



ROMANIAN ENERGY REGULATORY AUTHORITY

DEPARTMENT FOR MONITORING, REMIT


romania2019.eu



ELECTRICITY MARKET MONITORING REPORT

JANUARY 2019

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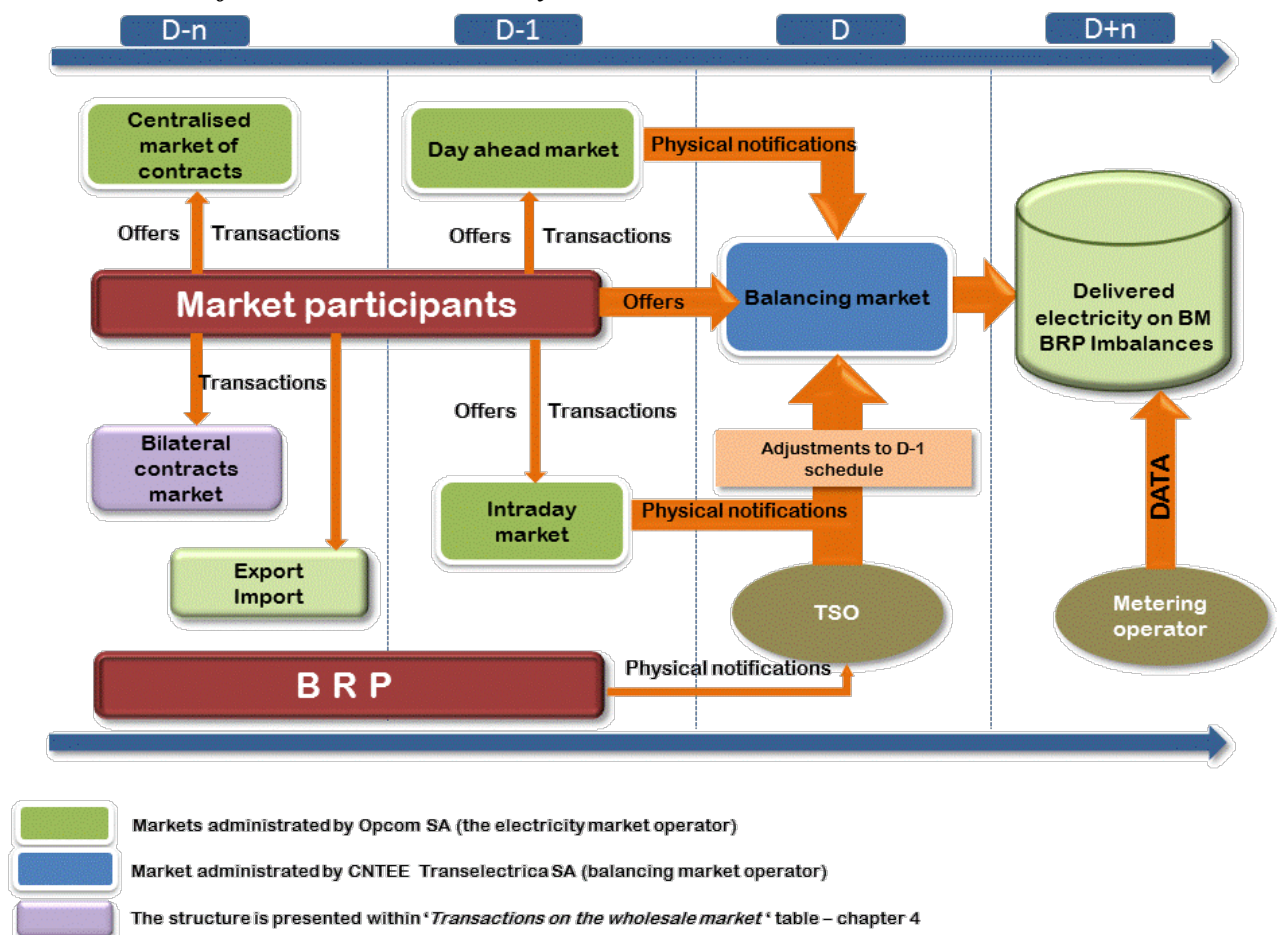
I. MAIN EVENTS IN THE DEVELOPMENT OF THE ROMANIAN ELECTRICITY MARKET

