and/or interrupted without prior planning.

In the gas year 01.10.2017 – 30.09.2018, for all of the DSOs it was registered a number of 104,201 users of the DS affected by the limitation and/or unplanned interruptions. The 16

DSOs who registered such limitations/interruptions have met the condition for the performance of the specific indicator of performance IP_5^1, and 20 have not had users of the DS affected by the limitations and/or unplanned interruptions. Countrywide the average obtained was 99.90% - a very good value, reflecting the particular attention paid to all of the operators for the notification of the customers affected by accidental interruptions

7. IP_6 – Overall performance indicator for notification of planned limitations and/or unplanned interruptions and resumption of the gas distribution and system service.
The DSO has the right to limit and/or discontinue the provision of the natural gas distribution and system service for the time necessary for the performance of the development, rehabilitation, repair, upgrading, exploitation works.

The IP6 general performance indicator has a specific performance indicator $IP6^1$ for DSO's obligation to notify the affected users if the natural gas distribution service is limited and/or interrupted according to plan at least 2 working days before the date of commencement of the works, including the reason, the date and time of the limitation/interruption and the date and time of resumption of the service.

In gas year 01.10.2017–30.09.2018, for all operators of the natural gas distribution system, 866,582 users of the DS affected by the planned limitations and/or interruptions were registered. Of the 36 natural gas distribution system operators, 15 met the condition for the achievement of the $IP6^1$ specific performance indicator and 21 did not have users of the DS affected by planned limitations and/or interruptions. Also, in this case it is noted a very good average value obtained of 99.97% - sign of the particular concern of the operators for the notification of the consumers in case of scheduled interruptions.

8. IP_7 – Overall performance indicator for addressing complaints/requests/claims concerning the provision of the gas distribution and system service other than those dealt with separately within the performance standard for the natural gas distribution and system service.
The general performance indicator IP_7 has a specific performance indicator IP_7^1 corresponding to the obligation of the DOS to reply to any complain/request/claim related to the supply of gas distribution and system service, other than those treated separately in the standard.

The category of complaints/requests/claims mentioned above also includes the cases in which the same complaints/requests/claims refer to two or more situations treated differently within the Standard.

In the gas year 01.10.2017 – 30.09.2018, for all of the DSOs, it was registered a number of 24,257 complaints/requests/claims received, other than those treated separately in the Standard of performance for the gas distribution and system service, approved by ANRE Order no. 162/2015. Of the 36 DOSs, 16 met the condition for the performance of the specific indicator of performance IP_7^1 , one has not met the condition and 19 have not received complaints/requests/claims, other than those treated separately in the Standard. The overall average calculated for this indicator was 90.46%, complying as such with the minimum threshold provided in the standard, of 80%.

9. IP_8 – Overall performance indicator for 24/7 free emergency telephone service, with voice recording, called *Tel Verde*, for taking notifications and complaints regarding

malfunctions or third-party actions endangering the integrity and the safe operation of the distribution system.
The IP8 general performance indicator has a specific performance indicator IP8[1], referring to DSO's obligation to keep the number of calls with a standby time less than or equal to 60 seconds for each gas year, for 3 calendar years.

In the gas year 01.10.2017 – 30.09.2018, for all DSOs, a number of 222.577 emergency calls were received at Tel Verde. Out of the 36 DSOs, 25 met the condition for the performance of the specific performance indicator IP_8[1], only one has not the met the condition, and 12 have not used the Tel Verde service. Since the operator was below the minimum threshold of 98% provided for by the standard, it recorded over 76% of the total number of calls, the average value obtained for this indicator was 97.71%.

10. IP_9 – Overall performance indicator for the obligation to pay indemnifications due in accordance with the Performance Standard for the Gas Distribution and System Service.
The obligation to pay indemnifications due according to the provisions of the performance standard is met by the DSO at the written request of the applicant or the user, which can be submitted within maximum 60 days from the date when DSO's obligations become due. Once with the entry into force of the ANRE Order no. 42/2018, the obligation mentioned was modified, in the meaning of the automatic payment to the DO of the due compensations, within maximum 65 days from their due date.

The IP9 general performance indicator has a specific IP9[1] performance indicator for DSO's obligation to pay indemnification to applicants or users in accordance with the performance standard for the natural gas distribution and system service within 30 days from the submission of their application.

In the gas year 01.10.2017 – 30.09.2018, for all of the DOSs it was registered a number of 2 requests related to the payments of the compensations. Out of the 36 DSOs, 2 met the condition for the performance of the specific performance indicator IP_7[1], and 34 have not received requests regarding the payments of compensations. As such, the degree of achievement for this indicator was 100%.

For the accountability of the DSOs, the Standard of performance for the gas distribution and system service, approved by **ANRE Order no. 162/2015,** establishes the compensation that the DSOs is bound to pay to the solicitor, at the righteous request of the latter, for the non-compliance with the obligations that they must comply with.

In the gas year 01.10.2017 – 30.09.2018 they have been registered 2 requests related to the payment of the compensations, in a total amount of Ron 273.

As such, S.C. Distrigaz Sud Rețele S.R.L. registered an application regarding the payment of the compensations, in amount of Ron 23, and S.C. Delgaz Grid S.A. registered a request related to the payment of the compensations, in amount of Ron 250.

In order to improve the quality of the natural gas distribution and system service, the satisfaction of applicants and users was monitored out in accordance with the ISO 9001 family of standards. In this respect, reports were drawn up for the assessment and determination of customer satisfaction based on questionnaires filled out by them. Subsequently, where necessary, action plans were drawn up for corrective actions.

To highlight the changes occurred in the activity of the DSOs in relation with the quality of the services offered to the customers, they are presented hereinafter the values of the performance indicators recorded in the past two gas years.

Specific performance indicator	Indicator baseline value (%)	Gas year 2016-2017 (%)	Gas year 2017-2018 (%)	Evolution (%)
IP_0^1	90	91.47	93.39	+1.92
IP_1^1	90	97.06	99.33	+2.27
IP_1^2	95	98.19	98.02	-0.17
IP_1^3	95	100	98.25	-1.75
IP_1^4	95	96.36	95.16	-1.20
IP_2^1	95	97.64	96.51	-1.13
IP_2^2	95	96.41	95.31	-1.10
IP_3^1	95	99.91	**86.58**	-13.33
IP_3^{1-1}	95	---	**89.73**	----
IP_3^2	95	98.40	**83.67**	-14.73
IP_3^3	95	85.53	**83.30**	-2.23
IP_3^4	95	96.32	**94.37**	-1.95
IP_3^5	95	98.07	**84.59**	-13.48
IP_3^{5-1}	95	---	96.62	----
IP_3^{5-2}	95	---	**84.35**	----
IP_4^1	90	96.33	92.86	-3.47
IP_5^1	95	99.29	99.90	+0.61
IP_6^1	98	99.94	99.97	+0.03
IP_7^1	80	92.34	90.46	-1.88
IP_8^1	98	96.94	**97.71**	+0.77
IP_9^1	90	100	100	0

NOTE: Fields marked with (---) are those for the indicators that could not be calculated, since they were not provided by the standard on which it was based the report for the gas year 2016-2017. They have been added to the standard once with the entry into force of the ANRE Order no. 42/2018.

An overview of the above situation reveals that in general the indicators of performance have been observed or the average values have been very close to the minimum threshold provided in the standard. On the other hand, it is highlighted the fact that 7 of the 8 indicators who are part of the general indicator IP_3 could not be met, which indicates clear difficulties met by the operators in the connection of the solicitors to the gas distribution system. It is by far the most important indicator with regard to which the operators must act taking the necessary measures meant to reduce the time of wait of consumers regarding:
- the drawing up of the necessary documentation;
- their submission at the competent institutions in order to obtain the approvals and authorizations;
- the execution of the connections and pipelines;

- the commissioning of the objectives made up.

During the working meetings that have taken place during the year, the operators have insisted on the modification of the terms provided by the *Regulation regarding the connection to the natural gas distribution system* and implicitly of the values of the indicators forming the *Standard of performance for the natural gas distribution and system service*, to be correlated with the real ones, in which the companies and the institutions involved process and send the replies. The implementation of these measures would have as an immediate impact the compliance of the operators with the terms for the connection of the solicitors to the natural gas distribution system and the opportunity to obtain for all IP3 indicators some values superior to the minimum values provided in the standard.

On other hand, each operator must implement its own measures for the improvement of the activity, in order to obtain, through the optimization of the operational procedures and flow of information, a minimum value for the period of time in which the solicitors wait for the connection.
The analysis carried out in comparison with the previous year indicates, in general, a stagnation of the values of the performance indicators, of approx. 13-14%, all of them being registered within the general indicator IP3 – *Connection to the natural gas distribution system.* The measures required are those exposed in the previous paragraph.

Monitoring compliance with the time required for connections and repairs to the transport system

The performance standard for the gas transmission and system service, provides that in order to perform a new installation of connection to the TS or to modify/replace an existing one, the TSO has the obligation to complete the works and to commission the connection installation within the term established in the connection contract. As such, at level of SNTGN TRANSGAZ S.A., in 2018 they have been commissioned 4 connection installations, at the request of the contractual partners. SNTGN TRANSGAZ S.A. fulfilled its contractual obligations regarding the term for the completion of the objectives and for their commissioning and exploitation. The average duration of the commissioning of the 4 connection installations was 134 days.

Monitoring compliance with the time required for connections and repairs to the distribution system

In the gas year 2017-2018 there was an increase in the volume of connection requests for all distribution operators, the volume being increased by over 25% compared to 2016 and by 35% compared to the average in 01.10.2016-30.09.2017, average that was also the basis of the estimation of the expected volumes of works to be contracted with the economic operators performing the works.

This increased volume of work, driven mainly by the real estate development phenomenon, as well as by customer orientation towards the use of natural gas instead of other traditional fuels, had a strong impact on the capacity of authorized economic operators to meet contractual deadlines.

The economic operators authorized by ANRE, with whom the distribution system operators concluded contracts for the execution of natural gas connections, did not meet the high

number of requests which led to the need to conclude new contracts with other ANRE authorized economic operators, in order to perform the connections.

The procedure of concluding works acquisition contracts is long-lasting, given the specificity of the processes required by the legislation in force, leading to delays in the contracting of services and in the execution of the works; the deadlines for the issuance of building permits as well as permits, the average time to issue building permits of more than 30 days led to the legal deadlines being exceeded; this situation may also be due to the increasing number of requests for obtaining building permits for buildings, infrastructure works (similar to that of natural gas connection requirements).

The permanent change of the rules for issuance of town planning certificates, building permits through the request of some additional documents, led to the non-observance of the deadlines required for connections and repairs in the distribution system.

In this context, for the 34,402 connections that the DSOs commissioned in the period 01.10.2017-30.09.2018, it resulted an average duration of achievement of 167 days, calculated from the registration date when the solicitor submitted the application accompanied by the complete documentation.

On the other hand, the 2,390 extensions/dimensioning of the objectives/natural gas pipelines commissioned by the DOSs in the period 01.10.2017-30.09.2018 led to an average term of achievement of 241 days, calculated from the date on which the solicitor submitted the application accompanied by the full documentation.

The average time of the temporarily stop of the supply of natural gas, following the repairs and interventions planned and unplanned in the distribution system was 287 minutes per interruption. It is estimated that this indicator should be reduced, mainly due to the improvement of the overall technical status of the natural gas network, through the replacement of the ole steel pipelines with the new ones, made of polyethylene, but also following the performance of the works of preventive maintenance, in order to reduce the risk of occurrence of any accidents.

The storage activity is regulated by the *Regulation for Programming, Operation and Dispatching of Underground Natural Gas Storage Facilities* (ANRGN Decision No. 1353/2004). This Regulation establishes technical, technological and commercial rules and requirements designed to ensure that storage processes are carried out in a transparent, objective and non-discriminatory manner.

The planning of the natural gas storage activity is done by storage operators based on the contracts concluded between them and the beneficiaries of the underground natural gas storage service.

For each year of storage, the deadline for the commencement of the programming of the injection/extraction of natural gas into/out of storage is the date of publication of the final capacity reallocation list specified in the Access Regulation. When setting storage schedules for each storage facility at the level of cycle, month, day, and hour, warehouse operators consider the following:

1. observing priority in accordance with the provisions of the Access Regulation;
2. technological regimes agreed with the transmission system operator for each storage facility, both for injection and extraction;

3. technological regimes optimal for the NTS for both injection and extraction.

Storage facility operators publish on their own websites the required public information, including:

- Initial list of available natural gas storage capacities for the respective injection cycle
- Registry of applications for access to underground natural gas storage facilities
- Initial storage capacity allocation list
- Initial storage capacity reallocation list
- Final storage capacity allocation list
- Final storage capacity reallocation list
- List of reallocation capacities left available
- Weekly report on the capacity of underground natural gas storage facilities.

In order to ensure transparency, the operators of storage facilities publish the data related to the activity of underground storage of natural gas on the AGSI portal, operated by Gas Infrastructure Europe (GIE). The AGSI portal provides data related to: the daily storage of natural gas from underground storage facilities, the quantities of natural gas injected and extracted daily from the underground storage facilities, the total technical capacity, the maximum daily capacity of injection and extraction.

In accordance with Art. 176 of the *Law on Electricity and Natural Gas no. 123/2012, as amended and supplemented*, in the event of unexpected crisis situations on the natural gas market and where the physical safety or security of persons, appliances or installations or the integrity of the system is threatened, the transmission system operator proposes the implementation of safety measures to the ministry. These measures must affect as little as possible the smooth functioning of the internal European Union market and be limited to resolving the crisis situation that generated them. The implementation of the security measures is done through a Government Decision initiated by the relevant ministry. ANRE monitors the implementation of safeguarding measures for the gas market, if adopted by the state.

In 2018 there were no unexpected crisis situations on the natural gas market.

Please note that in October 2017 *(EU) Regulation 2017/1938 of the European Parliament and of the Council of 25 October 2017 on measures to safeguard the safe use of gas supply and repealing (EU) Regulation No. 994/2010* was approved.

4.1.3. Network and connection tariffs

Gas transmission tariffs

The tariff system for the transport activity includes a set of "entry-exit" tariffs for capacity reservation at the entry/exit points of the transmission system, as well as a volumetric tariff for the use of the system, determined as stamp fee. This system ensures the income recognized and allowed by ANRE to a licensee in order to cover the costs considered justified for the performance of natural gas transmission during one year of the regulatory period.

For users connected to the NTS in 2018 it was applicable the *Methodology for determining the regulated income, total income and regulated tariffs for the natural gas transmission activity*, approved by **ANRE Order no. 32/2014**.

For the use of the transit pipelines Isaccea - Negru Vodă it is applied the *Methodology for the reservation of the capacity of transmission and establishment of the tariffs for the activity of supply of natural gas transmission services through the transmission pipelines Isaccea – Negru Vodă* approved by **ANRE Order no. 34/2016**.

In 2018 there have been some modifications to the *Methodology of establishment of the regulated income, of the total income and regulated tariffs for the activity of natural gas transmission* approved by ANRE Order no. 32/2014, by **ANRE Order no. 36/2018.** As such, for the correlation of the provisions of the internal regulations with the requirements of the (EU) Regulation 2017/460 for the establishment of a network code regarding the harmonized tariff structures for gas transmission, they have been introduced provisions with regard to:

- the deferral of the submissions terms for the proposals related to the establishment of the total income, of the regulated income and of transmission tariffs, both at their substantiation in the first year of the regulatory period, as well as at their subsequent adjustment;
- the establishment of the information to be published by the transmission and system operator before the start date of the tender regarding the reservation of the capacity on the long term in the point/group of points of interconnection with other natural gas transmission systems.

Also, to ensure the achievement of the objectives and the *implementation of the (EU) Regulation 2017/460 for the establishmetn of a network code regarding the harmonized tariff structures for gas transmission*, by **Decision no. 388/14.03.2018,** ANRE approved the Timetablefor the implementation of the Regulation, being responsible for the performance of the process of public consultation in accordance with the provisions of art. 26 of the Regulation.

Thus, in the period 1 May – 30 June 2018, ANRE carried out the process of public consultation, on the internet page of the institution being published the corresponding documentation.

The documentation was sent to ACER to analyse the aspects provided for by art. 27 of the (EU) Regulation 2017/460.

Following the analysis carried out by ACER it was identified the need to update the initial documentation with information related to other services than those related to transmission, as well as with a comparison of the tariffs, respectively their evolution in the new regulatory period 2019-2024, and a model of calculation of the tranmission tariffs.

In the period between 9 July – 14 September 2018, ANRE resumed the process of public consultation, discussing the new information published. After the completion of the consultation process, to observe the provisions of art. 26 para. (3) of (EU) Regulation 2017/460, ANRE published on the internet page of the institution the observations received following the public consultation and transitted them to ACER. In accordance with the provisions of art. 27 para. (3) of (EU) Regulation 2017/460, ACER sent to ANRE and the European Commission, and published on its own website, the result of the analysis ended on 12 November 2018, carried out by ACER in accordance with the provisions of art. 27 para. (2) of the same regulation.

The results of the process of public consultation carried out according to the requirements of the (EU) Regulation 2017/460 have taken into consideration the elaboration of the

Methodology for establishing the regulated tariffs for natural gas transmission services approved in 2019.

Evolutions of the tariff for the natural gas transmission

A. for the services of natural gas transmission using the SNTGN, less the transmission pipelines Isaccea – Negru Vodă

The tariffs applied from 1 October 2018 by SNTGN TRANSGAZ S.A., the licensed natural gas operator for gas transmission activity, are approved by ANRE Order no. 98/2018 and are valid until September 30, 2019.

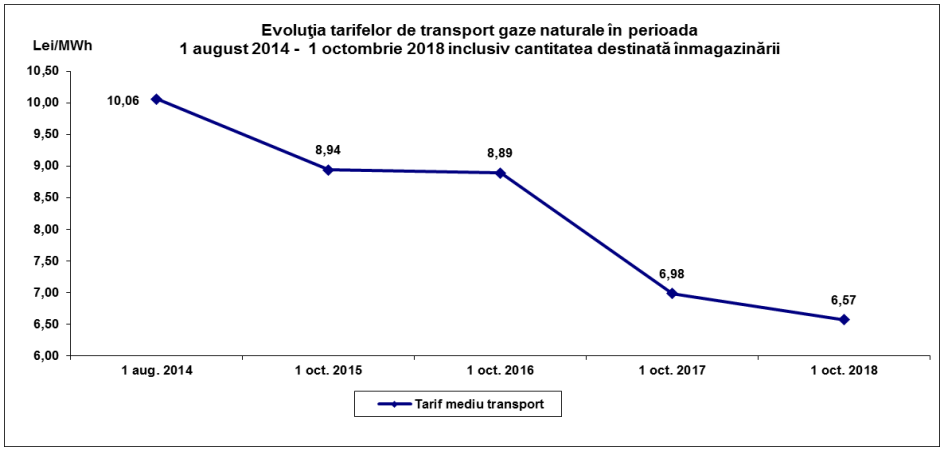
(a) Capacity reservation tariff per entry/exit point/group of points for firm/interruptible natural gas transmission services through the NTS (Ron/MWh/h)

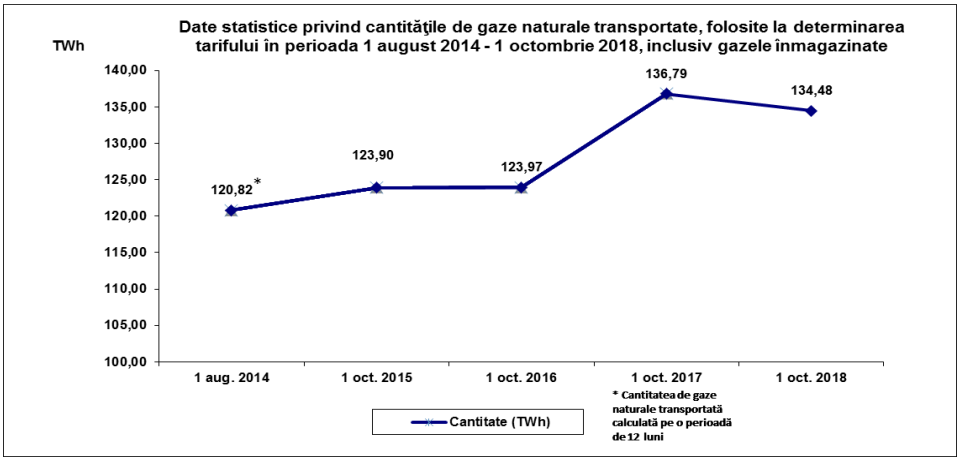
Group of entry/exit points into/from the NTS		**Types of gas transmission services**						
		Long term	**Short term**					
		Annually	**Quarterly**		**Monthly**		**Daily**	
			summer	**winter**	**summer**	**winter**	**summer**	**winter**
1.	The group of entry points into the natural gas transmission system in production perimeters, LNG terminals and biogas or other gas installations that meet the quality requirements for delivery /transmission to/through the gas transmission system natural gas from interconnection with other natural gas transmission systems and underground natural gas storage facilities;	1,68	1,51	2,85	1,74	3,29	3,48	6,58
2.	The group of exit points from the natural gas transmission system to direct consumers, distribution systems, underground storage facilities, upstream pipelines and other interconnected transport systems	1,63	1,47	2,78	1,70	3,20	3,39	6,41

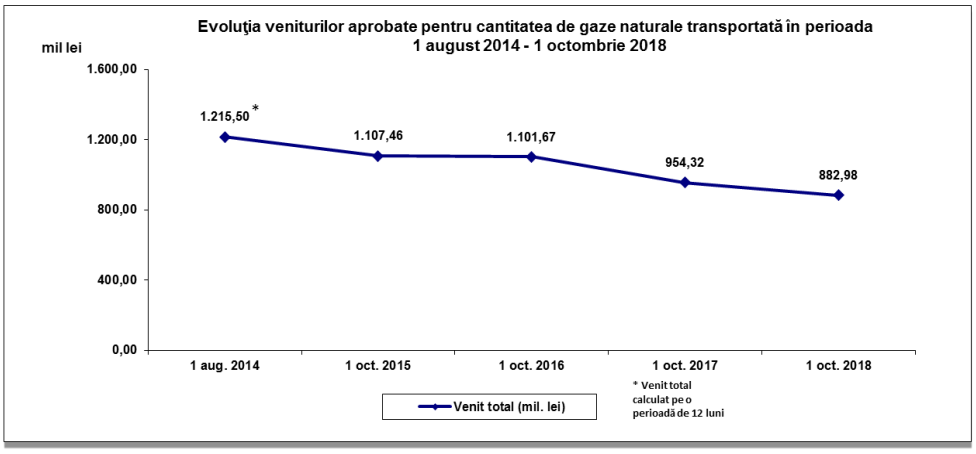
(b) volumetric tariff for the quantity of natural gas transmitted to the distribution systems: Ron 1.97/MWh transmitted;

(c) volumetric tariff for the quantity of natural gas transmitted only through the National Transmission System: Ron 2.72/MWh transmitted.

When setting the tariffs referred to in b) and c) the costs with the value of the monopoly tax provided by the *Government Ordinance no. 5/2013* on the establishment of special measures for the taxation of natural gas monopoly activities in the electricity and natural gas sector, with subsequent modifications were also included.







B. Tariffs for natural gas transmission services using the transmission pipelines Isaccea – Negru Vodă

Tariffs valid between 1 October 2018 and 30 September 2019 and practiced by SNTGN TRANSGAZ S.A., the licensed operator on the natural gas sector for **the activity of natural gas transmission on Isaccea 1 -Negru Vodă 1 gas pipelines** are provided in the annex to **ANRE Order no. 99/2018**, as follows:

-Ron/KWh/h-

Crt. no.	Types of gas transmission services for reserving the transmission capacity on the Isaccea 1 - Negru Vodă 1 transmission	Entry point Isaccea 1	Exit point group Negru Vodă 1 and exit points aimed at providing gas

	mains			supply to certain municipalities in Romania
1.	Firm/interruptible long-term transmission services, contracted for one year		0,0007991	0,0007991
2.	Firm/interruptible short-term transmission services, contracted for one quarter	summer	0,0008870	0,0008870
		winter	0,0011907	0,0011907
3.	Firm/interruptible short-term transmission services, contracted for one month	summer	0,0010229	0,0010229
		winter	0,0013745	0,0013745
4.	Firm/interruptible short-term transmission services, contracted for one day	summer	0,0020378	0,0020378
		winter	0,0027570	0,0027570

Gas distribution tariffs

The tariff system for the **distribution activity** includes differentiated tariffs for licensed distribution operators and customer categories.

ANRE Order no. 42/2013 approved the *Methodology for setting the regulated tariffs for natural gas distribution services* starting with the third regulatory period and amending the Methodology for the approval of prices and the establishment of regulated tariffs in the natural gas sector, approved by the ANRE Order no. 22/25.05.2012, which applied from 1 April 2014 for the determination of the regulated tariffs during the third regulatory period (2013-2017), modified and supplemented by ANRE Order no. 17/2014.

In 2018, given it was necessary to harmonize the methodologies of establishment of tariffs regulated for the distribution services from the natural gas and energy sector starting from the fourth regulatory period, the methodology approved by **ANRE Order no. 42/2013** was modified by **ANRE Order no. 35/2018.** The modification made takes into consideration that 2018 is part of the third regulatory period and the establishes some specific rules regarding the establishment of the tariffs regulated for the distribution service in the natural gas sector, for 2018, respectively:

- the maintenance of the regulated rate of rentability of the capital (RoR) at level of the one approved for the third regulatory period, respectively 8.43%;
- the rate of increase of the efficiency of the activity regulated, for 2018, is zero;
- the value of the term "X" from the formulas of annual adjustment of unitary revenues regulated provided in the Methodology is zero;
- the value of the technological consumption, corresponding to year 2018, is established at level of the one permitted to each holder of a license of distribution for 2017 at the substantiation/resubstantiation of the third regulatory period;
- if the licensed operator develops its activity of distribution by taking over some new concessions and/or through the increase by more than 15% of the quantities distributed achieved and the number of customers compared to the estimations taken into consideration at the substantiation, that generate the modification of the operational costs, it can forward to ANRE the data for a new substantiation

Following the modification of the existing methodology through the extension of the third regulatory period with a year, it started the process of elaboration of a new methodology, starting from the fourth regulatory period.

The elaboration of the Methodology in 2018 was necessary due to the fact that on the date of 1 January 2019 was starting the fourth regulatory period, both for the activity of distribution of natural gas, as well as for the activity of distribution of energy, period for which it was intended the improvement of the regulatory framework for the activity of distribution of natural gas and the harmonization of the legal framework from the natural gas and energy sector.

The new methodology for the establishment of the regulated tariffs for the natural gas distribution services, starting from the fourth regulatory period was approved by **ANRE Order no. 217/19.12.2018**.

The main elements of novelty brought by the *Methodology of establishment of regulated tariffs for distribution services in the natural gas sector*, starting from the fourth regulatory period, consist of the introduction of some new principles of calculation and recognition of the costs of the distribution operators, namely:

- the type of the method of establishment of the tariffs regulated for the distribution services in the natural gas sector is "revenue cap" ;
- the regulated rate of rentability of the invested capital (RRR) granted for tangible and intangible assets for the activity of natural gas distribution was established to be the one approved for the activity of energy distribution for the fourth regulatory period, respectively 5.66%;
- for the fourth regulatory period, for new tangible and intangible assets, commissioned, corresponding to the distribution system, it was established an incentive in value of one percentage point over the regulated rate of rentability of the invested capital approved by ANRE;
- the efficiency bonus accumulated by the distribution operators starting from the fourth regulatory period will be ceded in a rate of 60% to the consumers of natural gas, and 40% shall be kept by the operators;
- the categories of customers for whom they are approved distribution tariffs, have been modified in order to be close to the instalments of consumption provided for by the (EU) Regulation 2016/1952 of the European Parliament and the Council fro 26 October 2016 regarding the European statistics related to the price of natural gas and energy and for the repeal of Directive 2008/92/EC.
- It was modified the rule of exits from the BAR, implicitly of tangible and intangible assets taking into consideration the assets scrapped or in conservation;
- the expenses with the natural monopoly tax are not recognised as costs directly taken over corresponding to the activity of distribution of natural gas;
- the introduction in the distribution tariffs of some costs corresponding to the connection process, respectively of the costs corresponding to the activities of monitoring of the works, technical reception and commissioning of the connection installation and differences of cost not covered by the connection tariffs collected from the solicitors for the connections made following the requests for connection.

In 2018, the categories of clients for which they have been established separately the tariffs of distribution and the tariff of distribution of proximity have been the following:

1. Distribution tariffs
B.1. With a consumption of up to 23.25 MWh
B.2. With an annual consumption between 23.26 MWh and 116.28 MWh
B.3. With an annual consumption between 116.29 MWh and 1,162.78 MWh
B.4. With an annual consumption between 1,162.79 MWh and 11,627.78 MWh

B.5. With an annual consumption between 11,627.79 MWh and 116,277.79 MWh
B.6. With an annual consumption between 116,277.79 MWh
2. Proximity distribution tariff
B.6.1 clients with an annual consumption of over 250,000 MWh.

For distribution activity, a unitary income is determined to cover unit costs for one year of the regulatory period. The consideration of the distribution services supplied to a user of the distribution system is invoiced monthly.

Evolutions of the distribution tariffs

In accordance with the provisions of the Methodology in force, 37 operators submitted to ANRE documents containing the regulated income adjustment data as well as the regulated tariff proposals for 2018.

From the date of 1 April 2018 it started to produce its effects ***ANRE Order no. 48/2018 regarding the establishment of the regulated tariffs for the supply of the natural gas distribution service by the company DISTRIGAZ SUD REŢELE S.R.L.***

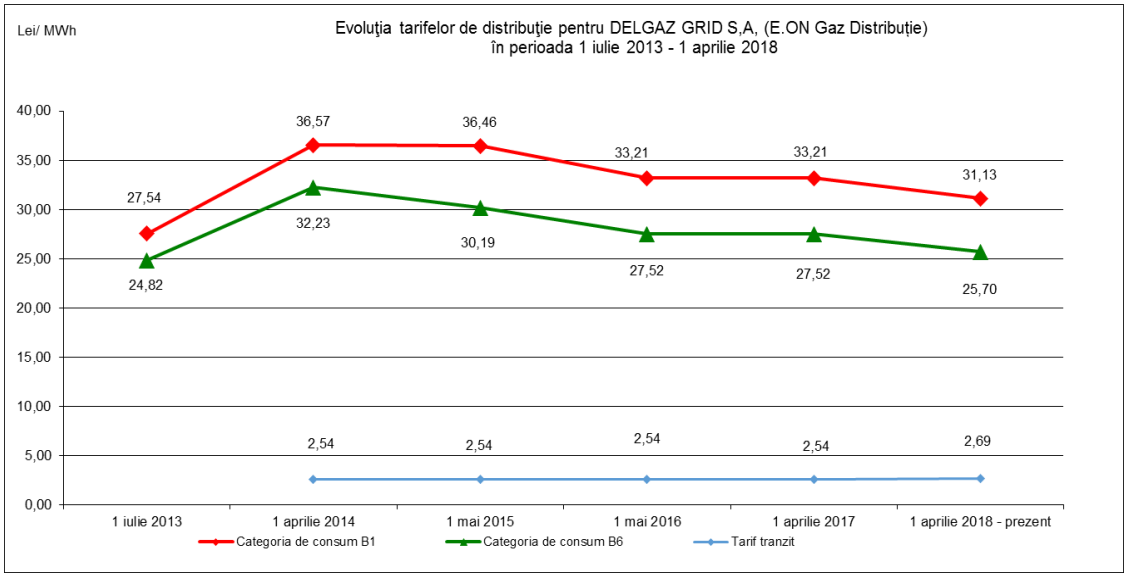
Client category	*Ron/ MWh*
1. Distribution tariffs	
B.1. With a consumption of up to 23.25 MWh	33.56
B.2. With an annual consumption between 23.26 MWh and 116.28 MWh	33.54
B.3. With an annual consumption between 116.29 MWh and 1,162.78 MWh	31.94
B.4. With an annual consumption between 1,162.79 MWh and 11,627.78 MWh	30.66
B.5. With an annual consumption between 11,627.79 MWh 116,277.79 MWh	28.58
B.6. With an annual consumption over 116,277.79 MWh	16.41
2. Proximity distribution tariff	
B.6.1. With an annual consumption over 250,000 MWh	5.21

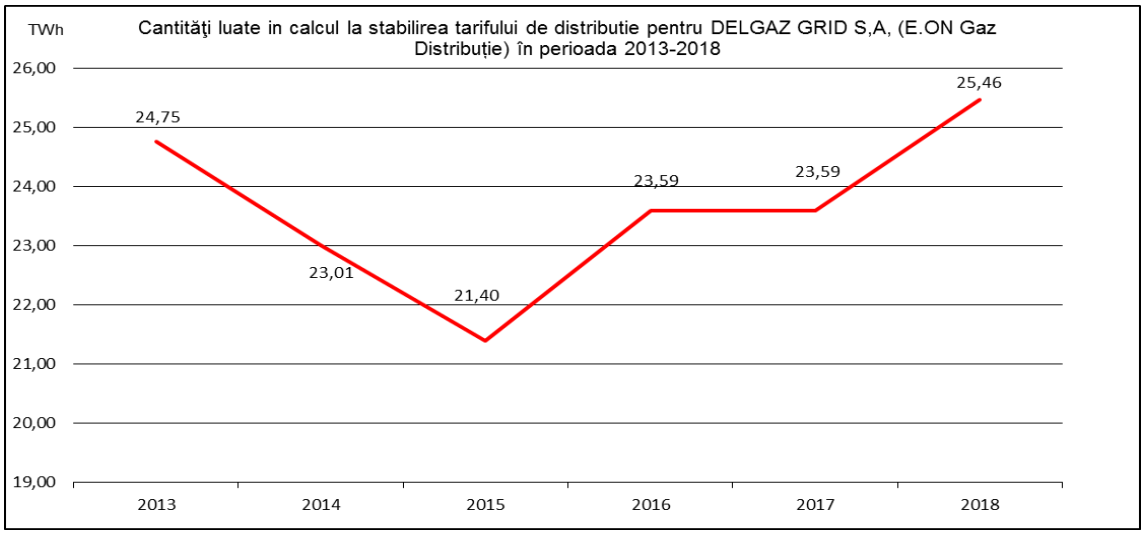
and ***ANRE Order no. 47/2018 regarding the establishment of the regulated tariffs for the supply of the natural gas distribution service by the company DELGAZ GRID S.A. (former E.ON GAZ DISTRIBUŢIE S.A.)***

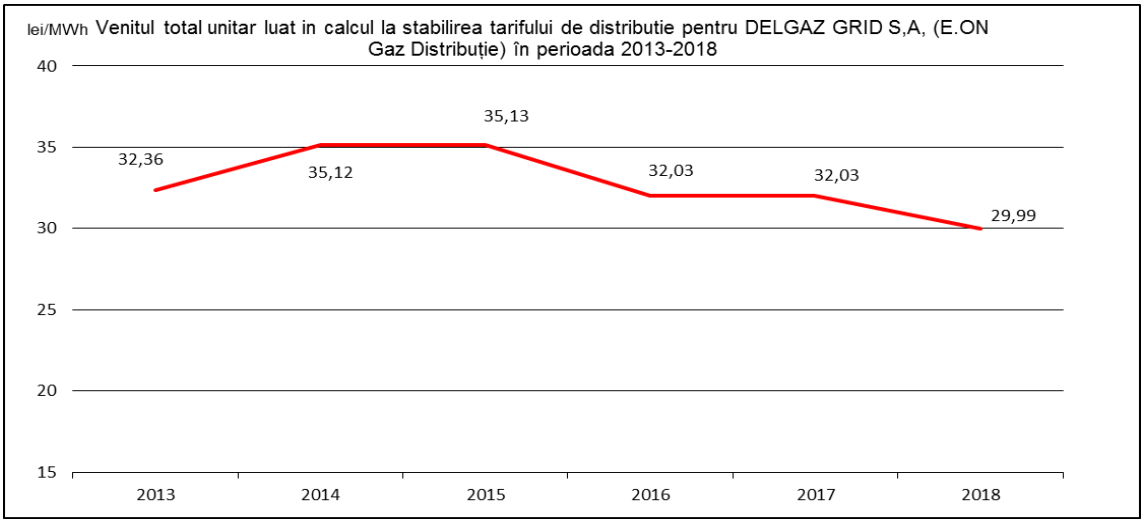
Client category	*Ron/ MWh*
1. Distribution tariffs	
B.1. With a consumption of up to 23.25 MWh	31.13
B.2. With an annual consumption between 23.26 MWh and 116.28 MWh	30.06
B.3. With an annual consumption between 116.29 MWh and 1,162.78 MWh	29.54
B.4. With an annual consumption between 1,162.79 MWh and 11,627.78 MWh	29.11
B.5. With an annual consumption between 11,627.79 MWh and 116,277.79 MWh	28.49
B.6. With an annual consumption over 116,277.79 MWh	25.70
2. Transit distribution tariff*	2.69

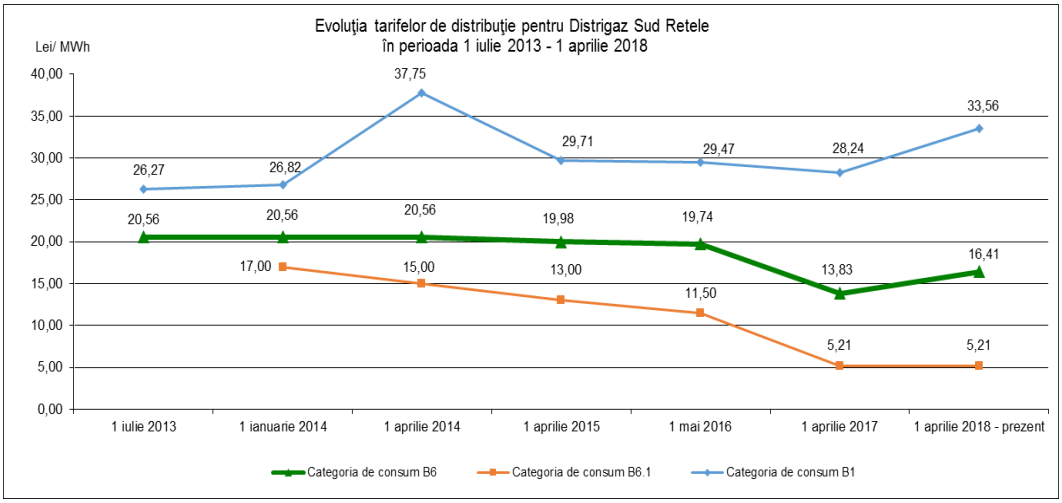
** Transit distribution tariff - Tariff for the use of the distribution system of another operator who was requested access or who approved access for natural gas transmission for the supply to final customers in their own portfolio.*

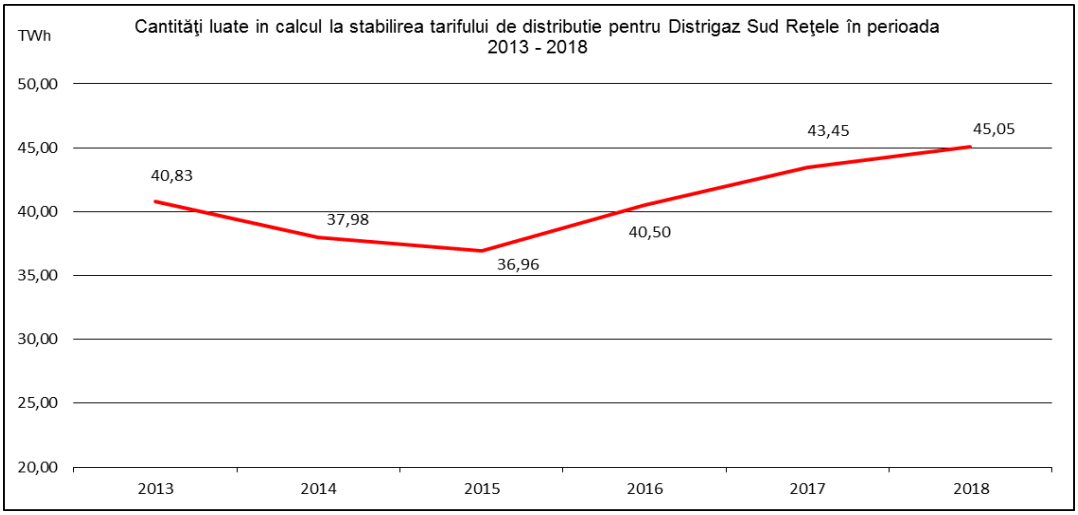
The charts below reflect the evolution over time of gas distribution tariffs for the two operators from 1 July 2013 to the present day.

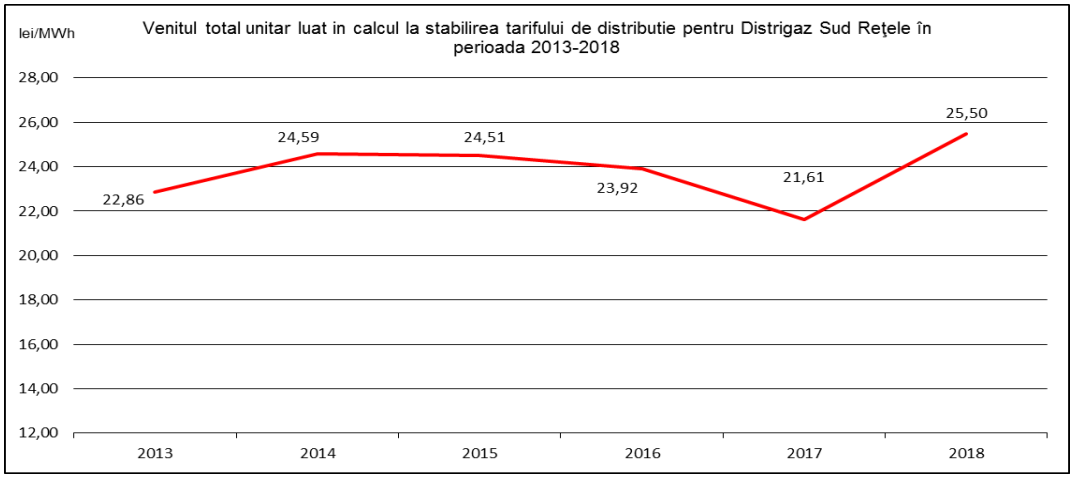





lei/MWh Venitul total unitar luat in calcul la stabilirea tarifului de distributie pentru DELGAZ GRID S,A, (E.ON Gaz Distribuție) în perioada 2013-2018
40
35
30
25
20
15
32,36
35,12
35,13
32,03
32,03
29,99
2013
2014
2015
2016
2017
2018


Evoluția tarifelor de distribuție pentru Distrigaz Sud Retele în perioada 1 iulie 2013 - 1 aprilie 2018
Lei/ MWh
40,00
35,00
30,00
25,00
20,00
15,00
10,00
5,00
0,00
26,27
26,82
37,75
29,71
29,47
28,24
33,56
20,56
20,56
20,56
19,98
19,74
13,83
16,41
17,00
15,00
13,00
11,50
5,21
5,21
1 iulie 2013
1 ianuarie 2014
1 aprilie 2014
1 aprilie 2015
1 mai 2016
1 aprilie 2017
1 aprilie 2018 - prezent
Categoria de consum B6
Categoria de consum B6.1
Categoria de consum B1


TWh
Cantităţi luate in calcul la stabilirea tarifului de distributie pentru Distrigaz Sud Reţele în perioada 2013 - 2018
50,00
45,00
40,00
35,00
30,00
25,00
20,00
40,83
37,98
36,96
40,50
43,45
45,05
2013
2014
2015
2016
2017
2018



The regulated tariffs for the regulated distribution of natural gas for the economic operators from the natural gas sector were established by:

- ANRE Orders no. 44-57/29.03.2018, for the operators AMARAD DISTRIBUȚIE - S.R.L, COVI CONSTRUCT 2000 S.R.L., CPL CONCORDIA FILIALA CLUJ ROMANIA - S.R.L., DELGAZ GRID - S.A., DISTRIGAZ SUD REȚELE - S.R.L, GAZ EST S.A., GAZ NORD EST S.A., GAZMIR IAŞI S.R.L., NORD GAZ - S.R.L., NOVA POWER & GAS S.R.L., OTTO GAZ S.R.L., PRISMA SERV COMPANY S.R.L., SALGAZ S.A., TEHNOLOGICA RADION S.R.L.,

- ANRE Orders no. 73-87/25.04.2018, for the operators BERG SISTEM GAZ, CONI - S.R.L., CORDUN GAZ S.A., DISTRIGAZ VEST S.A., DESIGN PROIECT S.R.L., EURO SEVEN INDUSTRY S.R.L., HARGAZ HARGHITA GAZ S.A., INSTANT CONSTRUCT COMPANY S.A., MĂCIN GAZ S.R.L., MIHOC OIL S.R.L., M.M. DATA S.R.L., PROGAZ P&D - S.A., Societatea Națională de Gaze Naturale "ROMGAZ" - S.A. Mediaș,, TULCEA GAZ S.A., WIROM GAS - S.A.,

- ANRE Orders no. 100 and 101 from 29.05.2018, for the operators PREMIER ENERGY - S.R.L. and PREMIER ENERGY - S.R.L. in the capacity of operator assigned to take over the operation of the natural gas distribution system from the localtiy of Zimnicea, belonging to the municipality of Zimnicea, Teleorman County,

- ANRE Orders no. 116-121/19.07.2018, for the operators GAZ VEST - S.A., MEHEDINȚI GAZ S.A., OLIGOPOL S.R.L., TIMGAZ - S.A., VEGA 93 - S.R.L. and MEGACONSTRUCT- S.A.

- Orders 215-216/19.12.2018 and order 220/19.12.2018 for the operators PREMIER ENERGY - S.R.L. and PREMIER ENERGY - S.R.L. in the capacity of operator assigned to take over the operation of the natural gas distribution system from the locality of Zimnicea, belonging to the municipality of Zimnicea, Teleorman county.

Storage tariffs

The pricing system for the underground storage activity comprises a set of tariffs of the type *revenue cap*, by which it is established a total revenue, which covers the total costs corresponding to the performance of the activity throughout a year of the regulatory period.

The methodology for the establishment of the regulated revenue, of the total revenue and regulated tariffs for the activity of underground storage of natural gas is the one approved by **ANRE Order no. 4/2017**.

This methodology was modified in 2018 by **ANRE Order no. 37/23.02.2018.** The modification foresees that year 2018 is considered as a regulatory period of one year, delaying the beginning of the fourth regulatory period.

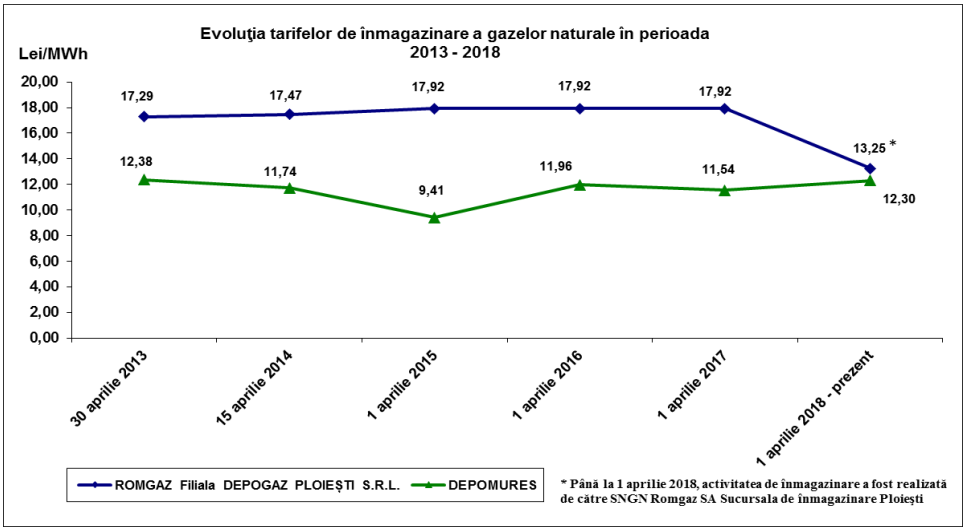
Evolutions of the storage tariff

In the enforcement of the provisions of the methodology, ANRE approved by **ANRE Order no. 58/2018** the total revenue, the regulated revenue, the annual rate of increase of the economic efficiency and the tariffs for the underground storage corresponding to the activity of underground storage of natural gas carried out by Societatea Națională de Gaze Naturale Romgaz S.A. – **the Gas Storage Branch DEPOGAZ PLOIEȘTI S.R.L.**, in its new capacity of licensed operator.