- **GD 365/1998** – vertically integrated monopol – RENEL – was split into separated distribution and supply companies (SC Electrica SA) and generation companies (SC Termoelectrica SA and SC Hidroelectrica SA) were established within a new company - CONEL SA. Two other electricity generators (SN Nuclearelectrica SA and RAAN) were separately established;
- Transmission, system services and market administration were separately organised, within CONEL SA;
- the relationships between parties within the electricity sector were settled based on contracts;
- **GD 122/2000** – electricity market opens at 10%;
- **GD 627/2000** – CONEL holding is dissolved;
- **September 2000** – launch of the compulsory electricity spot market in Romania. administrated by OPCOM and organized based on pool model;
- **GD 1342/2001** – SC Electrica SA splits in 8 subsidiaries for electricity distribution and supply;
- **GD 1524/2002** – SC Termoelectrica SA reorganizes in several separate legal entities for generation;
- **July 2005** – launch of the new market model. based on:
 - voluntary spot market. with both sides offers and bilateral settlement;
 - compulsory balancing market. with TSO as single counterparty;
 - financial responsibilities of the balancing are allocated to the BRP;
- **GD 644/2005** – electricity market opens at 83.5%;
- **November 2005** – launch of the green certificates market;
- **December 2005** – launch of the centralized market for bilateral contracts;
- **March 2007** – launch of the centralized market for partially standardized bilateral contracts with continuous negotiation;
- **GD 638/2007** – fully opening of electricity and gas markets;
- **July 2007** – rules for capacity market have been established;
- **July 2008** – launch of the mechanism of direct debit and guarantee for electricity transactions on the day-ahead market (OPCOM as central counterparty);
- **August 2008** – process of legal unbundling of distribution and supply companies has been concluded;
- **August/October 2010** – launch of bilateral coordinated auctions for capacity allocation on interconnections with Hungary and Bulgaria;
- **July 2011** - launch of the intraday market;
 - GD 930/2010 – SC Electrica Furnizare SA had been established through merger of the former last resort suppliers Electrica Furnizare Muntenia Nord. Electrica Furnizare Transilvania Nord and Electrica Furnizare Transilvania Sud;
- **June 2012** – a new entity obtains the generation license and enters on the electricity market - Complexul Energetic Oltenia SA. established in a dual system through merger of the former SNLO Tg. Jiu, Complexul Energetic Turceni, Complexul Energetic Rovinari and Complexul Energetic Craiova (GD 1024/2011);
- **July 2012** – the Law of electricity and natural gas no. 123/2012 has enter into force;
- **September 2012** – the application of the first stage from the timetable of phasing out of regulated electricity tariffs to final customers who choose not to exercise their eligibility rights. in accordance with the obligations assumed by the Romanian Government in relation with the IMF, World Bank and European Commission;
- **October 2012** – the Law no. 160/2012 regarding the organisation and operation of the Romanian Energy Regulatory Authority has entered into force;
- **November 2012** - a new entity obtains the generation license and enters on the electricity market - Complexul Energetic Hunedoara SA. established through merger of the former Electrocentrale Deva and Electrocentrale Paroseni (GD 1023/2011);
- **December 2012** – launch of the organised electricity market for the large customers;
- **July 2013** – launch of centralized market trading with continuous double negotiation of bilateral contracts for electricity;