Also, ANRE approved by **ANRE Order no. 59/2018** the total revenue, the regulated revenue, the annual rate of increase of the economic efficiency and the tariffs for the underground storage corresponding to the activity of underground storage of natural gas carried out by **the Company DEPOMUREŞ S.A. Târgu Mureș.**

As such, the components of the tariffs for the supply of the underground storage service by the licensed operators in the natural gas sector, in force for the period 1 April 2018 – 31 March 2019, are the following:

Tariff component	**MU**	**Societatea Națională de Gaze Naturale Romgaz S.A. – Gas Storage Branch DEPOGAZ PLOIEȘTI S.R.L.**	**The company "Depomureş" - S.A. Târgu Mureș**
Fixed capacity-reservation component	Ron / MWh / full storage cycle	9.90	9.61
Volumetric component for gas injection	Ron/MWh	1.68	1.38
Volumetric component for gas extraction	Ron/MWh	1.67	1.31



Connection tariffs

Following the *approval of the Regulation regarding the access to the National system of natural gas transmission* and the *Regulation regarding the access to the natural gas distribution systems* it was elaborated *the Methodology of calculation of tariffs corresponding to the process of connection to the transmission and distribution systems from the natural gas sector*, approved by **ANRE Order no. 71/2018.**

After the repeal of GD no. 1043/2004 for the approval of the Regulation regarding the access to the National system of natural gas transmission and the Regulation regarding the access to the natural gas distribution systems, as further amended and supplements, in accordance with the legislation in force and the new market conditions from the natural gas sector, it was necessary the approval of some new connection tariffs of.

According to the methodological provisions, for the connection to the system, each solicitor must pay a tariff for the analysis of the application for connection and a tariff for the connection.

Compared to the old method of calculation of the tariffs corresponding to the connection process, the methodology introduced new principles of calculation, based on the direct and indirect costs of the operators corresponding to the activity of connection and through the establishment of a profit rate of maximum 5% for the activities carried out by the licensed operators in the connection process.

As such, being given that the connection rules mentioned before offer the solicitor the possibility, for the activities of design of the connection installation, of verification of the technical documentation/technical project of the connection installation and execution of the connection installation, to opt for another economic operator than the system operator, the connection tariff has been divided by components reflecting each activity carried out for the connection, respectively:

- the component corresponding to the costs for obtaining the urbanism certificate, approvals and authorizations issued by the competent authorites/bodies, as well the building permit for the connection installation;
- the component corresponding to the costs related to the design of the connection installation;

- the component of the connection tariff corresponding to the costs related to the verification of the technical documentation/technical project of the connection installation, according to the provisions of art. 160 para. (1) of the Law;
- the component corresponding to the costs related to the execution of the connection installation;
- the component corresponding to the costs related to the monitoring of the works, technical reception and commissioning of the connection installation.

The methodology of calculation of the tariffs for connection to the natural gas transmission and distribution system was modified by **ANRE Order no. 162/2018**, as follows:

- if the technical solution of connection to the distribution or transmission system establishes the need of mounting a natural gas regulation-measurement station/measurement station/regulation station, the value of all components used to calculate the connection tariff and the tariff for the analysis of the request for connection are established by the system operator, representing the maximum level that the licensed operators can take into consideration when calculating the tariffs corresponding to the connection process

- in case of distribution system operators, it has been provided that the value of the tariff for the monitoring of the connection works and commissioning of the connection, should be equal to zero, and the costs corresponding to it should be recovered through the distribution tariff approved to each operator

ANRE approved by **ANRE Order no. 165/2018** the maximum values for:

- the tariff for the analysis of the request for connection;
- the component of the connection tariff corresponding to the costs related to the design of the connection installation;
- the component of the connection tariff corresponding to the costs related to the verification of the technical documentation/technical project of the connection installation, according to the provisions of art. 160 para. (1) of Law 123/2012, as further amended and supplemented;
- the elements taken into account at the calculation of the component corresponding to the costs related to the execution of the connection installation.

The tariffs/components of the connectin tariff approved are presented below:

- the maximum tariff for the analysis of the request for connection is Ron 70;
- the maximum value of the component of the tariff for the connection to the distribution system corresponding to the costs related to the verification of the technical documentation/technical project of the connection installation, according to the provisions of art. 160 para. (1) of the Law no. 123/2012 on energy and natural gas, as further amended and supplementd is Ron 50;
- the maximum value of the component of the tariff for the connection to the distribution system corresponding to the costs related to the design of the connection installation is Ron 300;
- the maximum values of the calculation elements of the component of the connection tariff for the execution of the connection installation are those presented in the tables below:

Crt. no.	Connection diameter	$C_{(s)D}$ [Ron]	$C_{(m)D}$ [Ron/m]

	PE* [mm]	OL** [inch]	PE	OL	PE	OL
1	32	1	500.00	450.00	80.00	80.00
2	40	$1^{1/4}$	550.00	500.00	85.00	85.00
3	50	$1^{1/2}$	600.00	550.00	90.00	90.00
4	63	2	700.00	600.00	95.00	95.00
5	75	$2^{1/2}$	92000	790.00	100.00	100.00
6	90	3	1050.00	920.00	110.00	105.00
7	110	$3^{1/2}$	1260.00	1060.00	120.00	110.00
8	125	4	1460.00	1240.00	130.00	115.00
9	140	5	1580.00	1370.00	145.00	120.00
10	160	6	1770.00	1520.00	160.00	130.00
11	180	8	1960.00	1680.00	175.00	140.00
12	200	10	1930.00	1880.00	195.00	150.00
13	225	12	2350.00	2090.00	215.00	160.00
14	250	14	2610.00	2330.00	235.00	170.00
15	280	16	2880.00	2580.00	260.00	180.00
16	315	18	3400.00	2850.00	290.00	190.00
17	355	20	3950.00	3160.00	320.00	200.00

*PE- polyethylene **OL- steel

Note: For the diameters of the polyethilene connection bigger than 355 mm and for the diameters of the steel connection bigger or equal to 22 inches, the values of the elements of calculation $c_{(s)D}$ and $c_{(m)D}$ of the component $C_{(E)}$ of the tariff for the connection to the distribution system, are established by the system operator

Type of regulation-measurement station	Maximum debit [m^3/h]	$C_{(S)}$ [Ron]
with a cubicle and regulator	10	*450.00*
	16	*460.00*
	20	*480.00*
	25	*500.00*
	35	*550.00*
	40	*650.00*
	50	*770.00*
	65	*900.00*
	75	*1050.00*
	100	*1250.00*
	125	*1550.00*
	140	*1850.00*
	160	*2150.00*
	200	*2550.00*
	250	*3050.00*
	500	*4500.00*

4.1.4. Cross-border matter

Access to cross-border infrastructure, issues related to cooperation in the field

”*The concept document for the development of an entry/exit system on the natural gas market from Romania and the implementation of the European network codes*” elaborated by a working group formed of representatives of the European Commission, ACER, ENTSOG,

ANRE and SNTGN TRANSGAZ S.A. has been implemented through the approval of **ANRE Order no. 167/2018** *on the modification and completion of the network code for the national system of natural gas transmission*, approved by ANRE Order no. 16/2013, that came into force on the date of 19 September 2018.

Within the initiative of the European Commission for the connection of the gas networks in Central and South-Eastern Europe (CESEC), launched in 2015, the Vice-President of the European Commission, Maroš Šefčovič, the Commissioner for Climate Action and Energy, Miguel Arias Cañete, the ministers for energy from 9 states of the EU and the Community for Energy and from 8 contracting parties from Central and South-Eastern Europe signed in September 2017, at Bucharest, a Memorandum of Understanding (MoU) for the completion of the existing CESEC initiative. At the same time, it was approved the national road map for the improvement of the commercial agreements from the region and it was reconfirmed the commitment to perform promptly the priority projects from the gas field and the launch of two new groups of gas transmission system operators that envisage the enforcement of the reverse flow in the trans Balkan gas pipelines system and respectively, on the so-called ”vertical corridor” between Bulgaria, Greece and Romania, both following to be supported by the European Commission. Therefore, during 2018 they have been monitored the activities carried out for the previously mentioned objectives, it has been assessed and valued the progress made in the implementation of the priority projects, respectively the starting of the construction of the Romanian segment of the corridor Bulgaria-Romania-Hungary-Austria (BRHA). Also, there was a focus on the approach and materialization of all points from the updated Action Plan and it was underlined the need to accelerate their enforcement.

Monitoring of investment plans

Law on Electricity and Natural Gas 123/2012 requires the transmission system operator, natural gas distributors, storage operators and LNG operators to prepare and submit to ANRE investment plans for the development of the transport, distribution and storage system, safely, economically and environmentally friendly.

According to the gas pricing methodologies, the costs of regulated activities, including capital, are recovered through regulated tariffs only to the extent that they have been carried out in a prudent manner, i.e. it is demonstrated that they are timely, effective and reflect market price conditions.

Monitoring the implementation of the development plan for the national gas transmission system

The transmission and system operator has obligations regarding the elaboration of the 10-year development and investment plan, on the basis of the national strategy and future evolution of the consumption of natural gas and sources, including the imports and exports of natural gas, with the observance of the principles laid down in *Directive 2009/73/EC of the European Parliament and Council from 13 July 2009 on the common norms for the domestic market in the natural gas sector and for the repeal of Directive 2003/55/EC,* with the inclusion of the investments corresponding to the projects of common interest. They have a cross-border impact and they benefit from certain facilities, including of financing, granted at national and European level.

SNTGN TRANSGAZ S.A. performed an assessment at national level regarding the adequacy of the capacities of the transmission system, in accordance with the provisions of art. 8 para.

(4) of (EC) Regulation no. 715/2009 of the European Parliament and Council from 13 July 2009 on the conditions of access to the networks for natural gas transmission and for the repeal of the (EC) Regulation no. 1775/2005. As such, they have been submitted the major cross-border projects and their integration in the European network. The implementation of these projects is decided in correlation with the evolution of the sources of natural gas and of the consumption demand.

SNTGN TRANSGAZ S.A. participates in the capacity of member of the cooperation group of the European TSO within ENTSOG in the elaboration of the document Ten Year Network Development Plan (TYNDP), in accordance with the provisions of art. 8 para. (10) of (EC) Regulation no. 715/2009 on the conditions of access to the network for cross-border exchanges of natural gas and for the repeal of the (EC) Regulation no. 1775/2005 (Regulation no. 715/2009), based on the national and regional investment plans.

The development plan of the national system of natural gas transmission for the period 2018-2027 (hereinafter called *PDSNT*) elaborated by SNTGN TRANSGAZ S.A. was approved by ANRE Decision no. 1954/2018.

PDSNT 2018-2027 represents the update and completion of PDSNT corresponding to the period 2017-2026, in accordance with the provisions of the *Law*, with the following:

- the update of the technical characteristics, of the route of the pipelines, of the values and of the estimated terms for the implementation of the projects of common interest, as well as of the national projects of major interest comprised in PDSNT 2017-2026, following the conclusion of some contract or the update of some technical documentations;
- **the inclusion of the investment works regarding the development and modernization of the domestic NTS in the period 2018-2027**, respectively of the rehabilitation and maintenance works scheduled for the period 2018-2027;
- the introduction of some new projects for:
    - the taking over of the quantities of natural gas from the reserves newly discovered in the Black Sea, on the basis of the final results obtained through the processes of exploration in view of the exploitation of some commercial deposits of natural gas and the evolution of the demand of capacity;
    - the interconnection of the NTS with the natural gas transmission system from Ukraine, on the direction Gherăești – Siret;
    - the modernization of the infrastructure of the natural gas storage system corresponding to the storage facilities from Bilciurești, Sărmășel, Moinești and Ghercești where SNGN Romgaz SA-the Gas Storage Branch DEPOGAZ Ploieşti has the capacity of operator, as well as of the storage facility from Târgu Mureș, project started by Depomureș, in the capacity of holder of a concession agreement.

PDSNT has an impact on the development of the National Transmission System of natural gas and on the actions of the operators on the natural gas market, because it puts at the disposal of the interested parties information with relation to:

- the extension of the gas transmission infrastructure for the improvement of the supply of natural gas to some deficient national areas;
- the evolution of the interconnection capacities in the context of the integration of the European market of natural gas;
- the actual and prospective ability of the NTS to reply to the demand of network users, correlated with the objectives of the strategy and national energetic policy, through the

diversification at regional level from various new off-shore and on-shore supply sources for the purpose of their recovery on the Romanian market and other markets from the region;

- the zonal opportunities of connection to the NTS of the eligible final consumers and system operators;
- the medium and long-term correlation of the investment and maintenance strategy of SNTGN TRANSGAZ S.A., that shall have an impact on the performances of the service and security of the transmission system;

- the increase of the transmission capacity through the NTS to ensure the coverage of the consumption demand in the peak periods in accordance with the production of natural gas, respectively with the growth of the capacity of injection/extraction from gas storage facilities.

The scenarios analysed within *PDSNT 2018-2027* have been correlated with the development scenarios at European and regional level within ENTSOG, in the context of the elaboration of the European development plan of the network for 10 years.

The European plan ENTSOG comprises the European projects, of which some have the statute of investment projects of common interest (PCI), with an impact on the capacity of interconnection of the system. Romania is part of the North-Southern interconnection from the Western Europe (”NSI East Gast”) provided for by Annex I of (EU) Regulation 347/2013, chapter 2 ”Priority corridors related to gas” point 6: *”North-Southern interconnections related to gas from the Central and South-Eastern Europe **(„NSI East Gas”)**: infrastructures for regional connections related to the gas between the region of the Baltic Sea, the Adriatic Sea and Aegean Sea, the East side of the Mediterranean Sea, **the Black Sea**, and the East-Mediterranean basin, especially to increase the diversification and safety of gas supply*”.

The major investment projects, coded from **7.1** to **7.9**, proposed by the TSO in PDSNT 2018-2027, are present in the table below:

Realizari proiecte majore pe 2018 din PDSNT 2018-2027 aprobat prin Decizia ANRE nr. 1954/14.12.2018

Nr. Proiect	Denumire obiectiv	L (km)	Valoare PDSNT 2018-2027 (mil. EUR)	Realizări 2013 - 2017 (mil. EUR)	Plan 2018 PDSNT (mil. EUR)	Realizat 2018 (mil. EUR)	Plan 2019 -2027 (mil. EUR)	statut proiect
7.1.1	Dezvoltarea pe teritoriul României a Sistemului Național de Transport Gaze	479	478,59	**8,52**	165,3	**66,3**	304,77	**FID**
7.1.2		50	68,8	**0,1**	0	**0,11**	68,7	**A non FID**
7.2	Dezvoltarea pe teritoriul României a Coridorului Sudic de Transport pentru preluarea gazelor naturale de la **țărmul Mării Negre (Marea Neagră - Podișor)**	308,2	360,36	**0,94**	0,06	**0,43**	359,36	**A non FID**
7.3	**Interconectarea sistemului național de transport** gaze naturale cu conducta de transport internațional gaze naturale **T1 și reverse flow Isaccea (Isaccea T1-Onești)**	66	101	**0,26**	8	**0,6**	92,74	**FID**
7.4	Dezvoltări ale SNT în zona de Nord – Est a României în scopul îmbunătățirii aprovizionării cu gaze naturale a zonei precum și a asigurării capacităților de transport spre **Republica Moldova**	165,15	174,25	**1,59**	10,5	**0,56**	162,16	**A non FID**
7.5	Amplificarea coridorului bidirecțional de transport gaze naturale Bulgaria -Romania - Ungaria - Austria **(BRUA faza 3)**	645	530	**0**	0	**0**	530	**LA non FID**
7.6	Proiect privind noi dezvoltări ale SNT în scopul preluării gazelor din **Marea Neagră (Vadu - T1)**	25	9,14	**0,12**	3,5	**0,01**	5,52	**A non FID**
7.7	Interconectarea România - Serbia (Recas-Mokrin)	85 RO (12 Se)	42,4	**0,01**	1,0	**0,1**	41,39	**A non FID**
7.8	Modernizare **SMG Isaccea 1 și SMG Negru Vodă 1**	0	13,9	**0,01**	0,1	**0,33**	13,8	**FID**
7.9	Interconectarea sistemului național de transport gaze naturale cu sistemul de transport gaze naturale din **Ucraina**, pe directia Gherăești – Siret – **proiect nou 2018**	130	125	**0**	0,4	**0**	124,6	**LA non FID**
	TOTAL proiecte majore (inclusiv PCI) din care:	**1.953,4**	**1.903,4**	**11,6**	**188,9**	**68,4**	**1.703,0**	**PM**
	Total proiecte PCI	**1.548,2**	**1.538,8**	**9,8**	**173,4**	**67,4**	**1.355,6**	**PCI**
	Total proiecte majore -FID	**545,0**	**593,5**	**8,8**	**173,4**	**67,2**	**411,3**	**FID**
	Total proiecte majore -A non FID	**633,4**	**655,0**	**2,8**	**15,1**	**1,2**	**637,1**	**A non FID**
	Total proiecte majore- LA non FID	**775,0**	**655,0**	**0,0**	**0,4**	**0,0**	**654,6**	**LA non FID**

PDSNT 2018-2027 presents the centralized situation of the major projects of interconnection of the national transmission system with the neighbouring systems, with the breakdown of the total value forecast every year, based on the statute of the projects on their financing decision. According to the data presented by SNTGN TRANSGAZ S.A., the financing of the major projects, in a total estimated value of Eur 1.903 billion for the period 2018-2027 of which approx. Eur 1.248 billion for the projects with the statute of FID and A non-FID shall be covered in a rate of 35% from own sources and 65% from attracted sources (loans and non-reimbursable funds).

The major projects provided in the *PDSNT 2018-2027* take into account the last evolutions regarding the routes of the gas transmission at European level, respectively the two new important sources of gas supply from the region of the Caspian Sea, and those recently discovered in the Black Sea and they are presented hereinafter:

7.1. *Development of the National Gas Transmission System on the Bulgaria - Romania - Hungary - Austria Corridor in Romania* (BRUA)–project code TRA-N-358 (TYNDP)

The project is comprised by the List no. 3 PCI/2017 position 6.24 within the project ”The group of projects which supposes the gradual increase of the capacity of the bidirectional transmission corridor Bulgaria – Romania – Hungary –Austria (ROHUAT/BRUA).
The result of the implementation of the BRUA project is the ensuring of the physical possibility of permanent bidirectional running through the interconnections with Bulgaria and Hungary, being ensured the following capacities of transmission:

- capacity of transmission at the end of phase I and towards Hungary of 1.75 billion m3/year, respectively towards Bulgaria of 1.5 billion m3/year;
- capacity of transmission at the end of phase II and towards Hungary of 4.4 billion m3/year, respectively towards Bulgaria of 1.5 billion m3/year;

The project *in a total estimated value of Eur 547.39 million*, concerns the NTS interconnection with the similar systems of Bulgaria and Hungary, through the construction of some new gas transmission mains linking the Technological Node (TN) Podișor and SMG Horia, to be achieved in two phases, being divided in distinct projects:

7.1.1 *”The development on the Romanian territory of the National Transmission System for natural gas for the Bulgaria - Romania - Hungary – Austria corridor* (BRUA)” - Phase 1 (FID project for which it was made the final decision for investment) *in an estimated value of Eur 478.6 million, to be ended in 2019*, consists of the 479 km of transmission pipeline, Ø 32" x 63 bar, on the route Podișor – Recaș, and of 3 compressor stations, Podișor, Bibești and Jupa, each of them with two compressor aggregates (one in operation and one in reserve), with the possibility to ensure the bidirectional flow of natural gas.

For the financing of Phase I of the project they have been obtained two financing grants from the EU, in value of Eur 1.52 mil. and one in value of Eur 179.3 mil. and they have been concluded financing contracts with BERD and BEI in value of Eur 160 mil.

Current state of the project

The project is in progress, works for the execution of the 3 compressor stations and the transmission pipeline in length of 479 km have been started in 2018, to be ended in December 2019.

The project completed all of the authorization phases necessary for the implementation of a PCI in accordance with the provisions of the (EU) Regulation no. 347/2013 and the national legislation in force, obtaining the exhaustive decision on the date of 21.03.2018.

7.1.2 ***"The development on the Romanian territory of the National Transmission System for natural gas on the Bulgaria – Romania – Hungary – Austria corridor*** **(BRUA)*" -* Phase II (6.24.4 –position 4 on the List 3 PCI/2017), consists of *capacities of gas transmission"*,** (project A non-FID) *in an estimated value of Eur 68.8 million* consists of the implementation of a 50 km transmission pipeline, Ø 32" x 63 bar, **on the route Recaş - Horia** and the amplification of the capacity of the 3 compressor stations, Podișor, Bibești and Jupa, through the mounting of an additional compressor aggregate in each station, as well as of the gas measuring station SMG Horia.

The completion of the phase II of the project is estimated for 2022, depending on the schedule of performance and completion of the procedure "open season" used for the reservation of capacity at the point of interconnection Csanadpalota. The final decision on the starting of the execution of Phase II shall be made in June 2019, depending on the reservation of capacity for the points of interconnection Romania-Hungary, respectively Hungary-Austria and the available capacities of natural gas in the interconnection pipelines of Hungary with the neighbouring countries.

7.2. ***Development on the Romanian territory of the Southern Corridor of transmission for the reception of the natural gas from the shore of the Black Sea*** **– project code TRA-N-362 (TYNDP) –** included on the List 3 PCI/2017 -6.24.4 position 5 –"*Pipeline between the shore of the Black Sea – Podișor (RO) for the reception of the gas from the Black Sea*", in *value of Eur 360.4 million to be completed in 2020, in correlation with the graphics of implementation of the offshore upstream projects.*

The project consists of the construction of gas transmission pipeline on the route Tuzla – Podișor in length of 308.2 km, from the shore of the Black Sea (in the area of the localities Tuzla – Amzacea, Constanța County) to NT Podișor, Giurgiu County, linking the sources of natural gas available on the shore of the Black Sea and the BRUA corridor, ensuring as such the possibility to direct the gas towards Bulgaria and Hungary through the existing interconnections Giurgiu – Ruse (with Bulgaria) and Nădlac-Szeged (with Hungary). This pipeline shall be interconnected with the actual international pipeline for gas transmission T1. The capacity of transmission is 8.14 million m3/year according to the procedure "Open Season" presented on the website of SNTGN TRANSGAZ S.A.

The estimated value of the project provided in the PDSNT 2017-2026 increased from Eur 278.3 million to Eur 360.5 million in PDSNT 2018-2027, following the completion of the feasibility study with the modification of the length of the transmission pipeline from 307 km to 308.2 km.

Current state of the project

Following the completion of the technical documentations to obtain the building permit, as well as of the exhaustive decision from the date of 12.07.2018, the length of the transmission pipeline is 308.4 km (segment I in length of 32.5 km with the diameter of Ø 48" and segment II in length of 275.9 km with the diameter if Ø 40"), resulted after the change of the route to avoid some archaeological sites in the area.

The decision to finance the project is conditional on the conclusion of the commercial contracts (project A non-FID). The completion term of the project was deferred until 2021, as a consequence of the resumption of the process of reservation of incremental capacity for PM Tuzla.

7.3 - ***The interconnection of the national transmission system with the gas international transmission pipeline T1 and reverse flow Isaccea*** **– project code TRA-N-139 (TYNDP)-List 3 PCI -6.24.10** (corridor Isaccea T1 –Onești).

Following the completion of the feasibility study, the project in total value of Eur 101 million, was reconsidered and divided in two phases, Phase I in value of Eur 8.8 million, to be ended in 2018 and Phase II in value of Eur 92.2 million to be ended in 2019.

The projects consist of interconnection works between the NTS and the international transit pipeline T1, in the area SMG Isaccea and of repairs to the transmission pipeline (Dn 800 mm) Cosmești – Onești in length of 66 km, in phase I. In phase II they are scheduled works of modernizations and amplification of the compressor stations Siliștea and Onești, as well as modernizations within NT Siliștea, Șendreni and Onești.

The project shall allow to be ensured reversible physical flows from Negru Vodă 1 to Isaccea 1 and the creation of a transmission corridor between the systems from Greece, Bulgaria, Romania and Ukraine.

The operator intents to access some non-refundable European funds (FID project).

Following the completion of the feasibility study and the details of execution, evaluation of the transmission pipelines, the project was reconsidered through the staging of the works and the reassessment of its value, which increased from Eur 65 million to Eur 101 million. In the work it was included the modernization of the compressor stations and the three technological nodes corresponding to the project.

Current state of the project

Following the reassessment of the project as a consequence of the completion of the technical documentation and the obtaining of the authorizations and the exhaustive decision, the estimated value of the project is Eur 99.23 million, and the completion term of phase II was deferred for 2020.

7.4 - ***Developments in the North-Eastern area of Romanian for the improvement of the supply of natural gas in the area, as well as for ensuring the capacities of transmission to/from the Republic of Moldova.*** The project accepted as eligible for the financing from European funds for regional development, under the conditions established by the **High Infrastructure Operational Program** within the **Priority Axis 8 –** Strategic Objective 8.2 ”Increase of the degree of interconnection of the National Transmission System for natural gas with other neighbouring systems”, has a non-refundable financial allocation of Eur 55 million.

The project has as purpose the ensuring of a capacity of gas transmission of 1.5 billion m3/year in the point of interconnection between the Romanian transmission system and that of the Republic of Moldova, on the route Onești-Gherăești-Lețcani, with *a total value of Eur 174.25 million and the completion term in 2019* (project A non-FID).

The projects consist of the fulfilment of the following objectives:

- Construction of a new natural gas pipeline, having a diameter of 700 mm Dn and a pressure of Pn 55 bar, in the direction of Onesti - Gherãesti, 104 km long. The route of this pipeline will be largely parallel to the existing pipes of diameter 500 mm Oneşti - Gherăeşti;

- construction of a new natural gas pipeline with a diameter of 700 mm Dn and a pressure of Pn 55 bar, in the direction of Gherăeşti - Leţcani, with a length of 61.05 km. This pipeline will replace the existing pipeline Dn 400 Gherăeşti - Iaşi on the Gherăeşti - Leţcani section;

- construction of a new gas compressor station in Onesti, with an installed capacity of 9.14 MW, 2 compressors of 4.57 MW, one active and one spare;

- the construction of a new gas compressor station in Gherãesti with an installed capacity of 9.14 MW, 2 compressors of 4.57 MW, one active and one spare.

Following the completion of the technical project for obtaining the authorizations, following the modification of the route of the transmission pipelines, in length of 165.15 km, and the increase of the maximum capacity of the two compressor stations Onești and Gherăești, the total value of the project increased from Eur 131.7 million to the value of Eur 174.25 million.

Current state of the project

The project is implemented by the Management Authority within the Ministry of European Funds and it benefits from a non-refundable financial allocation through AP8-" Smart and sustainable systems of gas and energy transmission" in value of approx. Eur 46.3 million. At the present time, SNTGN TRANSGAZ S.A. implements the procedures of public procurement, and the completion and commissioning term is 2019-2020.

7.5 - *Development on the Romanian territory of the central transmission corridor for the reception of natural gas from the shore of the Black Sea – Amplification of the bidirectional transmission corridor Bulgaria - Romania - Hungary - Austria (BRUA phase 3)* – project code TRA-N-959 (TYNDP)- List 3 PCI -6.24.10

The project *has an estimated value of Eur 530 million, and the completion term in 2023*, and it consists of the development of the gas transmission capacity on the corridor Onești-Coroi-Hațeg-Nădlac depending on the volumes of natural gas available on the shore of the Black Sea or from other onshore perimeters, as well as the ensuring of a reversible run on the interconnection Romania-Hungary. The project is divided into two phases: in the first phase it is implemented the reversible running on the interconnection Romania-Hungary, through a new pipeline Băcia-Hațeg-Horia-Nădlac in length of 280 km and two new compressor stations, and in the second phase it is implemented the development of the NTS between Onești and Băcia through the replacement / rehabilitation of some existing pipeline segments, two or three new compressor stations on the route Onești-Băcia.

BRUA projects phase 1, 2 and 3 have been merged on the updated list (List 3/2017) of **projects of common interest** published in the month of November 2017 as annex to the Regulation 347/2013 being included in position 6.24 with the title "**Group of projects which supposes the gradual increase of the capacity of the bidirectional transmission corridor Bulgaria – Romania – Hungary – Austria (BRUA phase 1, 2 and 3)".** The project ensures

the capacity of 1.75 billion m3/year in the first phase, 4.4 billion m3/year in the second phase and the possibility to receive the quantities of natural gas from the new resources discovered in the Black Sea, in the third phase.

The completion of this corridor depends on the evolution of the demand for capacity and on the exploitation of natural gas deposits from the Black Sea or from other on-shore perimeters, being possible to make a final investment decision only when the demand for capacity is confirmed under agreements and contracts of reservation (project LA non-FID).

Current state of the project

At the present time it was completed the feasibility study. SNTGN TRANSGAZ S.A. shall start the feasibility study when they will be provided additional data and information by the concessionaires of perimeters from the Black Sea (confirmations regarding the requests for capacity).

7.6 - ***New developments of the NTS for the reception of the gas from the shore of the Black Sea*** (Vadu -T1 opposite to Grădina, Constanţa County) **–** The project is of National Significance under G.D. no. 563 from 4 August 2017 and it is included on the PCI List (TRA-N-964) at number 6.24.10 point 3 (project A non-FID).

The project consists of the construction of a gas transmission pipeline in length of approximately 25 km from the shore of the Black Sea to the existing pipeline of international transmission T1, with a capacity of transmission of 1.1 billion m3/year, as per ,,Open-Season" process.

The estimated completion term is year 2019, with an estimated value of Eur 9.14 million, depending on the graphics of achievement of upstream offshore projects.

Current state of the project

Following the technical project in view of obtaining the building permit and exhaustive Decision, the estimated completion / commissioning term of the project was deferred to 2019-2020, in correlation with the implementation of upstream offshore project.

The process of **incremental capacity for PM Vadu** ended with the allocation of capacity and the conclusion of the gas transmission contract.

7.7 - ***Romania-Serbia interconnection – interconnection between the National Transmission System for natural gas and the similar gas transmission system from Serbia***

The project has the purpose to facilitate the export of natural gas to Serbia (opposite to the locality of Mokrin) with reception from the future pipeline BRUA phase I.

The project consists of the establishment of a new direction of interconnection, respectively Recaș – Mokrin through a gas transmission pipeline in a total length of 97 km, of which on the Romanian territory 85 km of pipeline (with the diameter of Ø 24" and the pressure of 63 bar) and a measurement station. *The completion term of the project, in a total value of Eur 50.7 million, of which Eur 42.4 million corresponding to the investment works for Romania, is year 2020* (project A non-FID).

Following the completion of the feasibility study, the completion term of the project was deferred to year 2020, and the total value increased to Eur 50.7 million (of which Eur 42.4 million for Romania), due to the change of the direction of interconnection from Arad-Mokrin to Recaș-Mokrin with the increase of the total length of the transmission pipeline from 80 km to 97 km and the replacement of the SRM on the Romanian territory.

Current state of the project

Currently, the value of the project is estimated to be Eur 53.76 million, due to the modification of some technical parameters of the pipeline and to the identification of some protected natural areas, which impose the modification of the route of the gas transmission pipeline.

7.8 *Modernization of SMG Isaccea 1 and SMG Negru Vodă 1*

To increase the degree of energetic security in the region they have been concluded two Agreements of Interconnection between SNTGN TRANSGAZ S.A. and PJSC Ukrtransgaz, respectively Bulgartransgaz for PI Isaccea 1 and PI Negru Vodă 1. The project consists of the construction of two new stations of gas measurement in the locations of the existing ones, with the modernization and equipment with new installations of measurement/filtering/separation and the possibility to operation in a bidirectional regime for SMG Isaccea 1 (in value of Eur 7.1 millions) and SMG Negru Vodă 1 (in value of Eur 6.8 millions). *The estimated completion term is year 2019, with a value of Eur 13.9 million* (project FID).

Current state of the project

Currently, Transgaz announced the increase of the value of the project to Eur 26.7 million. The completion term for SMG Isaccea 1 is year 2019, and for SMG Negru Vodă 1 is 2019-2020, depending on the obtaining of the land and authorizations.

7.9 - *Interconnection between the national gas transmission system and the gas transmission system from Ukraine, on the route Gherăești - Siret*

In the completion of the project regarding the development of the NTS in the North-Eastern area of the Romanian territory, for the increase of the supply of natural gas in the area, as well as for the ensuring of the capacity of transmission to/from the Republic of Moldova, SNTGN TRANSGAZ S.A. identified the opportunity to implement an interconnection between the NTS and the gas transmission system from Ukraine, on the route Gherăești – Siret.

The project, which is an early stage, consists of the construction of a natural gas transmission pipeline in length of approximately 130 km on the route Gherăești – Siret and of the corresponding installations, the building of a cross-border gas measurement station and the amplification of the compressor stations from Onești and Gherăești, as the case may be. *The estimated term is year 2025, and the estimated value is Eur 125 million* (project LA non-FID).

Major projects in natural gas storage systems

As regards the routes of development of natural gas storage systems, *PDSNT 2018-2027* presents 5 major projects proposed by the operators of natural gas storage deposits,

respectively by SNTGN Romgaz S.A. – the Gas Storage Branch Depogaz Ploiești SRL and Depomureș SA, of which two are comprised in the PCI List updated in November 2017. These projects concern the increase of the storage capacity and the modernization of the storage system and they lead to the increase of security in the supply of gas to the consumers, the coverage of the peaks of consumptions and the maintenance of the technical characteristics of optimal operation of NTS. These projects are the following:

8.1 "Modernization of the infrastructure of the natural gas storage system in the facility of Bilciurești" – is part of the projects of major national interest, having as purpose the increase of the capacity of gas storage/delivery (at 20 million m3/day) and of the security of the operation/exploitation of the storage system.

The project consists of the modernization of the installation of separation, measurement and drying of the groups of Bilciurești, the modernization of the aspiration/discharge system and cooling in the compressor station of Butimanu, the modernization of 19 injection/extraction wells, the drilling of 4 new wells, the execution of 11 km of gas transmission pipeline between the facility of Bilciurești and SC Butimanu, to be executed in phases.

The estimated completion term is 2025, with an estimated value of Eur 59 million (project FID).

8.2 "Increase of the gas underground storage capacity at the facility of Gherceşti" - The project is of national interest and it consists of the development and modernization of the infrastructure of the natural gas storage system of Ghercești to ensure the conditions of operation at the capacity of 600 million m3/cycle of storage (compressor station, measurement station, gas drying, modernization of 46 injection-extraction wells and of the infrastructure for the interconnection with NTS).

The estimated completion term is 2025, with an estimated value of Eur 122 million (project A non-FID)

8.3 "New facility of gas underground storage in Moldova" – The project is of national interest and it consists of the transformation in the underground storage facility of several deposits of production of depleted natural gas (Pocoleni, Comănești, Todirești or Devideni), that meet technical conditions and geological and physical characteristics for the safety storage of natural gas, in accordance with the legal provisions. The project consists of ensuring the conditions of operation at the capacity of approx. 200 million m3/cycle of storage, injection/extraction capacity of 1.4 million m3/day 2 million m3/day (compressor station, measurement station, gas drying, technological installations of surface corresponding to injection-extraction wells, the drilling of new wells of injection-extraction and the modernization of the infrastructure for the interconnection with the NTS).

The estimated completion term is 2025, with an estimated value of Eur 80 million. (project A non-FID)

8.4 ,"Increase of the capacity of gas underground storage at the facility of Sărmășel (Transilvania)" *Project comprised in the Corridor NSI East Gas – (North-Southern Interconnection East Gas), for the Central Eastern Europe Region, comprised on the List 3* ***PIC/2017*** *with the reference number* ***6.20.6*** - having as purpose the development of the existing underground storage facility from Sărmășel from the capacity of 900 million m3/cycle to 1550 million m3/cycle (an increase with 650 million m3/cycle), the increase of the injection capacity with 4 million m3/day, to a total of 12 million m3/day, through the

increase of the capacity of compression, new infrastructure of surface for 46 injection-extraction wells and the drilling of 15 new wells..

The estimated completion term is 2024 with an estimated value of Eur 136 million. (project LA non-FID)

8.5 "**Storage Unit – Depomureş**" comprised on List 3 PCI / 2017 - 6.20.4- The increase of the underground storage capacity of the underground facility of Târgu Mureș - where SC Depomureș S.A. has the capacity of holder of oil concession agreement and operator of the facility through the Group GDF SUEZ S.A. - having as purpose the reengineering and development of the gas underground storage facility from Târgu Mureș, with a current capacity of 300 million m3, through the increase of the flexibility of the facility through the increase of the injection/extraction capacity (from approx. 1.7 million m3/day to approx. 3.5 million m3/day after the implementation of phase 1, respectively to 5 million m3/day, after the completion of phase 2), respectively the increase of the storage capacity of the facility from 300 million m3 to 400 million m3 in the first stage, respectively to 600 million m3 in a subsequent stage, through the implementation of a gas central station (SC, SU, PM, bidirectional), new collecting pipeline, the modernization of the technological installations of surface corresponding to the injection/extraction wells, the drilling of new wells.

The estimated term for Phase I is year 2021, and Phase II after the implementation of Phase I with an estimated total value of Eur 87 million; (project A non-FID)

Cost of PCI storage projects

Crt. no.	Project	Estimated value mil Eur	Completion term	Importance of the project
8.1	Modernization of the infrastructure of the natural gas storage system – Bilciurești	59	2025	Increase of the capacity of daily delivery of gas from the facility of Bilciurești.
8.2	Increase of the capacity of natural gas underground storage capacity of the facility of Ghercești	122	2025	Increase of the capacity of daily delivery of gas from the facility of Ghercești.
8.3	New facility for natural gas underground storage in Moldova	80	2025	Increase of the capacity of storage of natural gas for ensuring the security of the supply of natural gas.
8.4	Increase of the capacity of underground storage of natural gas at the facility of Sărmășel (Transilvania)	136	2024	Increase of the capacity of storage of natural gas for ensuring the security of the supply of natural gas.
8.5	Storage Unit – Depomureș (phase 1)	87	2021	Increase of the capacity of storage of natural gas and of the flexibility of the facility
	TOTAL storage projects	**~ Eur 0,48 billion**		

Monitoring the implementation of the annual investment plans of the transmission system operator

The level of investments in the NTS for the year 2018 has been submitted according to the legal obligations of SNTGN Transgaz S.A, in its capacity as a transmission and system operator, under the PDSNT 2018-2027.

The investment program for the year 2018 was elaborated taking into account the obligations of the transmission system operator, stipulated in art. 125 and 130 of the Law on Electricity and Natural Gas no. 123/2012, as further amended and supplemented.

The estimated value of investments planned in 2018 was Ron 687 million, in increase with 60% compared to the value of the investment program for 2017, which was Ron 429.6 million. Of this value, Ron 501 million is the amount scheduled for major interconnection works and Ron 185.6 million represents the investments for the modernization and development of the domestic system.

In 2018 they have been completed major projects in value of Ron 288 million, which means approximately 57% of their scheduled value of Ron 501.7 million. The investments made in the domestic transmission system had a value of Ron 89.9 million, which represents a degree of achievement of 48% of their scheduled value, of approx. Ron 185.6 million.

The total value achieved on 31.12.2018 is Ron 378 million, representing approximately 55% of the scheduled value of Ron 687 million.

The degree of achievement of the investments forecast in year 2018 is present in the following table:

Name of the category of works	Scheduled 2018 (Ron)	Achieved 2018 (Ron)	Degree of achievement 2018 %
TOTAL of which:	**687,362,468**	**378,114,375**	**55.01**
Major projects - interconnections	501,746,688	288192,849	57.44
Investments in the NTS – national level	185,615,780	89,921,526	48.40

The low degree of achievement of these investments is due, according to the explanations of SNTGN TRANSGAZ S.A., to the delays in obtaining the building permits, the access to the land, the obligation to draw up again the technical documentations, the late performance of the procurements procedures, which led to the deferral of the executions terms of the works.

Monitoring the realization of investment plans for natural gas storage objectives/systems

The level of annual investments for the period 2019 – 2023, transmitted in accordance with the legal obligations provided for by art. 142 of the Law no. 123/2012 on energy and natural gas, as further amended and supplemented, by the operator of the storage system S.N.G.N. Romgaz S.A. – the Gas Storage Branch Depogaz S.A. Ploiești, varies between Ron 104 - 341 millions/year, detailed as follows:

- The facility from Urziceni with annual investments comprised between Ron 3 – 6 million;
- The facility from Bilciurești with annual investments comprised between Ron 12 - 50 million;

- The facility from Bălăceanca with annual investments comprised between Ron 3 - 12 million;
- The facility from Sărmășel with annual investments comprised between Ron 81 - 176 million;
- The facility from Ghercești with annual investments comprised between Ron 4 - 40 million;
- The facility from Moldova (newly established facility) with annual investments comprised between Ron 0.6 - 48 million.

During 2018 they have been started and completed the works on the following objectives of investments for the storage facilities – projects of common interest:

The facility from Bilciurești

- Modernization of the installation of separation, measurement and drying of groups 57 and 101 from Bilciurești;
- Elaboration of the schedule of conditions and procurement of works for the Modernization of 3 wells of injection/extraction, starting of the works for the modernization of the well 136 from Bilciurești.

The value of the executed works amounts to the sum of Ron 22.5 million respectively Eur 4.83 million.

The facility from Sărmășel

- Elaboration of the schedule of conditions and procurement of works for the Modernization of 6 wells of injection/extraction, completion of the works for the modernization of the wells 94 and 171 from Sărmășel;
- Procurement of the services of design for the elaboration of the Feasibility Study.

The value of the works carried out amounts to Ron 2.75 million, respectively Eur 0.59 million.

The value of the investments made by S.C. Depomureș S.A. in 2018 is Ron 48.7 million, representing works of construction of collecting pipelines, stations of cathodic protection and technological installations and equipment of surface corresponding to the storage facility from Târgu Mureș.

The value of the investments estimated for the period 2019-2023, transmitted in accordance with the legal obligations provided for by art. 142 of the Law no. 123/2012 on energy and natural gas, as further amended and supplemented, by the operator of the storage system S.C. Depomureș S.A., is Ron 147 million, this sum following to the allocated for constructions, technological equipment, measurement equipment, off-road vehicles and other tangible and intangible assets.

Monitoring the achievement of investment plans for natural gas distribution objectives/systems

In accordance with the obligations stipulated by art. 138 of the Law on Electricity and Natural Gas no. 123/2012 as further amended and supplemented, the operators of natural gas distribution systems (DSO) sent ANRE their 5-year investment plans.

The total estimated value for 2019-2023, according to the investment plans submitted by DSO, is approx. Ron 439 million annually.

From the analysis of these plans, in 2019 new pipelines are planned for the distribution of natural gas as well as to replace other pipelines and connections, both steel and polyethylene, in total length representing 3% of the length of the pipeline distribution and connections in operation on 31.12.2018. New pipes represent 1% of the length of the pipes and connections in service at the end of 2018.

The two major distribution system operators, Distrigaz Sud Retele and Delgaz Grid, have planned for the year 2019 investments totalling 206.5 million Ron and 182.4 million Ron respectively, representing approximately 47%, respectively 42% of the total value programmed for 2019 by all 36 distribution system operators.

For the two major distribution system operators, Delgaz Grid SA and Distrigaz Sud Retele SRL, which operated on 31.12.2018 about 83% of the national distribution system length, the percentage of the new gas distribution pipelines foreseen in the investment plan for 2018, represents only 0.16% of the total length of their distribution pipelines.

4.1.5. Observance of EU law

Observance of ACER and European Commission decisions

In accordance with Art. 102 ^ 1 (1) of the Law on Electricity and Natural Gas no. 123/2012, as amended and supplemented, "*ANRE complies and implements all relevant, legally binding, decisions of ACER ... and the Government, the competent ministry and the other specialized bodies of the central public administration, as the case may be, will take all necessary steps in this respect, according to their attributions and competencies.*"

In 2018 no ACER decisions with mandatory application for the natural gas sector were issued.

Observance of the provisions of Community legislation by transmission system operators, distribution system operators, system owners and economic operators in the sector

The required aspects were presented in chapter 3.1.1. Unbundling.

4.2. Promoting competition

According to the Law on Electricity and Natural Gas no. 123/2012, as amended and supplemented, the Romanian natural gas sector is structured in two segments: the regulated market and the competitive market. This segmentation has the role of clearly defining the specific economic activities that are under continuous surveillance - the regulated market (transport, storage, distribution, regulated prices for domestic customers) and those that are carried out freely, on the basis of competitive mechanisms.

The annual gas consumption recorded a slight decrease compared to 2017, reaching the level of approximately 129.54 TWh, with a decrease by 0.25% in 2018 compared to 2017.

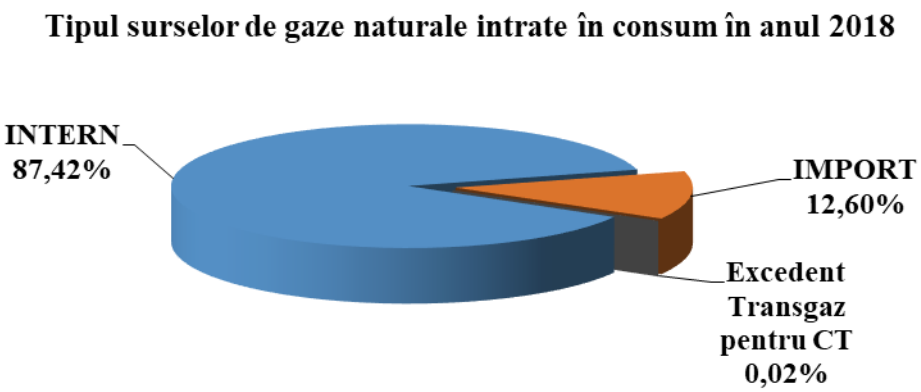
The number of participants on the Romanian gas market has steadily increased as the market was liberalized, especially in the gas supply sector, including in 2018:

- an operator of the National Transport System – SNTGN TRANSGAZ S.A.;

- 8 producers: Romgaz, OMV Petrom, Amromco Energy, Foraj Sonde, Hunt Oil Company of Romania, Mazarine Energy Romania, Raffles Energy and Stratum Energy Romania;
- external suppliers supplying natural gas from external sources in Romania: AIK Energy Ltd, E.ON Energiakereskedelmi Kft, Energiko EOOD, Engie Energy Management S.A. France, Gazprom Schweiz AG, Imex Oil Limited, MET Austria Energy Trade Gmbh, MET Energy Trading Bulgaria EAD, MET Magyarorszag Zrt, Trafigura Nat Gas Ltd, Udinex SPLLC, Vitol Gas and Power B.V., Wiee Bulgaria EOOD and Wiee Hungary Kft;
- 2 storage operators: Romgaz – Gas Storage Branch Depogaz Ploiești S.R.L. and Depomureș;
- 35 distribution operators – the largest being Distrigaz Sud Rețele and Delgaz Grid;
- 97 active suppliers present on the natural gas market, of which 35 suppliers operate on the regulated gas market.

4.2.1. Wholesale natural gas market

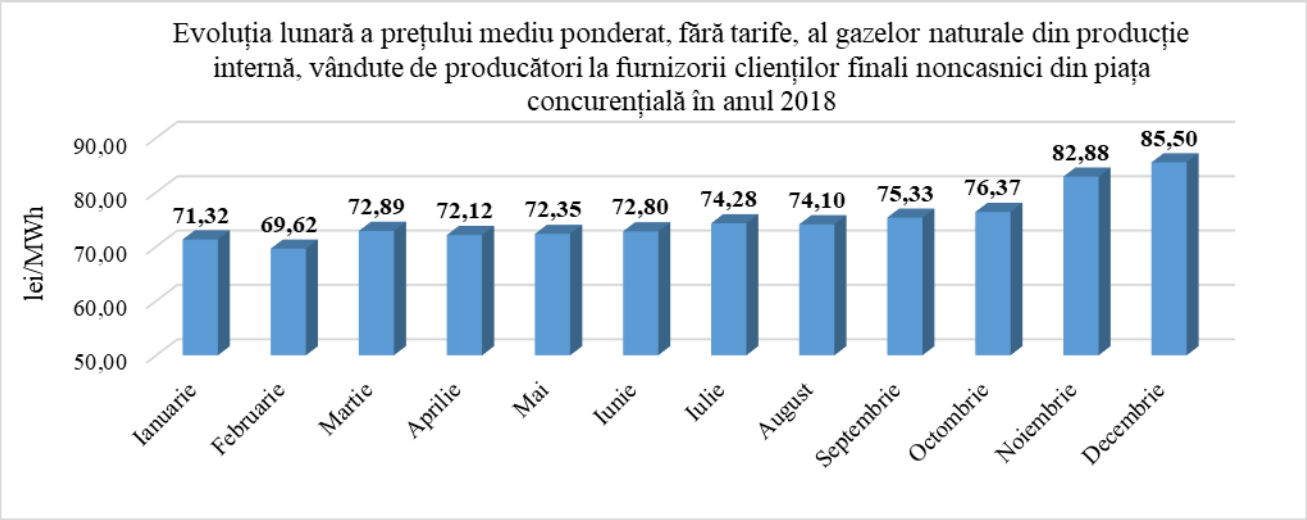
The domestic production of natural gas in 2018, current production and extracted from storage, which entered consumption consisted of about 87.42% of the total sources. The first two producers (Romgaz and OMV Petrom) together covered about 95.95% of this source.



The production extracted from production perimeters in the year 2018 but also that injected into underground storage facilities are presented in the table below:

Month	Current production (MWh)	Quantity injected from internal production (MWh)
January	9,549,658.566	-
February	9,123,959.604	-
March	10,001,684.219	176,774.725
April	9,143,435.962	2,561,909.998
May	9,161,862.164	3,050,995.101
June	8,897,393.456	2,785,833.291
July	9,260,863.715	3,637,642.645
August	9,093,228.711	3,590,437.112
September	8,936,944.200	3,003,043.315
October	9,251,591.871	1,107,509.994
November	9,148,537.028	275,474.071
December	9,633,798.913	-
Total 2018	**111,202,958.409**	**20,189,620.252**

Evolution of the weighted average price of natural gas from domestic production purchased by suppliers who hold non-domestic customers in the portfolio directly from natural gas producers.



In 2018, natural gas production in Romania was provided by a number of 8 natural gas producers: S.N.G.N. Romgaz S.A., OMV Petrom S.A., Amromco Energy S.R.L., Raffles Energy S.R.L., Foraj Sonde S.A., Stratum Energy LLC, Hunt Oil Company of România S.R.L. and S.C. Mazarine Energy România S.R.L.

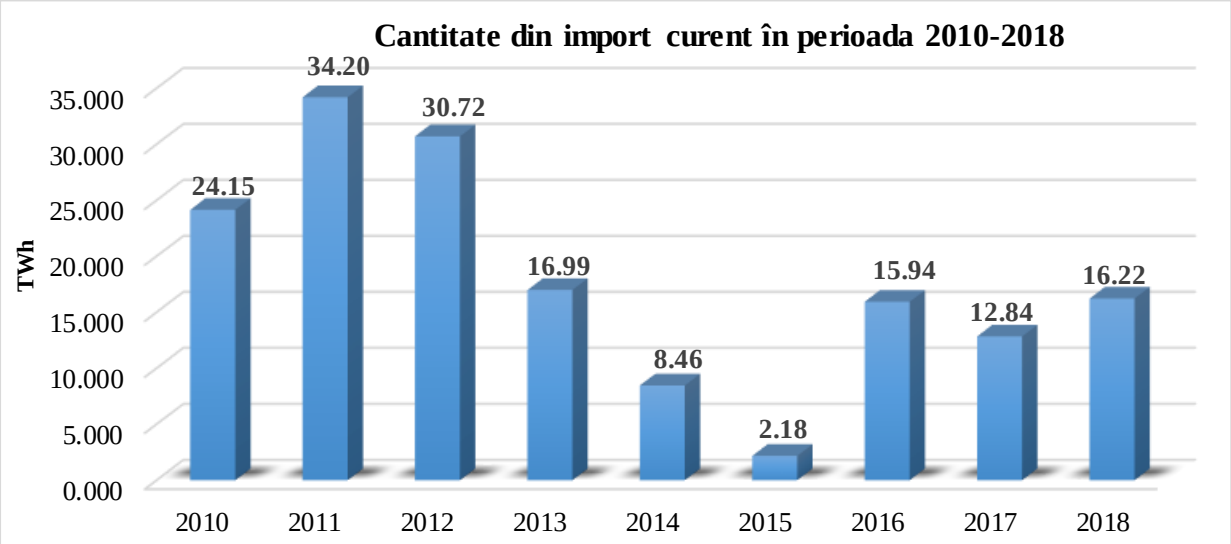
The quantity of natural gas produced in 2018 was 111.203 TWh, as follows:

TWh

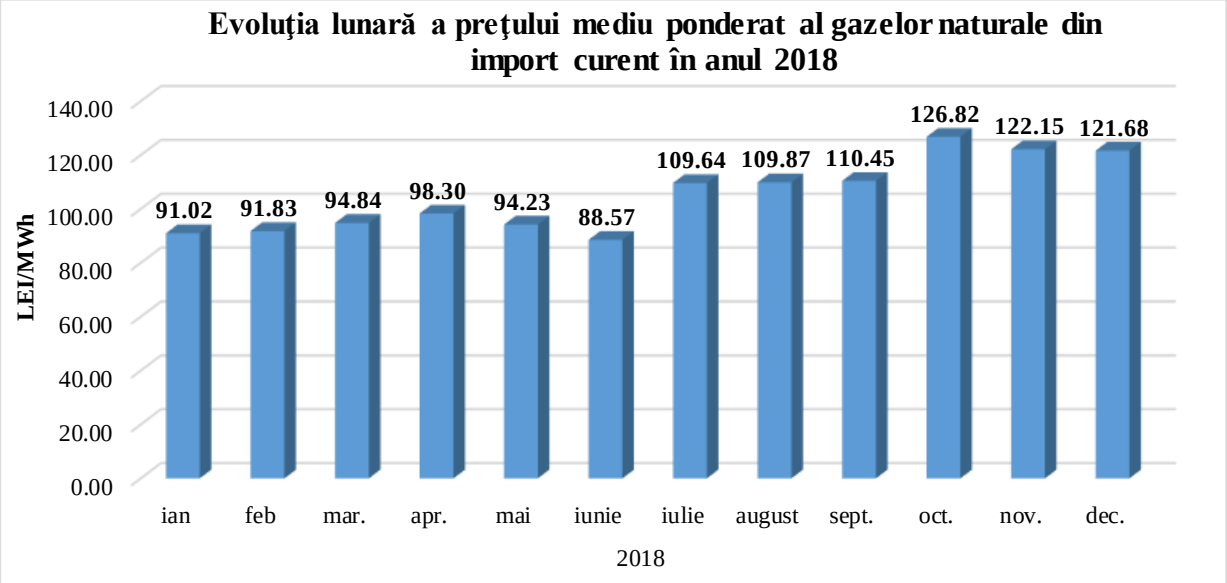
Amromco Energy	Foraj Sonde	Hunt Oil Company	Mazarine Energy Romania	OMV Petrom	Raffles Energy	Romgaz	Stratum Energy Romania	Total
2.352	0.099	0.814	0.137	50.495	0.041	55.986	1.279	**111.203**

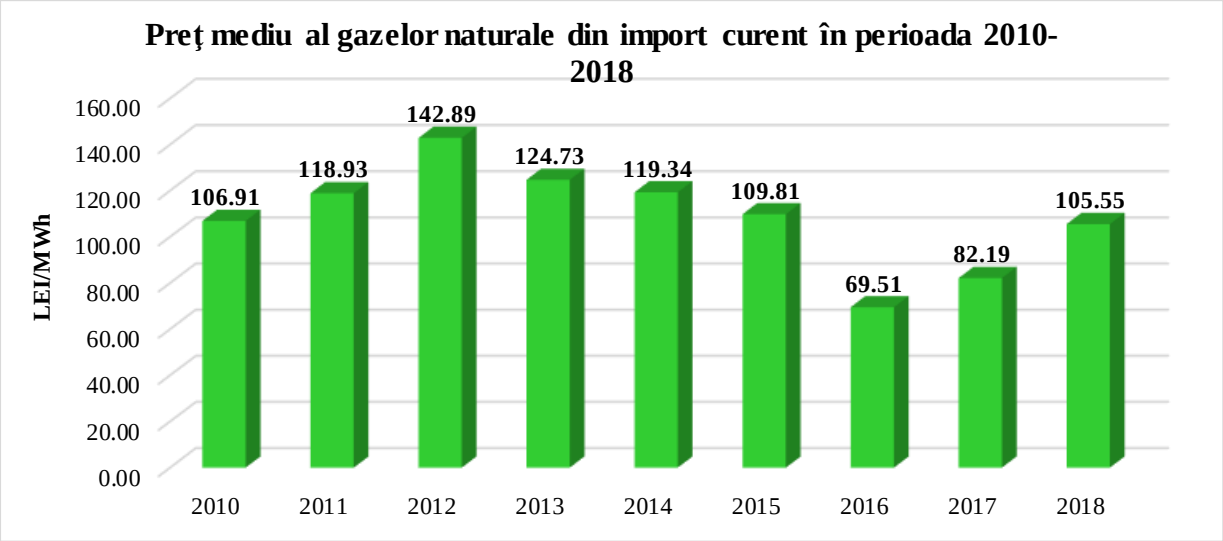
Imports that entered consumption in 2018, current imports and withdrawn from storage accounted for 12.60% of total sources. The first three importers - domestic suppliers - together made up 59.70% of these quantities.

Month	Current domestic production MWh	Direct import MWh
Month	9,549,658.566	2,747,261.768
January	9,123,959.604	2,346,560.030
February	10,001,684.219	3,231,454.056
March	9,143,435.962	12,434.223
April	9,161,862.164	3,353.713
May	8,897,393.456	4,061.515
June	9,260,863.715	240,550.543
July	9,093,228.711	625,339.896
August	8,936,944.200	1,305,626.155
September	9,251,591.871	756,377.276
October	9,148,537.028	1,828,398.298
November	9,633,798.913	3,120,928.140
Total 2018	**111,202,958.409**	**16,222,345.613**



Also in 2018 it is registered a revival of import consumption, compared to 2014 and 2015 (as can be seen for the chart) resulted amid the increase of the annual consumption.





Regarding the prices of natural gas from current imports, we mention that these are weighted average prices and were determined by weighting the prices with the monthly deliveries corresponding to sales transactions reported by the market participants and excluding VAT, excise duties or other taxes.

Quantities exported during the year 2018 have been the following:

Month	Exported quantity (MWh)
January	0.000
February	0.000
March	0.000
April	75,962.318
May	78,494.396
June	75,962.318
July	78,494.396
August	0.000
September	0.000
October	7,447.851
November	8,714.670
December	7,447.851
Total 2018	**332,523.801**

Natural gas storage

The natural gas storage activity during the summer period is necessary for the Romanian market to operate smoothly, due to the fact that the current production as well as the current import cannot cover the monthly consumption requirements during the winter period. As the current production is in excess of summer consumption, storage becomes even a necessity for natural gas producers, above the level of the minimum stock requirement calculated annually by ANRE, in the situation when the suppliers do not acquire the storage quantities required for consumption during the cold period.

Type of economic operator	Inventory at the end of the 2018 injection cycle MWh
Producers	8,809,998.024
Remaining market participants	15,295,669.081
Total stored	**24,105,667.105**

Following the application of **ANRE Order no. 35/2016**, which approves the methodology for the annual determination of the level of the minimum stock of natural gas for the holders of natural gas supply licenses, the minimum stock obligation for the storage cycle 2018-2019, for each supplier holding the final customers. The following table shows the annual evolution of the total minimum stock which the holders of the supply licenses and the holder of the operating license for the natural gas transmission system must hold in underground storage until 31 October of each year:

Level of minimum annual gas inventory (MWh)	
2013	24,248,110.943
2014	19,765,212.051
2015	17,477,030.807
2016	18,340,862.385
2017	18,649,242.677
2018	21,361,797.373

The table below shows the monthly evolution of the natural gas stock existing in the underground storage facilities during 2018.

Inventory 2018	Total (MWh)
January 2018	11,746,512.553
February 2018	6,959,536.907
March 2018	4,150,860.918
Inventory at the end of the extraction cycle	**4,150,860.918**
April 2018	6,354,572.783
May 2018	9,405,567.888
June 2018	12,175,167.383
July 2018	15,769,620.022
August 2018	19,316,754.555
September 2018	22,904,126.190
October 2018	23,783,676.115
Inventory at the end of the 2018 injection cycle*	**24,105,667.105**
November 2018	20,651,441.068
December 2018	14,461,290.978

*they have also been taken into consideration the extraction made during summer

On the national gas market, there are two underground natural gas storage operators, Depomureş S.A. and S.N.G.N. Romgaz S.A. – Gas Storage Branch Depogaz Ploiești S.R.L. The total capacity and the evolution of the use of this capacity are shown in the table below.

Underground storage operator	Year	Capacity of storage facility (MWh)	Inventory after the extraction activity (MWh)	Injected quantity* (Apr. - Oct.) (MWh)
Romgaz	2013	29,503,400	6,704,018.854	21,188,550.748
	2014		8,141,654.008	18,077,373.958
	2015		5,611,283.576	17,869,463.343
	2016		8,521,425.916	14,894,617.259
	2017		5,311,927.379	16,121,839.816
	2018		3,486,578.156	18,095,856.140
Depomureş	2013	3,154,550	330,006.289	3,024,810.381
	2014		570,191.740	2,587,221.864
	2015		272,360.874	2,883,003.902
	2016		378,675.860	2,084,214.398
	2017		172,135.518	3,021,150.985
	2018		664,282.762	2,362,868.907

* does not include the stock of natural gas left over from the previous injection cycles after the extraction activity.

Centralized markets

In 2018, the quantities traded on centralized markets, on the platforms administered by the operators OPCOM and BRM, amounted to a total volume of 70.51 TWh, of which 68.01 TWh for the wholesale market and 2.50 TWh for the retail market as follows:

Month	Market	Monthly average prices (Ron/MWh)	Traded quantities (MWh)
January	wholesale	80.44	2,832,390.000
	retail	122.14	18,284.000
February	wholesale	79.41	3,000,416.000
	retail	107.36	70,152.246
March	wholesale	77.32	20,811,436.000
	retail	117.53	45,678.970
April	wholesale	81.61	7,740,500.000
	retail	124.62	394,589.150
May	wholesale	86.00	7,564,306.000
	retail	129.78	205,958.960
June	wholesale	93.90	847,623.000
	retail	130.02	56,498.410
July	wholesale	94.88	738,630.676
	retail	122.07	134,782.56
August	wholesale	103.83	1,600,315.000
	retail	133.49	175,941.530
September	wholesale	111.10	1,443,647.490
	retail	167.21	540,244.570

October	wholesale	111.29	8,249,467.026
	retail	169.44	228,589.617
November	wholesale	116.94	7,427,474.078
	retail	157.47	167,448.480
December	wholesale	121.26	5,758,256.664
	retail	149.74	461,809.990
Total 2018	wholesale	92.90	68,014,461.934
	retail	145.17	2,499,978.479
			70,514,440.413

The table contains the quantities traded on centralized markets, not the quantities actually delivered that month, and the monthly prices are the result of the trading orders concluded in those months. This order may have delivery times ranging from 1 month, i.e. the month in which the transaction was concluded, and 12 months. The monthly quantities from the said table comprise the quantities traded on the BRM transaction platforms, available platform, on the STEG platform, the intra-day market platform and the day-ahead market platform, as well as the quantities traded on the Day-ahead Marked of Natural Gas, from the platform administered by OPCOM; their corresponding prices represent the weighted average with the quantities of the prices of the transactions concluded on the platforms administered by the two license holders for the activity of administration of centralized markets in the natural gas sector.

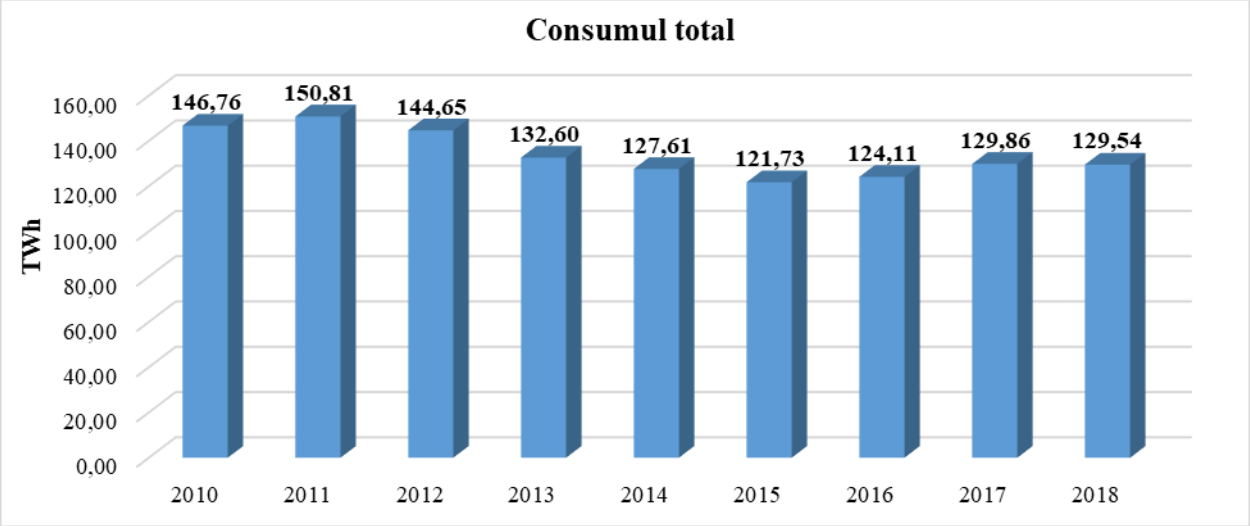
4.2.2. Retail gas market

In 2018, 80 suppliers were active on the retail gas market, of which:

- 38 suppliers operating on the regulated retail gas market; and
- 80 suppliers operating on the competitive natural gas retail market.

The total number of final customers at December 2017 was approximately 3,865,456 of which 204,454 non-household customers (about 5.29%) and 3,661,002 household customers (about 94.71%).

Total gas consumption in 2018 was about 130 TWh, showing a decrease of about 0.25% compared to 2017



Within the total consumption of the natural gas sector, a share is represented by specific consumption of the sector's activities or operators' consumption in relation to the specific technological processes: technological consumption, energy consumption and deviations due to the measuring instruments.

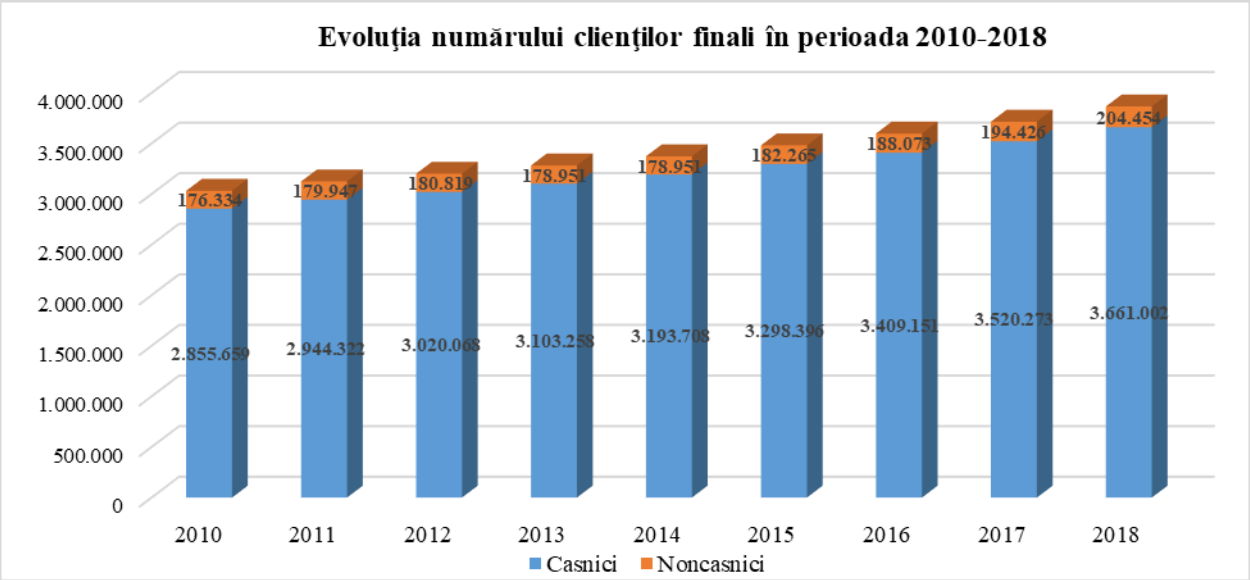
Excluding these consumptions from the total, in 2018 the consumption delivered by the suppliers to the end customers was about 119.19 TWh, of which approx. 85.25 TWh was non-domestic consumption and 33.94 TWh household consumption as follows:

Final customers	Number of clients	Consumption* (TWh)	Weight in total consumption
Household	3,661,002	33.94	28.48%
Non-household	204,454	85.25	71.52%
Total	3,865,456	119.19	

* Total consumption delivered to final customers (does not include technology consumption, energy consumption and deviations due to measuring instruments).

In 2018, the share of quantities consumed by household customers from the total quantity delivered by the suppliers is **28.48%,** and the number of these customers represents **94.71%** of the total final customers of natural gas. Although the number of non-household customers accounts for only **5.29%** of the total final customers of natural gas, the share of consumed by them amounts to **71.52%** of the total consumption delivered by suppliers in 2018.

Month	No. of clients		Total no. of clients	Total consumption (MWh)
January	Household	3,536,200	3,732,588	16,182,176.757
	Non-household	196,388		
February	Household	3,540,356	3,736,774	15,248,436.369
	Non-household	196,418		
March	Household	3,545,343	3,740,356	14,928,035.384
	Non-household	195,013		
April	Household	3,549,137	3,743,695	7,599,452.315
	Non-household	194,558		
May	Household	3,564,231	3,761,055	5,813,643.966
	Non-household	196,824		
June	Household	3,574,833	3,771,555	5,587,205.282
	Non-household	196,722		
July	Household	3,585,433	3,783,550	5,178,064.363
	Non-household	198,117		
August	Household	3,599,303	3,796,741	5,590,216.073
	Non-household	197,438		
September	Household	3,606,080	3,802,601	5,948,018.319
	Non-household	196,521		
October	Household	3,624,719	3,824,548	8,008,660.579
	Non-household	199,829		
November	Household	3,641,450	3,842,527	12,086,424.351
	Non-household	201,077		
December	Household	3,661,002	3,865,456	17,019,435.541
	Non-household	204,454		
Total 2018	-	-	-	**119,189,769.299**



Sales prices by end-user categories, depending on the connection system and the consumption class, are as follows:

Customers from the competitive market		
Connection system	**Consumption class**	**Price without tariffs (Ron/MWh) ***
Customers connected to the NTS	A1 (consumption of up to 1,162.78 MWh/year)	86.44
	A2 (consumption between 1,162.79-11,627.78 MWh/year)	88.03
	A3 (consumption between 11,627.79-116,277.79 MWh/year)	80.45
	A4 (consumption between 116,227.80-1,162,777.87 MWh/year)	82.07
	A5 (consumption over 1,162,777.87 MWh/year)	68.98
Customers connected in the distribution system	B1 (consumption of up to 23.25 MWh/year)	103.38
	B2 (consumption between 23.26 – 116.28 MWh/year)	102.45
	B3 (consumption between 116.29 – 1,162.78 MWh/year)	96.43
	B4 (consumption between 1,162.79-11,627.78 MWh/year)	88.90
	B5 (consumption between 11,627.79-116,277.79 MWh/year)	85.44
	B6 (consumption over 116,277.80 MWh/year)	81.62

* according to the reporting obligations provided by ANRE Order no. 5/2013

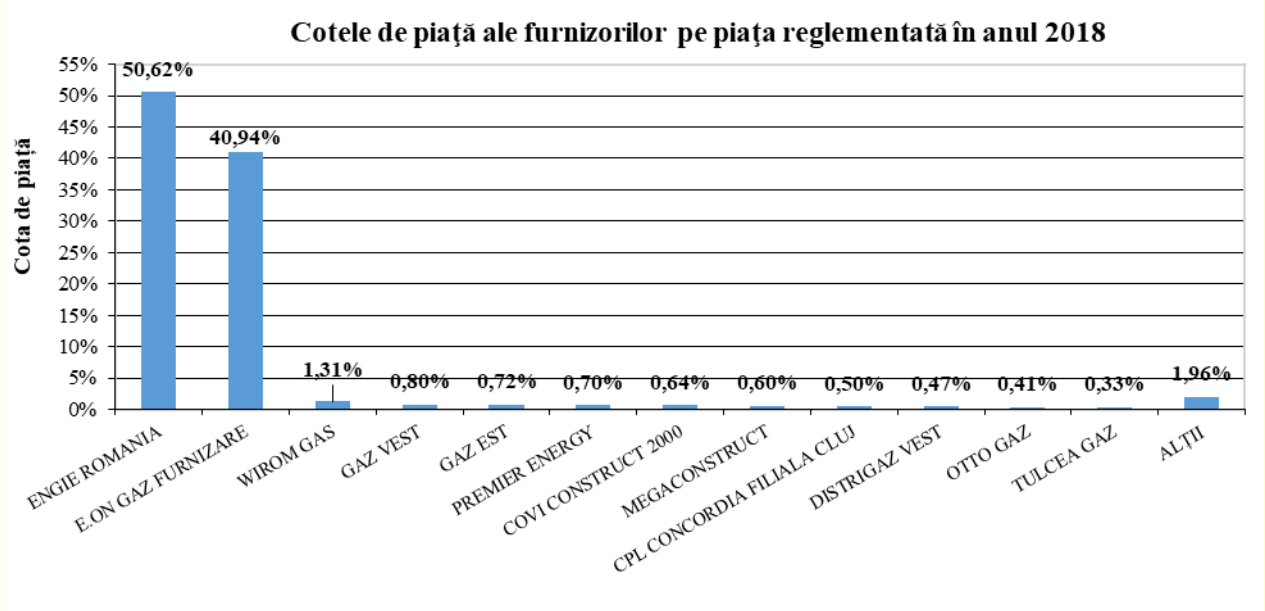
Customers from the regulated market		
Connection system	**Consumption class**	**Price with tariffs (Ron/MWh)***
Customers connected to the NTS	A1 (consumption of up to 1,162.78 MWh/year)	105.09
Customers connected in the distribution system	B1 (consumption of up to 23,25 MWh/year)	130.65
	B2 (consumption between 23.26–116.28 MWh/year)	128.32

	B3 (consumption between 116.29-1,162.78 MWh/year)	126.02
	B4 (consumption between 1,162.79-11,627.78 MWh/year)	123.11

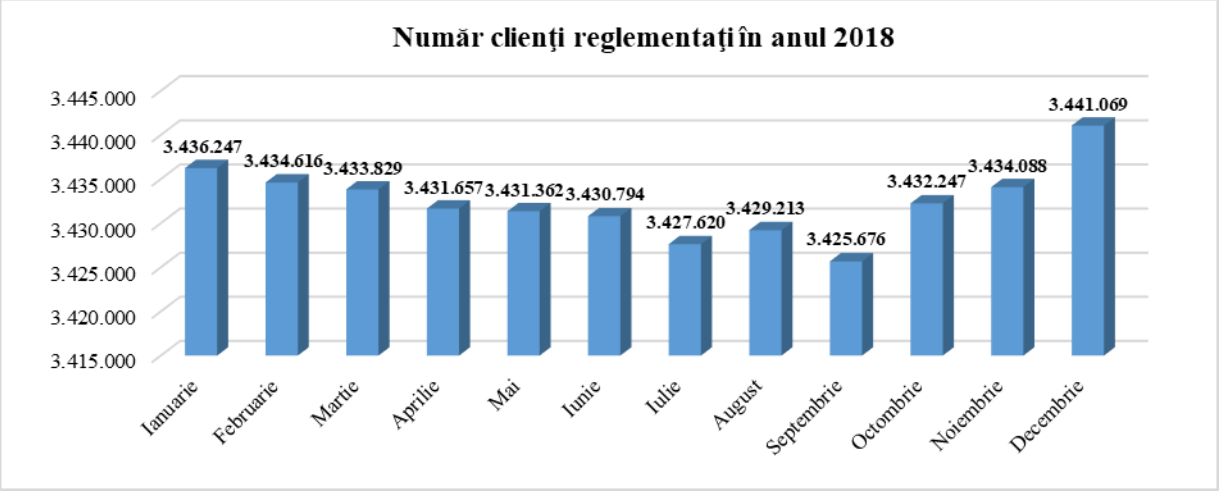
* according to the reporting obligations provided by ANRE Order no. 5/2013

Regulated retail market

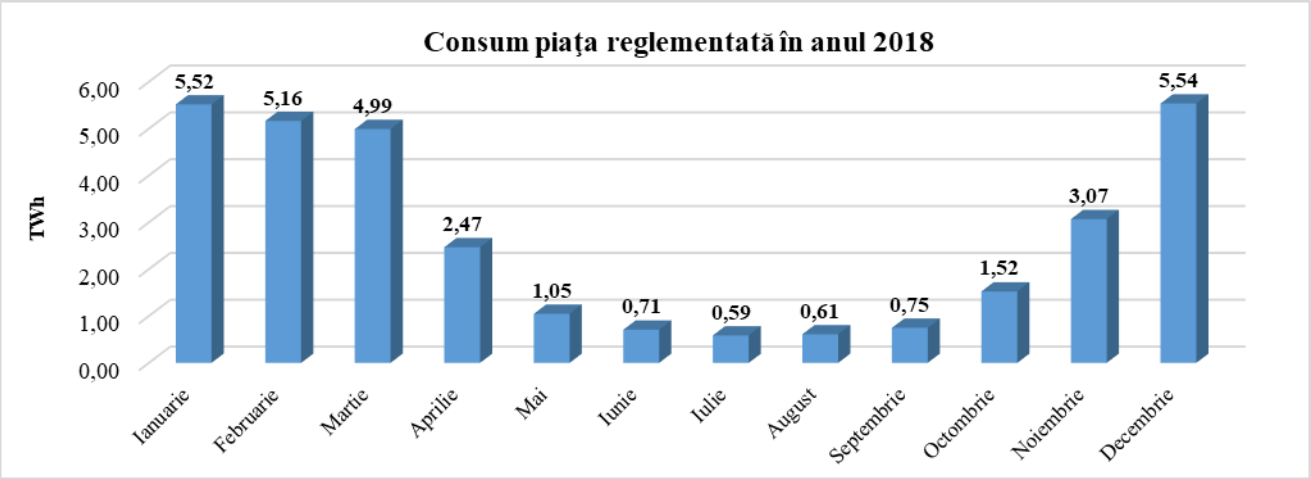
In 2018, on the regulated gas market activated 35 suppliers, the share of which is shown in the following graph:



The total number of customers regulated in December 2018 was 3,441,069**,** representing only household customers and their evolution during 2018 is shown in the following graph:

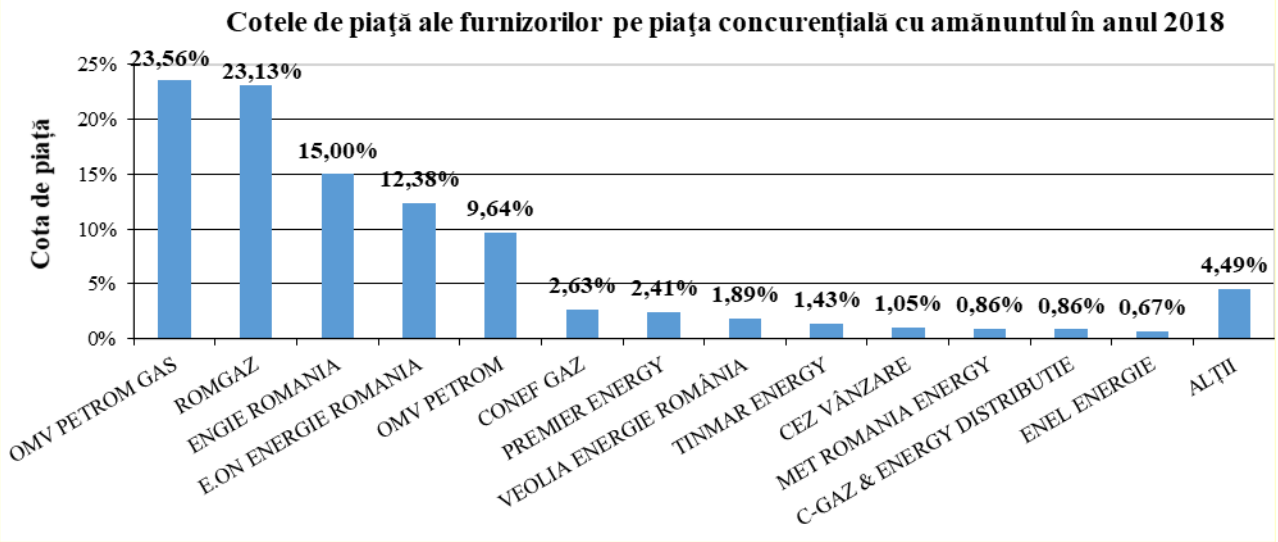


Consumption of regulated customers in 2018 was 31.98 TWh and evolved according to the following chart:

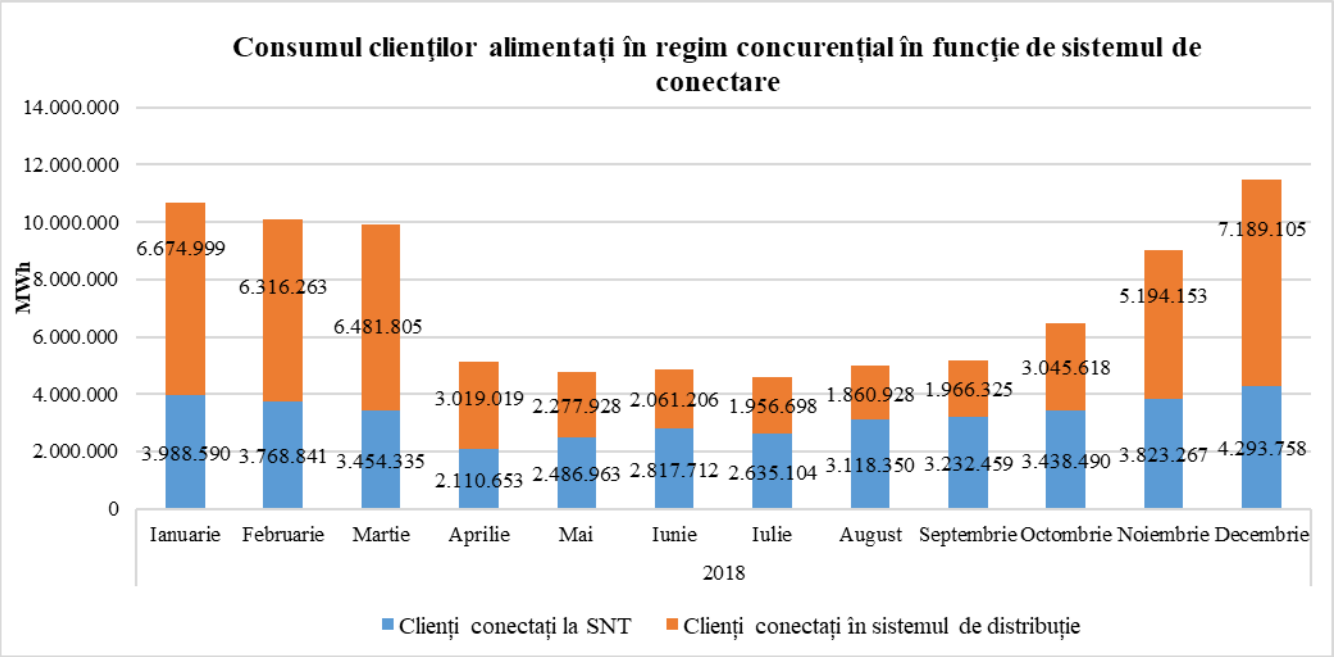


Competitive retail market

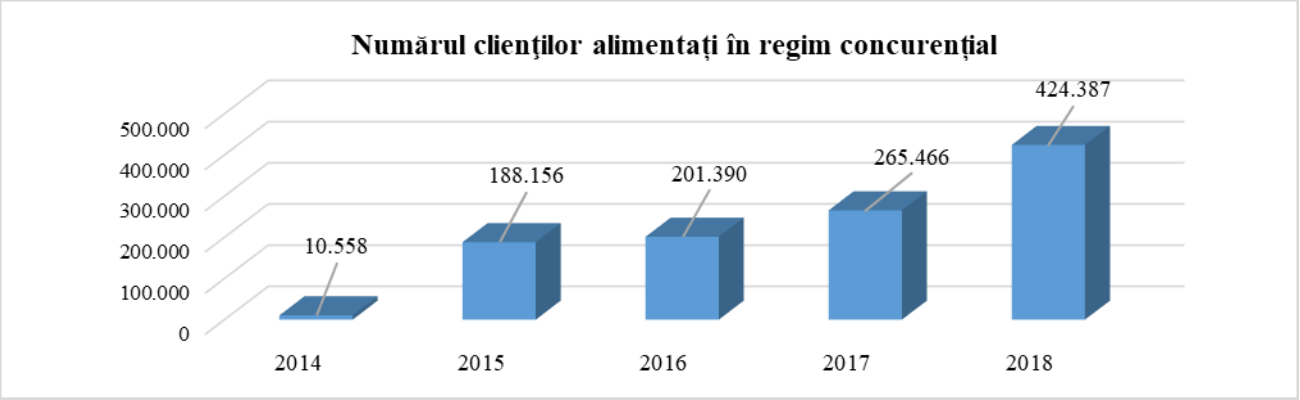
In 2018, 78 suppliers were active on the competitive gas market and their market share is shown in the following graph:



The total consumption of customers supplied under competitive conditions in 2018 was 87,212,569.685 MWh. Analyzing the chart below, showing the evolution of consumption of these customers according to the type of connection to the system, NTS and distribution, we can see a smaller variation in the consumption of the final customers connected to the NTS during the year, industrial sector in the number of 238 at the level of December 2018, compared to the consumption of final customers connected to the distribution, reflecting a consumption curve similar to household consumption; evolution suggests that a large number of non-household customers carry out economic activities where natural gas does not have a significant share.

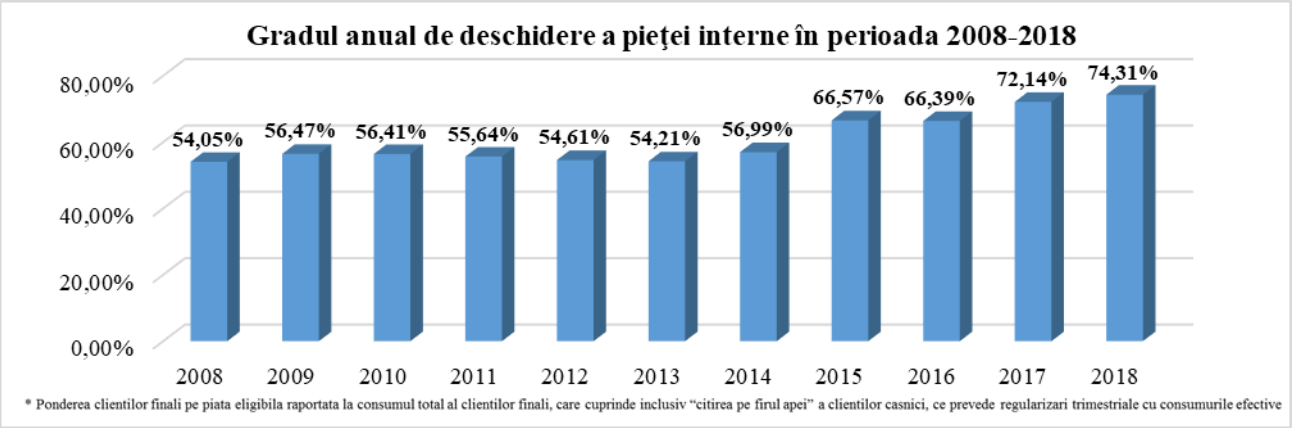


The total number of customers under competitive regime in December 2018 was 424,387. Considering that since January 1, 2015, the domestic gas market has been completely liberalized for non-household customers, in accordance with the provisions of Art. 179 (2) let. a) from the Law on electricity and natural gas no.123/2012, as further amended and supplemented, the total number of these customers increased compared to 2014. We present an annual evolution of their number, from that moment to present:



In 2018, there is an approx. 2% increase in the real degree of openness of the natural gas market compared to 2017, which has reached about 74% of total customer consumption.

The evolution of the annual degree of openness of the internal gas market is set out in the following graph:



* on January 1, 2015, the regulated price was eliminated for all non-domestic end customers on the natural gas market

4.2.3. Recommendations on supply prices, investigations and competition-promoting measures

The method of approving the regulated prices for the provision of regulated natural gas to household customers who have not exercised their eligibility is regulated by the *Methodology for establishing the income per unit related to the regulated supply activity carried out in a regulatory year, and approval of regulated prices in the gas sector, starting with 2016* (hereinafter referred to as Methodology), approved by ANRE Order no. 182/2015, as further amended and supplemented.

Regulated prices cover both the costs related to the purchase and sale of natural gas as the commodity itself, the costs related to the carrying out of the regulated supply activity, as well as all the costs related to the transmission, storage and distribution services, according to the legal provisions in force, performed in a prudential manner, necessary so that natural gas gets from the supplier to the household customer.

The regulated prices are ”monom” and quantify the fixed and variable costs related to the performance of the regulated supply activity.

Regulated prices shall be differentiated for each supply license holder as follows:

a) for companies that have legally separated their activity, by categories of clients for which the gas supply is regulated, located in the defined areas where the affiliated undertaking holds the gas distribution license, depending on annual consumption and type of systems (transmission/distribution) through which natural gas is supplied;

b) for companies that have not legally separated their natural gas supply activity, by categories of clients for which gas supply is regulated, located in the distribution area served as a licensed operator of the distribution system, depending on the annual consumption and type of systems (transport/distribution) through which natural gas is supplied.

The most important component of the regulated price is the unitary fixed amount to cover the costs associated with the acquisition of natural gas. Within the unit fixed amount, the highest share is the price of gas purchased as commodity.

Evolution of the natural gas purchase price from domestic production

Starting from 1 April 2017 the sale price for the natural gas from the domestic production was liberalized completely, being established within the competitive market, under contracts freely negotiated, with the suppliers and end customers, based on demand and offer.

Following the entry into force of the provisions of *Government Emergency Ordinance no. 64/2016 as further amended and supplemented, Law no. 123/2012 on energy and natural gas*:

i) the sale price for natural gas, both for the competitive market, as well as for the regulated market is based on market demand and offer,
ii) they have been established obligations for the producers and suppliers of natural gas to trade on the Romanian centralized markets a certain rate of the quantity of traded gas, rate established by Government Decision.

We mention that ANRE has no duties to intervene on the level of the price for which natural gas is sold by local and foreign producers. Under these conditions, ANRE is bound to update the prices following a growing evolution of the prices of natural gas sold by local producers and importers, as well as to cover the differences of cost of purchase of natural gas for the suppliers who also have in their portfolio end customers who have not exercised their right of eligibility.

At the same time, in accordance with the provisions of art. 61 point 12 para. (11) of **G.E.O. no. 114/2018** *regarding the establishment of some measures in the field of public investments and some tax-budgetary measures, the modification and completion of some legal acts and the prorogation of some terms, **in the period 1 April 2019 – 28 February 2022,*** the producers have the obligation to sell for the price of **Ron 68/MWh,** the quantities of natural gas resulted from the activity of current domestic production to suppliers and eligible customers. In this period, the producer has the obligation to sell with priority to suppliers, under the conditions regulated by ANRE, for ensuring the entire need of consumption of household customers, from the current production and/or storage facilities.

Evolution of regulated prices in which regulated natural gas is supplied to household customers who have not exercised their eligibility

In accordance with the provisions of *Law no. 123/2012 on energy and natural gas, as further amended and completed,* the natural gas market is comprised of the **regulated market and the competitive market**.

Regulated prices are established in a differentiate manner for each licensed supplier and by categories of customers, depending on the configuration of the systems by which the supply of natural gas is made. The final price at regulated household customers has the following structure:

- The unitary cost of gas (UCG), which represents the costs estimated for the coverage of the purchase of natural gas, including the corresponding services of storage and transmission, aimed for the resale within the regulated supply activity; **the purchase of natural gas as commodities is made by suppliers on a completely liberalized market,** irrespective of the gas source: domestic, import or from a facility;
- The unitary revenue allowed to perform the regulated gas supply activity;
- The tariff of distribution established for the respective category of customers;

- Delta UCG represents the unitary component of correction for the difference between UCG established by ANRE and the unitary costs effectively made and recognized by ANRE to the supplier who performs the regulated supply activity.

On 10 January 2018 it was recalculated the unitary fixed amount for the coverage of the costs of purchase of natural gas for regulated household customers, for the period January – March 2018

At the same time, for a number of 14 suppliers they have been approved the unitary revenues corresponding to the distribution activity, the unitary revenues corresponding to the supply activity regulation for 2017, as well as the component of cost regularization regarding the purchase of natural gas.

As such, following the modification of the UCG component, the value of which was established at Ron 88.28/MWh, from Ron 81.48/MWh, the approval of the new values for the distribution tariffs, of the regulated revenues corresponding to the regulated supply activity, of delta UCG components and given the calculation formula of the regulated price for household customers, provided for by art. 35 para. (7) of the Methodology, ANRE updated the regulated prices in force for a number of 36 suppliers who perform the activity of supply of natural gas in regulated conditions.

Thus, starting from the date of 10 January 2018, the regulated prices corresponding to household customers, category B1 (with a consumption of up to 23.25 MWh/year), increased, on average, by approx. 5.7%.

On the date of 1 April 2018, the regulated prices have been updated through the modification of the value of the unitary fixed amount to be used to cover the costs of purchase of natural gas (UCG), for the period between 1 April 2018 – 31 March 2019, respectively the value of Ron 88.22/MWh for regulated household customers.

As such, following the modification of the UCG value, ANRE updated the regulated prices in force for a number of 34 suppliers.

At the same time, following the establishment of some new regulated tariffs for the supply of the distribution service for a number of 12 distribution operators, it was updated as well this component in the structure of the regulated prices in force for a number of 12 suppliers. Consequently, based on the calculation formula of the regulated price for household customers provided for by art. 35 para. (7) of the Methodology, following the modification of the UCG components and, as the case may be, distribution tariffs, ANRE updated the regulated prices for a number of 36 suppliers who perform the activity of supply of natural gas in regulated conditions.

As such, starting from the date of 1 April 2018, the regulated prices corresponding to household customers, category B1 (with a consumption of up to 23.25 MWh/year), increased, on average, by approx. 4.8%.

On the date of 1 May 2018, following the establishment of some new regulated tariffs for the supply of the distribution service, for a number of 15 distribution operators, it was necessary the update of this component from the structure of the corresponding regulated prices. Thus, ANRE updated the regulated prices in force for a number of 15 suppliers who perform the activity of supply of natural gas in regulated conditions.

On the date of 1 June 2018, following the process of fusion by absorption of the company GAZ SUD S.A. (as Absorbed Company) by the company PREMIER ENERGY S.R.L. (as Absorbing Company), process that generated legal effects after the date of 31.12.2017, following the request of ANRE and in accordance with the provisions of the Methodology, the (Absorbing) Company PREMIER ENERGY S.R.L. forwarded the data for the establishment of the unitary revenue corresponding to the regulated activity of supply and absorption of regulated prices in the sector of natural gas, for year 2018.

On the date of 1 August 2018 it was recalculated the unitary fixed amount for the coverage of the costs of purchase of natural gas for regulated household customers, for the period August 2018 – March 2019.

At the same time, they have been approved the unitary revenues corresponding to the distribution activity, the unitary revenues corresponding to the regulated supply activity for year 2018, as well as the component of regularization of the costs regarding the purchase of natural gas.

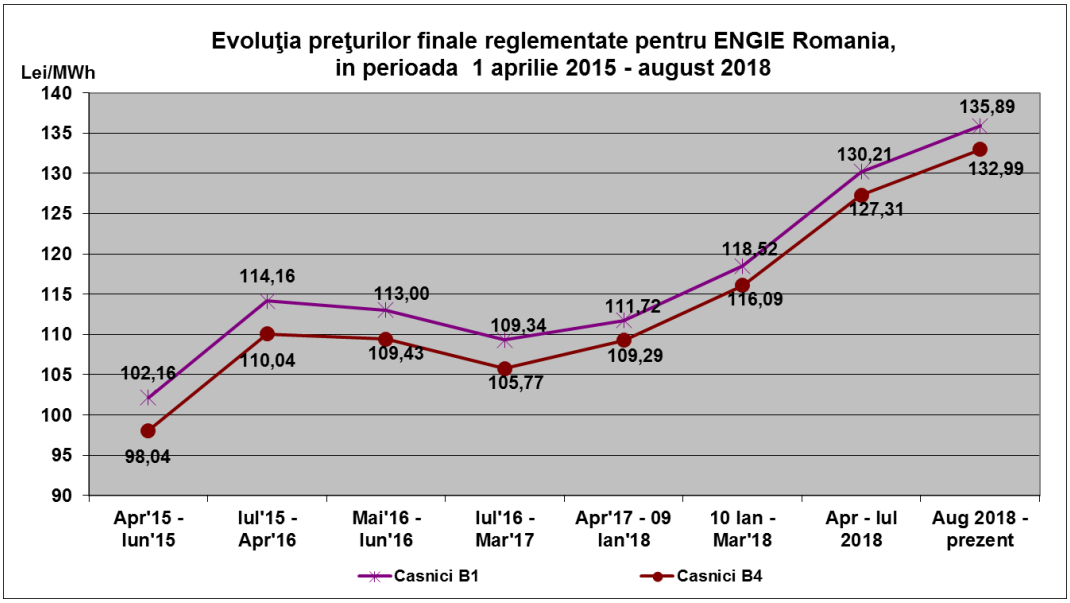
Thus, following the modification of the UCG component, the value of which was established at Ron 92.95/MWh, the approval of the new values for the distribution tariffs, for the regulated revenues corresponding to the regulated supply activity, for the delta UCG component, and based on the calculation formula of the regulated price for household customers, provided for by art. 35 para. (7) of the Methodology, ANRE updated the regulated prices in force for a number of 36 suppliers who perform the activity of supply of natural gas in regulated conditions.

As such, starting from the date of 1 August 2018, the regulated prices corresponding to household customers, category B1 (with a consumption of up to 23.25 MWh/year), increased on average with approx. 5.8%.

For suppliers with a representative market share, the regulated prices in force as of 1 August 2018 are as follows:

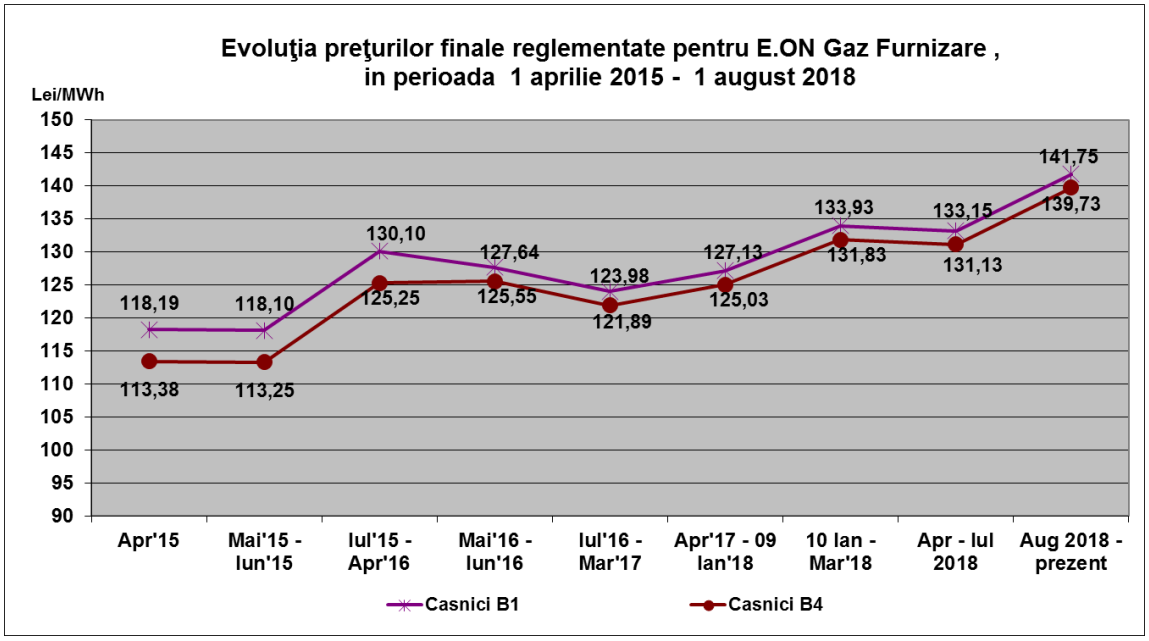
- Regulated prices for regulated natural gas supply by ENGIE ROMANIA S.A. for household customers:

Category of customers	**Ron/ MWh**
B. Final customers connected to the distribution system	
B.1. With a consumption of up to 23.25 MWh	135.89
B.2. With annual consumption between 23.26 MWh and 116.28 MWh	135.87
B.3. With annual consumption between 116.29 MWh and 1,162.78 MWh	134.27
B.4. With annual consumption between 1,162.79 MWh and 11,627.78	132.99



- Regulated prices for regulated natural gas supply by E.ON GAZ FURNIZARE S.A. for household customers:

Category of customers	Ron/ MWh
A. End customers connected directly to the transmission system	
A.1 Annual consumption of up to 1,162.78 MWh	110.62
B. End customers connected in the distribution system	
B.1. With a consumption of up to 23.25 MWh	141.75
B.2. With an annual consumption between 23.26 MWh and 116.28 MWh	140.68
B.3. With an annual consumption between 116.29 MWh and 1,162.78	140.16
B.4. With an annual consumption between 1,162.79 MWh and 11,627.78	139.73



4.3. Security of natural gas supply

In accordance with Art. 102 of the Law on Electricity and Natural Gas no. 123/2012, the line ministry monitors security of supply issues, in particular on demand/supply balances on the domestic market, expected future demand and available reserves, additional capacity planned, planned or under construction, quality and the level of network maintenance and the measures needed to cope with supply peaks and supply shortages for one or more suppliers. To this end, it shall publish a report every 2 years, by 31 July, outlining the findings made in the monitoring of these issues, as well as any measures taken or envisaged to address them, and shall immediately forward this report to the European Commission.

5. Consumer protection and dispute resolution in the electricity and natural gas sector

5.1. Consumer protection

5.1.1. Electricity

The Law on electricity and natural gas no.123/2012, as further amended and supplemented, defines the "vulnerable customer" as the final customer belonging to a category of household customers who, due to age, health or reduced income, are at risk of social marginalization, and which, in order to prevent this risk, benefit from social protection measures, including financial ones. Social protection measures, as well as the eligibility criteria for them, are set by normative acts. Vulnerable customers are the main beneficiaries of the social aids envisaged in the phasing out of regulated prices/tariffs.

We mention that from the date of 01.07.2018, following the completion of the deregulation schedule, ANRE no longer approved regulated tariffs, the consumption of household customers being invoiced at tariffs/prices for the universal service approved by ANRE. Consequently, household customers may conclude a contract of supply with any supplier active on energy market. They have the unconditional right to the universal service (US), respectively for the supply of energy to be made in conditions of quality and at reasonable prices, transparent, easily comparable and non-discriminatory, according to ANRE regulations. The household customer may at any time use this eligibility, having the right to change its electricity supplier in accordance with the provisions of the procedure approved by ANRE **Order no. 105/2014**:

- free of charge, subject to the terms of the supply contract in force;
- no more than 3 weeks after the customer has sent notice of termination of the supply contract in force.

They are also entitled to the US the **non-household customers** with a number of employees below 50 and an annual turnover of total value of assets from the balance sheet according to annual tax reports which does not exceed Eur 10 million, having the possibility to benefit from this right based on the request and the supporting documents sent to the SoLR.

The performance standard for the activity of supply of energy, (Standard), approved by **ANRE Order no. 6/2017,** rules the quality of the activity of supply of energy establishing:

- provisions related to the quality of the activity of supply;
- performance indicators which characterize the quality of the activity of supply;
- the guaranteed levels of the guaranteed performance indicators;
- the compensations that the suppliers of last resort pay to end customers beneficiaries of the universal service, in case of non-observance of the guaranteed levels of the performance indicators

The conditions which must be met, as well as the compensation that the suppliers of last resort have the obligation to pay automatically to end customers beneficiaries of the universal service, according to the provisions of the *Standard* are the following (CF – end customers, OR – network operator):

Crt. no.	Performance indicator*	Guaranteed level	Compensation in case of non-achievement of the guaranteed level
1.	Time limit for the issuance of the supply offer	15 working days	Ron 100, to which they are added Ron 50 for each day of delay, starting from the first day of delay
2.	Time limit for the reply to the complaint of the end customer regarding the invoice for energy	5 working days	Ron 100 to which they are added Ron 50 for each day of delay, starting from the first day of delay
3.	Time limit for the communication to the network operator of the request for the resumption of the supply of energy for a place of consumption disconnected for non-payment	4 hours	Ron 100 to which they are added Ron 50 for each day of delay, starting from the first day of delay
4.	Time limit for the reply to the complaints of the end customer regarding the disconnection of the places of consumptions for the non-payment of the invoice for energy	5 working days from the reception of the complaint by the supplier	Ron 100 to which they are added Ron 50 for each day of delay, starting from the first day of delay
5.	Time limit for the settlement of the request for the modification of the regulated tariff for the supply/ of complaints regarding the modification of regulated energy tariff	10 working days	Ron 100 to which they are added Ron 50 for each day of delay, starting from the first day of delay
6.	Time limit for the reply to the requests/complaints of the end customer, other than those treated explicitly in the standard.	15 working days, respectively 30 days with the prior notification of the end customer in the initial term of 15 working days	Ron 100 to which they are added Ron 50 for each day of delay, starting from the first day of delay
7.	Time limits provided for by the Procedure regarding the granting of the compensations to household customers for faulty household receivers, as a consequence of some accidental overvoltage occurred because of the network operator, in force.		Ron 100 to which they are added Ron 50 for each day of delay, starting from the first day of delay
8.	The time limit for the transmission to the network operator of a request/complaint related to the activity and obligations of the network operator, respectively to the end customer of the reply received from the network operator	The immediately following working day, for requests/complaints received from the end customer by electronic mail or telephone	Ron 100 to which they are added Ron 50 for each day of delay, starting from the first day of delay
		3 working days for requests/complaints received from the end customer in writing on paper/fax.	
		3 working days for the transmission to the end customer of the reply received from the network operator	

According to the provisions of the *Standard*, the suppliers of energy have the obligation to monitor a number of 53 indicators, of which we present below:

PI1 - the number of complaints related to invoicing (this indicator comprises both the grounded complaints, as well as the ungrounded complaints, irrespective whether they implied or not the verification of the data measured by the measuring operator – MO);
PI2 - the number of grounded complaints related to invoicing (this indicator comprises all of the grounded complaints, irrespective whether they implied or not the verification of the data measured by the MO);
PI 3 - the number of complaints related to invoicing which implies the verification of the data measured;

PI 4 - the number of requests/complaints received from end customers in relation with the activity of the network operator;
PI 5 - the number of requests of household customers to receive compensations for the deterioration of household receivers as a consequence of some accidental overvoltage occurred in the electric network of the network operator;
PI 6 - the number of compensations given as a consequence of the non-compliance with the terms provided for by the Standard;
PI 7 - the number of compensations paid to end customers for the non-compliance by the network operator with the performance indicators provided for by the performance standard for the network service, in force.

Following the information sent by the suppliers of last resort: CEZ Vânzare S.A., ELECTRICA FURNIZARE S.A., ENEL ENERGIE S.A., ENEL ENERGIE MUNTENIA S.A. and E.ON ENERGIE ROMÂNIA S.A., for the activity of supply of energy to all of their end customers (beneficiaries of the universal service, inactive, of last resort and eligible) in the period **01.01.2018 – 31.12.2018** they were recorded the following values of the above-mentioned performance indicators:

PI	Type of end customer	CEZ VÂNZARE	ELECTRICA FURNIZARE	ENEL ENERGIE	ENEL ENERGIE MUNTENIA	E.ON ENERGIE ROMÂNIA	TOTAL
PI 1	Household	3,309	11,087	1,918	2,930	11,176	30,420
	Small non-household	299	798	351	358	1,490	3,296
	Big non-household	8	15	61	19	0	103
	Total	**3,616**	**11,900**	**2,330**	**3,307**	**12,666**	**33,819**
PI 2	Household	1,366	9,154	866	1,266	5,348	18,000
	Small non-household	141	591	178	182	792	1,884
	Big non-household	2	11	38	16	0	67
	Total	**1,509**	**9,756**	**1,082**	**1,464**	**6,140**	**19,951**
PI 3	Household	2,425	7,980	860	1,183	6,823	19,271
	Small non-household	200	532	250	278	845	2,105
	Big non-household	6	7	48	14	0	75
	total	**2,631**	**8,519**	**1,158**	**1,475**	**7,668**	**21,451**
PI 4	Household	37,333	8,048	38,867	38,174	18,058	140,480
	Small non-household	846	504	4,376	3,829	1,395	10,950
	Big non-household	204	41	503	293	0	1.041
	total	**38,383**	**8,593**	**43,746**	**42,296**	**19,453**	**152,471**
PI 5	household	**691**	**448**	**669**	**670**	**436**	**2,914**
PI 6	Household	8	1	283	306	2	600
	Small non-household	0	0	6	3	0	9
	Big non-household	0	0	0	0	0	0
	total	**8**	**1**	**289**	**309**	**2**	**609**

PI 7	Household	0	5	19,535	9,668	5,912	35,120
	Small non-household	0	4	4,764	2,912	455	8,135
	Big non-household	0	0	229	118	27	374
	total	**0**	**9**	**24,528**	**12,698**	**6,394**	**43,629**

As regards the situation of the performance indicators achieved by the suppliers of energy who have concluded contracts of supply with the end customers on the competitive market, we mention that it was analyzed the information received from 48 suppliers who have had end customers throughout 2018. The values achieved by the suppliers have been centralized and they are presented below:

	PI values achieved by competitive suppliers in 2018			
	household	**small non-household**	**big non-household**	**Total**
PI 1	4,066	361	89	**4,516**
PI 2	1,942	247	62	**2,251**
PI 3	1,070	197	71	**1,338**
PI 4	4,677	484	343	**5,504**
PI 5	111	not applicable	not applicable	**111**
PI 6	0	0	0	**0**
PI 7	322	191	120	**633**

The performance indicators for the activity of supply of energy represent the quantitative and qualitative expression of the activity of a supplier of energy in relation with the customers it services, with whom it is in process of contracting or with whom it communicates to offer information, model offers or to handle the claims, as well as of the manner of intermediation of the relation with the network operator, the supplier representing, in the majority of the cases, the sole physical and contractual interface between these two parties: the customer and the network operator, except for the cases provided for by the legal and regulatory framework in force, in which the customer opts for the direct conclusion of the network contract with the network operator.

ANRE Order no. 189 from 07.11.2018, regarding the obligation of notification of end customers through the application ”*Offer comparator – type of supply of energy”*, was approved for the purpose of the introduction of the obligation for all suppliers of energy active on the retail market to complete the application developed by ANRE in 2017, for the purpose of the increase of the degree of information of end customers, for the selection of the supplier of energy

The main aspects monitored have been:

- the introduction of a new, independent, equidistant and non-commercial instrument, that allows the comparison of model offers for the supply of energy and contributes to the increase of the degree of information of end customers, for the selection of the supplier of energy;
- possible increase of the competition level between the suppliers of energy, being given the publishing of all model offers in a common application, which performs a comparative analysis with regard to them;

- the possibility to perform a comparative analysis of all model offers that meet own requirements, both with regard to the selection of the supplier by new customers, as well as for the change of the supplier by current customers;
- guaranteeing the maintenance by the supplier of the model offer during its entire period of validity;
- the free, instant and permanent access to all of the model offers published by the suppliers of energy in the Comparator.

During 2018 it was designed a new structure of the price comparator published on the website of ANRE. The main modifications were:

- The comparator refers to model offers,
- The comparison is made with regard to the value of the monthly invoice, not with regard to the price, as it was made in the previous version,
- In the calculation of the invoice value it is included as well the value of the subscription,
- The application allows the introduction of multiple offers by a single supplier according to the different criteria,
- The application includes information related to the purchase structure, and the rate of energy from renewable resources,
- The application compares both the competitive offers with reference to the price for the universal service, as well as the competitive offers of different suppliers.

After the completion of the phase of design, it followed the phase of implementation, the application being accessible to the public at the end of the month of October. At the same time, during 2018, ANRE started the implementation of several mobile application aimed to transpose the Comparator in accessible applications for IOS and Android mobile devices.

In 2018, the Comparator was accessed by a number of 112,769 unique users who spent an average time of approx. 3 minutes and a half using it. Of these, approximately 95% of the users were from Romania, and the remaining 5% from abroad, namely 1.2% from Germany, 1% from the United Kingdom, the rest of the users being from France, Italy and U.S.A. (between 0.4 and 0.18%). The total number of model offers of supply of energy available for consultation within the Comparator was 210, these being introduced by approx. 160 suppliers.

For the accountability of the suppliers of energy to inform correctly, completely and accurately their own end customers, ANRE established a unitary reporting system with regard to the performance of the activity of information of end customers of the suppliers of energy, in order to allow a more thorough monitoring of the fulfilment of their obligations of information. **The activity of information of end consumers of energy, carried out in 2018 by license holders** for the activity of supply of energy, in accordance with the provisions of the *Regulation regarding the activity of information of end customers of energy and natural gas*, approved by **ANRE Order no. 96/2015** is published on the web page of ANRE at http://www.anre.ro/ro/energie-electrica/informatii-de-interes-public/furnizare-catre-consumatori/raport-informare-consumatori1434019306.

In 2018 the weight of economic agents, holders of the license for the activity of the supply of energy, who drew up and forwarded to ANRE reports on the activity of information of end customers was 72% (out of 100 economic agents monitored).

The weight of end customers informed by the suppliers of energy and by producers of energy with activity of supply to end customers in 2018 is 99%.

From the reports received, it is noticed that the activity of information of costumers during 2018 was performed as follows:

- The information of consumers by national and/or local written mass-media was completed by 60% of the supplier for which the number of end customers is superior to 1000 for any month of the calendar year;
- The information of the consumers by means of the informative materials was made in a rate of 58% by the monitored holders of licenses for the activity of supply of energy;
- The information of the consumers by means of the internet page was made by 96% of the monitored suppliers, the rest of 4% having the internet page under construction or incomplete.
- The most common fields about which the holders of licenses for the activity of supply of energy informed their end customers are: the procedure and phases for the change the supplier (12%), the prices and types of applied tariffs (12%), main legal acts ruling the field of energy (11%), the rights and obligations of consumers (10%), the main general conditions for the conclusion of contracts, including the duration of the contract, the conditions for the renewal and renunciation to services, the unilateral denunciation of the contract (10%), but also with regard to the measuring methods, invoicing, content of the invoice, and methods of payment (9%).
- The most common methods used by the customers for the purpose of information were: the publishing of the information on own internet page (32%), discussions by telephone (29%) and the distribution of informative materials at points of customer service/information departments (22%).
- The most common subjects of the phone calls of the consumers received at the telephone number dedicated to consumers are: information related to the measuring, invoicing, calculation of energy consumption (32%), requests for information on the method in which the supplier can be changed (22%) and the request for supply offers (19%).

Compared to 2017, in 2018 it is noted an increase of the frequency of questions of the consumers with regard to the calculation of the consumption of energy, as well as to the modification of the regulated tariffs.

Following the centralization and the analysis of the reports received from the part of the *suppliers of energy*, corresponding to 2018, transmitted according to the provisions of **ANRE Order no. 16/2015** *for the approval of the framework procedure on the obligation of the suppliers of energy and natural gas to settle the complaints of end customers*, they resulted the following conclusions:

- **70 holders of licenses for the supply of energy** sent to ANRE the reports on the settlement of the complaints of the end customers
- The number of complaints received from **household costumers** was **320,549** and from **non-household costumers** was **27,237.**

By ANRE Order no. 25/2018, it was reviewed **ANRE Order no. 145/2014** so that, in order to ensure the continuity of the **implementation of smart energy measuring systems**, to be given to distribution operators the possibility to make in 2018 investments in smart measuring systems, in compliance with some specific conditions regarding their approval and inclusion

in the regulated tariffs, namely: the value of these investments not to exceed 10% of the value of the annual investment plan approved in prior for this year, and the unitary cost of implementation not to exceed with more than 10% the unitary average cost resulted from the comparative analysis of the investment plans made in 2018 by concessionaire energy distribution operators

5.1.2. Natural gas

To measure the quality of the activity of supply of natural gas to end customers, by **ANRE Order no. 37/2007** *on the approval of the Standard of performance for the activity of supply of natural gas,* ANRE established the minimum level of performance for the performance of this activity.

In the table below, they are presented the conditions that must be met, and the compensations that the suppliers of natural gas have the obligation to pay automatically to the solicitors/end customers, according to the provisions of the performance standard previously mentioned:

Crt. no.	Guaranteed performance indicator	Penalties	
1.	**GPI1** – Contracting natural gas	Exceedance of the time limit of 15 days from the date of reception of the request	30 Ron
		Each additional day	5 Ron
2.	**GPI2** – Requests regarding invoices	Exceedance of the time limit of 15 days from the date of reception of the request	30 Ron
		Each additional day	5 Ron
3.	**GPI3** – Quality of natural gas	Exceedance of the time limit of 15 days from the date of reception of the request	50 Ron
		Each additional day	10 Ron
4.	**GPI4** – Requests regarding measuring	Exceedance of the time limit of 30 days from the date of reception of the request	30 Ron
		Each additional day	5 Ron
5.	**GPI5** Penalties owed for the non-compliance with the obligations of payment of the supplier	Exceedance of the time limit of 20 days from the date on which the obligations of the supplier became outstanding	150 Ron

ANRE monitored the achievement of the guaranteed performance indicators – GPI, based on the reports of the natural gas suppliers, in the period between 01.01.2018 – 31.12.2018, being recorded a total number of 526,693 requests from end customers, according to the table below:

Guaranteed performance indicator	Number of requests received		Number of requests settled within the terms imposed through the GPI		Number of solicitors/end customers to whom they have been paid penalties		Amount of penalties paid (Ron)	
	household	Non household	household	Non household	household	Non household	household	Non Household
GPI1-Contracting of natural gas	388,505	47,875	388,505	47,875	0	0	0	0
GPI2-Requests regarding invoices	69,137	14,542	69,131	14,541	6	1	1,210	340
GPI3-Quality of natural gas	139	37	139	37	0	0	0	0
GPI4-Requests regarding measuring	5,530	927	5,530	927	0	0	0	0
GPI5- Penalties owed for the non-compliance with the obligations of payment of the supplier	1	0	0	0	1	0	150	0
Total	**463,312**	**63,381**	**463,305**	**63,380**	**7**	**1**	**1,360**	**340**

From the verification of the information sent by the licensed suppliers, it was found that for the non-compliance with the guaranteed performance indicators in the period between 01.01.2018 – 31.12.2018, the suppliers of natural gas paid penalties to 6 household customers and 1 non-household customer, in a total value of Ron 1,700, as follows:

- for not complying with GPI 2 – *Requests regarding invoices*, they have been paid penalties to 7 household customers and one non-household customer, in a total value of Ron 1,550;
- for the complying with IPG 5 –*Penalties owed for not complying with the obligations of payment of the supplier*, they have been paid penalties to a household customer in value of Ron 150

The degree of achievement by the suppliers of natural gas of the guaranteed performance indicators – GPI in year 2018, broken down by household and non-household customers is presented in the table below:

Guaranteed performance indicator	**Degree of achievement of the guaranteed performance indicators %**	
	Household customers	**Non-household customers**

GPI1-Contracting natural gas	100.000	100.000
GPI2-Requests for invoices	99.991	99.993
GPI3-Quality of natural gas	100.000	100.000
GPI4-Requests regarding measuring	100.000	100.000
GPI5-Penalties owed for the non-compliance with the obligations of payment of the supplier	100.000	-
Total	99.998	99.998

In June 2017, ANRE developed an instrument by which end customers can co**mpare the natural gas supply offers** in Romania. The interactive web application called "Comparison of Natural Gas Supply Types" can be accessed on ANRE website using the link http://www.anre.ro/ro/info-consumatori/comparator-oferte-tip-de-furnizare-a-gn.

This interractive application is implemented as a consequence of the provisions of art. 5 of **ANRE Order no. 106/2014** on the method of information of end customers by suppliers of natural gas with regard to the commercial conditions of supply of gas, that created the premises necessary for ANRE to create and provide the interested persons with an independent and non-commercial instumenr meant to allow the comparison of the prices of supply and of the conditions offered by the suppliers of natural gas, before opting for a certain supplier or a certain model offer.

According to this legal act, all of the natural gas suppliers that develop and publish by their own means standard offers are required to upload information about these in the database of the application. In addition, suppliers have the obligation to upload in this database any new standard-offer and any change in the existing standard offer within 5 working days since the date of its release or change.

Using the Comparator is very simple, in just two steps: users choose the selection criteria and receive a list of standard offers. Of all the offers uploaded by suppliers, the Comparator displays those that meet the criteria selected by the user and displays them in an ascending order based on the price of the gas supply of each offer.

When viewing the results, users may also find other relevant details or conditions associated with the standard offer (payment term, invoice delivery method, duration of the contract and information on the required guarantees, as the case may be), and the period of validity of the standard offer. Additionally, the user has the possibility to enter data for comparison, respectively the supply price from the current contract and the annual consumption, case in which a comparison is made with its current costs.

In 2018 the Comparator has been accessed by a total of 39,636 users who have spent an average of approx. 4 minutes in it. Of these, about 95% of users were from Romania, and the remaining 5% from outside the country, of which 1.91% from Germany, 0.88% from Great Britain, 0.44% from France, 0.33% from Italy and 0.24% % from the US. The total number of natural gas supply offers available for consultation within the Comparator developed by ANRE was 181, which were introduced by 91 suppliers.

At the same time, during 2018, ANRE started the implementation of several mobile applications aimed at transposing the Comparator in accessible applications for IOS and Android mobile devices.

The notification activity for final natural gas consumers carried out during 2018 by the license holders, according to the *Regulation on the activity of notifying final customers of electricity and natural gas*, approved by the **ANRE Order no. 96/2015**, is published on the ANRE website at http://www.anre.ro/ro/gaze-naturale/informatii-de-interes-public/furnizori-gaze-naturale/raport-informare-consumatori

In 2018, the share of natural gas suppliers who produced and submitted to ANRE reports on the activity of informing the final customers was 80% (of 75 economic agents monitored). The share of final consumers notified by natural gas suppliers in the year 2018 was 99%.

From the reports received, it is noted that the consumer notification activity during 2018 was carried out as following:

- Notifying consumers through national and/or local written media was carried out to an extent of 69% by license holders for the monitored natural gas supply activity.
- 93% of consumers were notified through the information materials distributed by the natural gas license holders.
- Consumer information through the website was conducted by 92% of monitored suppliers, with the remaining 8% having a website under construction or incomplete.
- The most common methods chosen by providers were: information on the site (44%), telephone conversations (19%) and the distribution of informative materials to customer/information points (28%).
- The suppliers paid particular attention to the information in relation with the rights and obligations of end customers (12%), the prices and types of regulated tariffs (12%), the procedure and phases necessary for the change of the supplier (10%), the procedure, the phases and the documents necessary for the process of settlement of complaints of end customers (10%) and information of interest for end customers, including those related to energy efficiency provided for by art. 11 para. (5) letter d) points (ii) and (iii) and letter f of Law on energy efficiency no. 121/2014 (10%).

Compared to 2017, in 2018 there is an increase in the frequency of consumer questions on the procedure, steps and documents necessary for the process of changing the natural gas supplier and the offers for the supply of natural gas.

Following the centralization and analysis of the reports received from the *natural gas suppliers*, related to the year 2018, transmitted according to the provisions of the ANRE Order no. 16/2015 for the approval of the *Framework Procedure on the Obligation of Electricity and Gas Suppliers to Settle the Complaints of Final Customers*, the following conclusions were drawn:

- **43 final holders of license for the supply of natural gas sent to ANRE the reports on the settlement of the complaints of final customers**
- The number of complaints received from **household costumers** was **58732,** and from **non-household customers** was **1737.**

5.2. Dispute resolution

Complaints of end customers

Obligations of settling end customer complaints are included in the licensing conditions, in framework contracts as well as in supply standards. Supply license holders must ensure the registration, investigation and resolution of complaints made to their end-users. It is mandatory to have a compartment to take over any complaint made to the licensee by an end-customer who considers himself/herself to be harmed by the licensee's practices. A register of records of applications, complaints and complaints addressed by final customers, as well as of how to deal with them, shall be established and maintained.

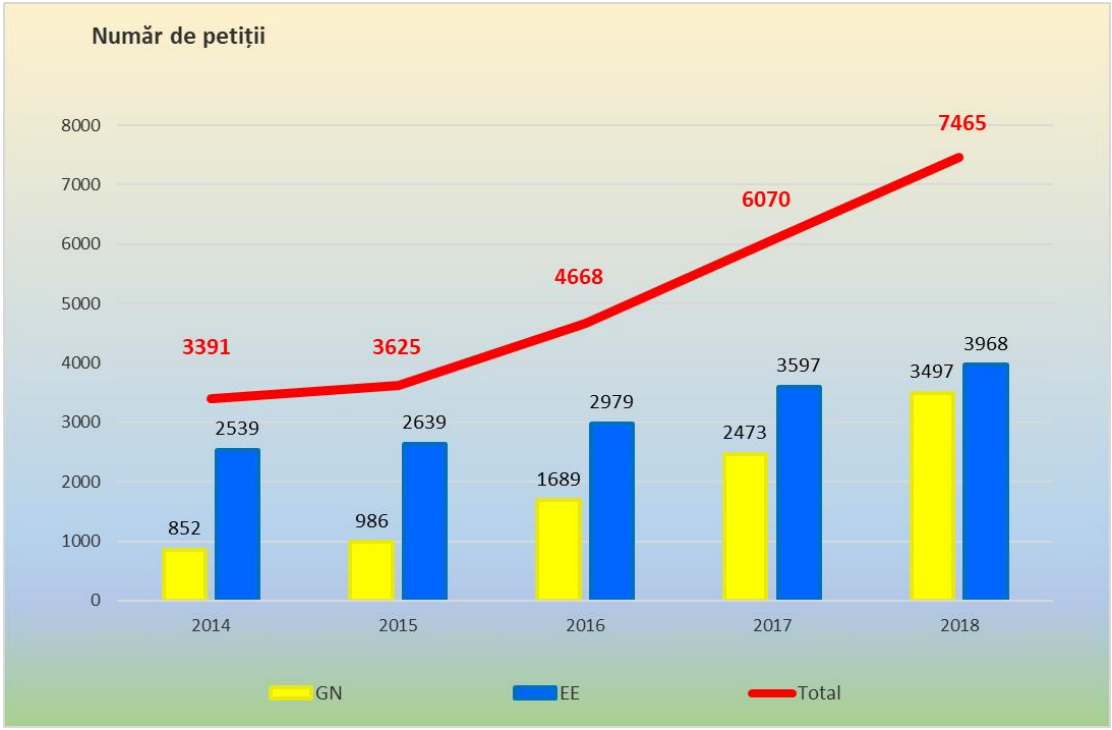
If the final customer is not satisfied with the answer received from the economic operator, he may address ANRE that based on the provisions of GO no. 27/2002, as subsequently amended and supplemented, analyses and formulates responses to the issues raised in the petitions. For petitions requiring additional checks, control actions are required.

Settling these claims differs, depending on the issues addressed: from written answers including clarifications, explanations and references to the legislation in force, on-site checks, and complex analyses, to direct discussions with the parties involved.

In the event that the issues raised in the petitions regarded the non-observance of certain legal provisions by the economic operators, ANRE sent to them warning letters setting out measures of compliance with the legal provisions in force and/or legal measures enforcing sanctions were applied.

In 2018, **7465** petitions, formulated by natural and legal persons receiving/requesting the services provided by the economic operators in the sectors of electricity, natural gas and thermal energy, were registered and solved. Of the total, **3968** petitions were registered in the electricity and thermal energy sector and **3497** petitions in the gas sector.

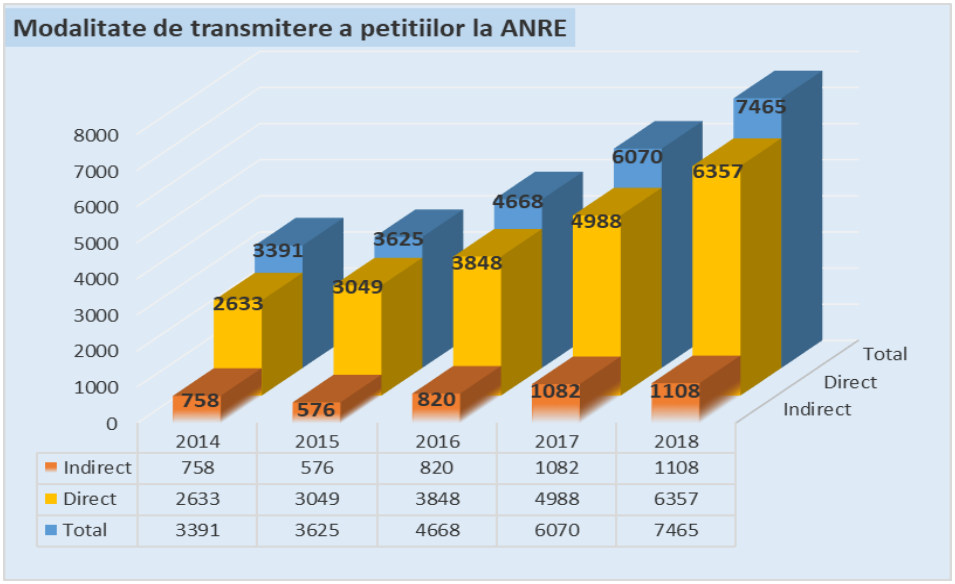
Compared to 2017, it was recorded an increase of the number of petitions by approx. 23%, generated especially by the problems occasioned by the conclusion and implementation of the contracts on the competitive market, the problems regarding the connection to the natural gas/energy systems/networks, as well as the manner in which they have been enforced new legislative provisions, for instance the mounting of the natural gas detectors.



The evolution of the number of petitions is presented in the following table:

Crt. No.	Sector/ Year	2014	2015	2016	2017	2018
1	Electricity	2,539	2,639	2,979	3,597	3,968
2	Natural gas	852	986	1,689	2,473	3,497
	Total	**3,391**	**3,625**	**4,668**	**6,070**	**7,465**

6357 petitions were forwarded for analysis and settlement to ANRE directly, and **1108** were indirectly redirected through other public institutions.



Petitions redirected from other public institutions to ANRE:

Crt. No.	Institution	Number of petitions
1	Romanian Presidential Administration	9
2	The Romanian Government	24
3	The Romanian Parliament	9
4	Ministries	55
5	Competition Council	9
6	National Consumer Protection Authority (Ro: ANPC)	941
7	National Regulatory Authority for Community Public Utility Services (Ro: ANRSC)	40
8	Prefectures, county councils, town halls	11
9	Ombudsman	2
10	Other	8
	Total	**1,108**

In order to identify the main issues presented by petitioners, a petition classification was developed to identify the legislative provisions that need to be modified, if necessary, and to improve the services provided to clients in order to increase satisfaction.

The main categories of problems identified in solved petitions in the electricity sector

Crt. No.	Main issues flagged	Number of petitions	[%]
1	Energy invoicing	983	24.77
2	Energy contracting	450	11.34
3	Continuity of the supply of energy	408	10.28
4	Access to the network	393	9.9
5	Energy quality	279	7.03
6	Thermal energy	231	5.82
7	Energy measurement	206	5.19

The main categories of problems identified in the petitions solved in the natural gas sector:

Crt. No.	Main issues flagged	Number of petitions	[%]
1	System connection	1,273	36%
2	Usage installations (checks, revision/detectors)	755	22%
3	Contracting, invoicing	631	18%
4	System access	195	6%
5	Change of the supplier	161	5%

Settlement of pre-contractual disagreements

In accordance with the provisions of ANRE Order no. 35/2013, it is ensured the settlement of the precontractual disagreements in the sector of energy and the mediation precontractual disagreements in the sector of natural gas. In 2018, 2 requests for mediation of disagreements at the conclusion of a gas contract have been registered, being rejected for not complying with the provisions of ANRE Order no. 35/2013.

Settlement of complaints against network operators

In 2018, one complaint was registered and solved against a network operator from the field of energy, being issued the reply of ANRE under the conditions and deadline established by the provisions of the ANRE Order no. 105/2015.

Control activity

The control activity of ANRE was carried out on the basis of the attributions established by the legislation in force and was carried out in accordance with the annual control program, approved by the president of ANRE, through the control actions of the inspection type and additionally by means of checks and surveillance, resulting from the current activities of the specialized departments within ANRE.

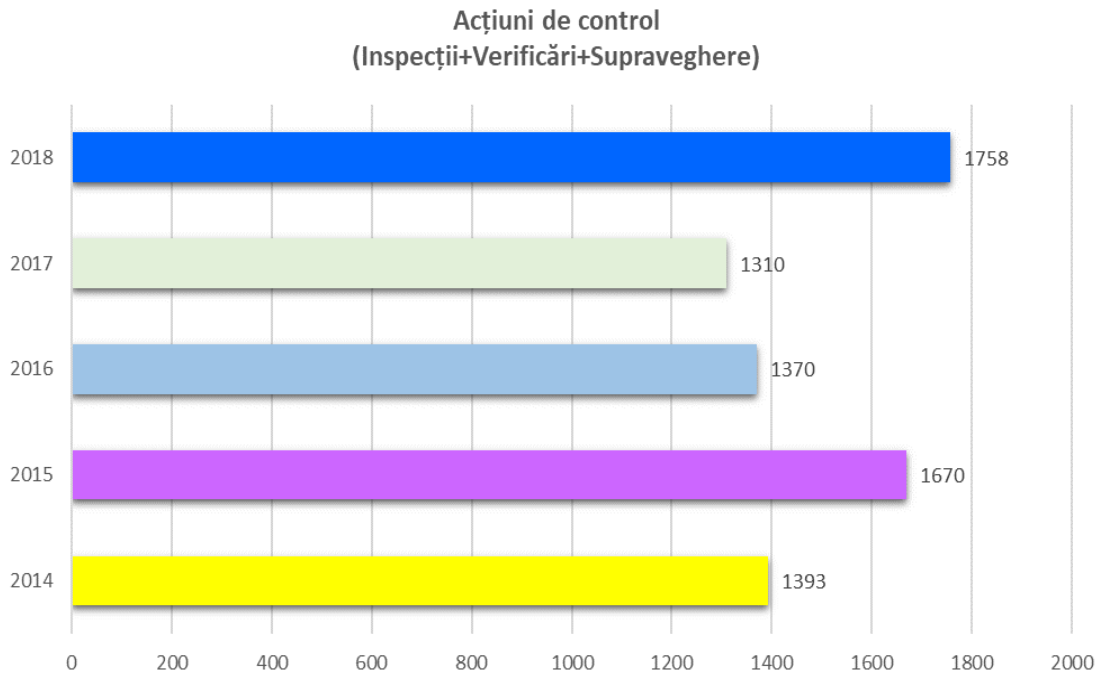
In 2018, they have been carried out 511 control actions of the inspection type.

Besides the control actions of the inspection type, provided for in the control program for 2018, additional checks were carried out 240 control-type checks and 1,007 supervisory controls. The control actions focused mainly on the license/authorization/attestation holders issued by ANRE.

The situation of the control actions by category of economic operators controlled is shown in the table below:

Type of controlling action	Licensed		Certified/Authorized		Energy efficiency		Others
	Electricity	Natural gas	Electricity	Natural gas	Labelling	Large consumers	
Inspection 511	41	40	196	134	25	75	
Check 240	90	113	4	20	-	-	13
Supervision 1,007	243	462	-	248	-	27	27
Subtotal	374	615	200	402	25	102	40
Total	**989**		**602**		**127**		**40**

The evolution of the total number of control actions carried out by ANRE in the last five years is shown in the chart below.



The subjects of the control actions carried out by license holders in the field of electricity and natural gas consisted mainly in verifying the observance of the legal provisions in force concerning:

- the verification carried out by the users of the gas transmission network with regard to the commercial balancing between the quantities of natural gas introduced in the NTS and those received from the NTS by the customers from the portfolio;
- the provision of energy to the competitive market by producers;
- the establishment of the minimum stock of gas by gas supplier and the transmission and system operator;
- the obligation to trade natural gas on centralized markets;
- the existence of bilateral conventions concluded by the gas TSO with the producers of natural gas;
- the obligation of the natural gas producers to comply with the technological parameters corresponding to the physical points of entry/exit in/from the NTS of natural gas;
- the mounting of natural gas detectors;
- the obligation to purchase green certificates;
- the obligation of the suppliers of energy to establish financial guarantees;
- performance indicators set by performance standards for electricity and natural gas distribution services, electricity and natural gas supply activities for the transmission of electricity and natural gas transmission systems;
- updating the technical characteristics of natural gas distribution systems;
- the obligation to execute works of maintenance on the electric transmission network;
- the obligation to observe and apply (implement) the plan of development (investments) of the electric transmission network;
- the activity of maintenance carried out by the producers of energy;
- resale of electricity;
- connection to public electricity networks;
- connection to the gas distribution system;

- access to the natural gas distribution and transmission system;
- certification of compliance of photovoltaic and/or wind power plants;
- design, verification, execution, reception and commissioning of natural gas installations;
- design, verification, execution, reception and commissioning of electrical installations;
- preparing and submitting activity reports and informing consumers;
- compliance with the conditions of validity of the attestations and authorizations held;
- energy efficiency of large energy consumers;
- energy efficiency and labelling for placing appliances on the market.

As a result of the control actions carried out, in 2018, **1,125 penalties reports** were drawn up, and for the irregularities found **1,448** sanctions were applied, as following:

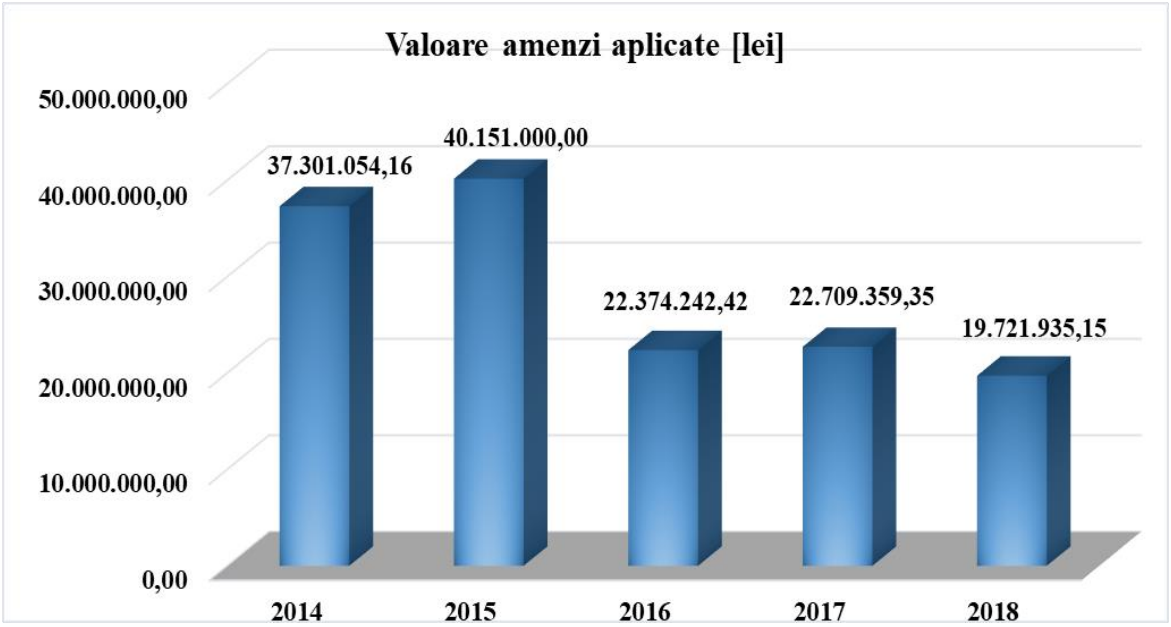
- **485** for electricity;
- **907** for natural gas;
- **56** for energy efficiency.

Fines of **Ron 19,721,935.15** were applied through the penalty reports**.**

Of the 1,125 reports, 24 were applied to individuals and 1,101 were applied to economic agents.

The distribution of the sanctions and the amount of the fines applied is outlined in the table below:

Distribution of sanctions per economic operators		
Type of economic operator	**Type of economic operator**	**Type of economic operator**
EE Licensed	400	4,146,870.50
GN Licensed	639	14,230,862.03
EE Certified	46	89,000.00
GN Authorized	260	977,000.00
CV Accredited	21	22,542.12
Energy efficiency	56	124,660.50
Other EE (sole traders, developers)	18	57,000.00
Other GN (sole traders, developers)	8	74,000.00
Total	**1,448**	**19,721,935.15**



The main actions committed by the people subject to actions of control, for which they have been applied sanctions in 2018, consisted of the non-compliance with the legal provisions related to:

- the obligation of the users of the natural gas transmission network to ensure the commercial balance between the quantities of natural gas introduced in the National Transmission System (NTS) and those received from the NTS by the customers from the portfolio;
- the existence of the bilateral conventions concluded by the gas TSO with the producers of natural gas;
- the legal obligation to ensure the exploitation of the stations of regulation-measuring-delivery, of reception of the natural gas from upstream supply pipelines, corresponding to the physical points of entry in the National Transmission System of natural gas;
- the obligation of the producers of natural gas to comply with the technological parameters corresponding to the physical points of entry/exit in/from the NTS of natural gas;
- the invoicing of the consumption of natural gas to end customers;
- the obligation to execute the works of maintenance on the electric transmission network;
- the obligation to observe and apply (implement) the plan of development (investments) of the electric transmission network;
- the activity of maintenance carried out by energy producers;
- the obligation to purchase natural gas for the end customers from the portfolio;
- the mounting of natural gas detectors;
- the obligation of energy suppliers to establish financial guarantees;
- the performance of commercial activities without holding a license, in accordance with the legislation in force;
- the obligation to purchase/pay the consideration of green certificates not bought by the licensed economic operators in the field of energy;
- the establishment of financial guarantees by the energy suppliers for the payment of the consideration of the service of energy distribution;

- the performance indicators established under the performance standards for the services of energy and natural gas distribution, for the activities of energy and natural gas supply, for the energy and natural gas transmission and system service;
- the access to gas distribution systems;
- the connection to electric networks of interest;
- the connection to the natural gas distribution system;
- the design, verification, execution, reception and commissioning of the installations intended for the use of natural gas;
- the supply of energy to household end customers, using the electric installations made for the connection of the on-site organization;
- the transmission of the reports of activity by the economic operators authorized in the field of natural gas;
- the failure to comply with the time limit for the submission of the technical documentation for obtaining the authorization for the execution of the works of connection to the natural gas distribution system;
- the design, verification, execution, reception and commissioning of electric installations;
- the drawing up and transmission of activity and informative reports to consumers;
- the energy efficiency of big consumers of energy.

Concomitantly with the civil sanctions they have been made proposals for the application of some additional measures, consisting of the suspension of the authorizations/certificates, for certain categories of activities, to an economic agent.

Settlement of disputes on the wholesale and retail market

For the settlement of the disputes occurred in the implementation of the contracts between the participants on the energy wholesale and retail market, respectively on the natural gas market, it was issued **ANRE Order no. 61/2013** for the approval of the *Regulation regarding the organization and functioning of the commission for the settlement of disputes on the wholesale and retail market intervened between the participants on energy and natural gas market***,** completed by **ANRE Order no. 175/2018** by which it is made the derogation from the provisions regarding the confidentiality of the file of a dispute exclusively in the situation in which, the commission, during the procedure of dispute settlement, identifies some deviations from the legal provisions applicable in the field of energy and natural gas.

During 2018, they have been subject to settlement a number of **9 disputes intervened between the participants on the energy market**, both on the wholesale and retail energy market. Following the analysis of the files and the fulfilment of the phases for the settlement of the disputes according to the provisions of the applicable regulation, **2 files have been rejected,** they have been issued **6 settlements orders** (the last of them was issued in the month of January 2019), and **a dispute was ended through the agreement of the parties** before starting the settlement procedure.

During 2018, they have been received **4 applications for dispute settlement in the sector of natural gas.**

The possibility to challenge the individual or legal administrative acts of the regulator constitutes an important factor in ensuring its responsibility towards the consumers. Thus, the orders and decisions issued by ANRE can be challenged in court by natural and legal persons

who consider that, through the enforcement of the respective regulations, some of their rights have been violated.

As regards the administration of the files in court in 2018, there have been 455 cases of which:

1. 210 files for contraventional complaints (100 files still ongoing, 103 files won definitively by ANRE, 7 files lost by ANRE);
2. 240 cases regarding the annulment of some administrative acts (120 still ongoing, 118 won definitively by ANRE, 2 lost definitively);
3. 1 criminal case/ won definitively by ANRE;
4. 4 cases (labour code/ transparency) / won definitively by ANRE.