- **August 2013** – removal of injection transmission tariff for the imported and respectively of the extraction transmission tariff for the exported quantities. and of the corresponding system services;
- December 2013** – removal of the export tariffs applied by the electricity market operator;
 - certification with conditions for CNTEE Tranelectrica SA as an independent transmission and system operator;
 - application of last stage of the phasing out calendar for removal the regulated tariffs applied to the final nonhousehold clients who do not use their eligibility rights;
- **August 2014** – CNTEE Tranelectrica SA certification as NES transmission system operator following the „independent system operator” model;
- **October 2014** – entry into force of the Law no. 127/2014 for amending the Law no. 123/2012;
- **November 2014** – the launch of the CZ-SK-HU-RO market coupling project. that encompasses the DAM markets from the Czech Republic, Slovakia, Hungary and Romania;
- **January 2015** – entry into force of the new centralized market for bilateral contracts with its components: Extended Auctions Mechanism (CMBC–EA), Continuous Negotiation Mechanism (CMBC–CN), Fuel Processing Mechanism (CMBC–FP);
- **February 2015** – implementing the centralized market for universal service;
- **November 2016** - entry into force of the Law no. 203/2016 amending the Law no. 123/2012 on electricity and natural gas.
- **July 2018** - entry into force of Law no. 167/2018 amending and supplementing Law on electricity and natural gas no. 123/2012.
- **December 2018** – EGO no. 114/2018 regarding the introduction of some measures in the field of public investments and some fiscal-budgetary measures, the modification and completion of some normative acts and the extension of some deadlines.

II. WHOLESALE ELECTRICITY MARKET

1. Structure of the wholesale electricity market



2. Wholesale electricity market participants

Market participants* active on the electricity market in January 2019 are presented below, split into categories:

No.	Category	No.	Category
A Electricity generators on classic sources operating dispatching units		D Electricity generators on solar source operating dispatching units	
1	Bepco SRL	1	Blue Sand Investment SRL
2	CET Arad SA	2	Caracal Solar Alpha SRL
3	CET Govora SA	3	Casa Crang SRL
4	CE Hunedoara SA	4	Clue Solar SRL
5	CE Oltenia SA	5	Corabia Solar SRL
6	Contour Global Solutions SRL	6	Cujmir Solar SRL
7	Ecogen Energy SA	7	Delta & Zeta Energy SRL
8	Electrocentrale Bucuresti SA	8	Ecosfer Energy SRL
9	Electrocentrale Constanta SA	9	Ergo Project SRL
10	Electrocentrale Galati SA	10	Eye Mall SRL
11	Electro Energy Sud SRL	11	Fort Green Energy SRL
12	Enet Focșani SA	12	Foton Epsilon SRL
13	Lukoil Energy & Gaz Romania SRL	13	Gama & Delta Energy SRL
14	Modern Calor SA	14	GPSB Solaris 48 SRL
15	OMV Petrom SA	15	Greenlight Solution SRL
16	Rulmenti SA	16	Green Vision Seven
17	SNGN Romgaz SA	17	Kentax Energy SRL
18	Termoficare Oradea SA	18	Lemar Grup SRL
19	Veolia Energie Iasi SRL	19	LIG Green Source Energy Alpha SA
20	Veolia Energie Prahova SRL	20	LIG Green Source Energy Beta SRL
21	Vest Energo SA	21	LIG Green Source Energy Gamma SRL
B Electricity generators on wind source operating dispatching units		22	Long Bridge Milenium SRL
1	Alizeu Eolian SA	23	Mar-Tin Solar Energy SRL
2	Arinna Development SRL	24	Potelu Solar SRL
3	Blue Line Energy SRL	25	Power L.I.V.E. One SRL
4	Blue Planet Investments SRL	26	RA-RA PARC SRL
5	Braila Winds SRL	27	Romkumulo SRL
6	Bridgeconstruct SRL	28	Simiko Prod Factory SRL
7	Catalan Electric SRL	29	Skybase Energy SRL
8	Cernavoda Power SRL	30	Solar Electric Frasinet SRL
9	Corni Eolian SRL	31	Solar Future Energy SRL
10	Crucea Wind Farm SRL	32	Solaria Green Energy SRL
11	Dan Holding MGM SRL	33	Solprim SRL
12	Eco Power Wind SRL	34	Spectrum Tech SRL
13	Ecoenergia SRL	35	Studina Solar SRL
14	EDPR Romania SRL	36	Sun Energy Complet SA
15	Electrica Serv SRL	37	Tis Energy SRL
16	Electricom SA	38	Tinmar Green Energy SRL
17	Elektra Green Power SRL	39	Urdel Energy SRL
18	Elektra Wind Power SRL	40	Vanju Mare Solar SRL
19	Enel Green Power Romania SRL	41	Varokub Energy Development SRL
20	Energia Verde Ventuno SRL	42	VIR Company International SRL
21	Enex SRL	43	VIS Solaris 2011 SRL
22	Eol Energy SRL	44	Vrsh Pro Investments SRL
23	Eol Energy Moldova SRL	45	WDP Development RO SRL
24	Eolian Center SRL	46	Xalandine Energy SRL
25	Eolica Dobrogea One SRL	47	XPV SRL
26	EP Wind Project (ROM) SIX SA	E Electricity generators on hydro source operating dispatching units	
27	Eviva Nalbant SRL	1	Hydroelectrica SA
28	Ewind SRL	F Electricity generator on nuclear source operating dispatching units	
29	General Concrete Cernavoda SRL	1	SN Nuclearelectrica SA
30	Green Energy Farm SRL	G Transmission System Operator	
31	Ground Investment Corp SRL	1	CNTEE TRANSELECTRICA SA
32	Holrom Renewable Energy SRL	H Market Operator for DAM, Intra-Day, Centralised Markets - CMBC-EA, CMBC-CN, CMBC-FP, CM-OTC, CMUS	
33	Horia Green SRL	1	OPCOM SA
34	Intertrans Karla SRL	I Distribution operators	
35	Kelavent Charlie SRL	1	Distributie Energie Oltenia
36	Kelavent Echo SRL	2	Delgaz Grid
37	Land Power SRL	3	E-Distributie Banat
38	LC Business SRL	4	E-Distributie Dobrogea
39	M&M 2008 SRL	5	E-Distributie Muntenia
40	Mireasa Energies SRL	6	SDEE Muntenia Nord
41	East Wind Farm SRL	7	SDEE Transilvania Nord
42	Ovidiu Development SRL	8	SDEE Transilvania Sud
43	Pestera Wind Farm SRL	J Suppliers of Last Resort	
44	Romconstruct Top SRL	1	CEZ Vanzare SA
45	Sibioara Wind Farm SRL	2	ENEL Energie SA
46	Smart Clean Power SRL	3	E.ON Energie Romania SA
47	Smartbreeze SRL	4	ENEL Energie Muntenia SA
48	Soft Grup SRL	5	Electrica Furnizare SA
49	Tomis Team SRL		
50	Verbund Wind Power Romania SRL		
51	Wind Park Invest SRL		
52	Windfarm MV I SRL		
53	VS Wind Farm SRL		
No.	Category		
C Electricity generators on biomass source operating dispatching units			
1	Bioenergy Suceava SRL		

No.	Category	No.	Category
K	Electricity Suppliers acting exclusively on the wholesale market		Electricity Suppliers acting also on the retail market
1	Alpiq Energy SE	14	Energia Gas & Power SRL
2	Alpiq RomIndustries SRL	15	Energy Trade Activ SRL
3	Axpo Energy Romania SRL	16	Ekata MHC SRL
4	CEZ as	17	Electric Planners SRL
5	Ciga Energy SA	18	Electricare CFR SRL
6	Cinta Energy SA	19	Elsid SA
7	Danske Commodities/s Aarhus	20	Electrocarbon SA
8	EDF Trading Limited	21	Electromagnetica SA
9	Energo-Pro Trading EAD	22	Enel Trade Romania SRL
10	Elpetra Energy E.A.D.	23	Energy Distribution Services SRL
11	Energi Danmark A/S	24	Engie Romania SA
12	Energy Supply D.O.O	25	Enol Grup SA
13	Eolian Project SRL	26	Entrex Services SRL
14	EVN Trading South East Europe	27	Eolian Generator SRL
15	Ezpada SRO	28	E.V.A. Energy SRL
16	Flavus Investiții SRL	29	GDM Logistic SRL
17	Freepoint Commodities Europe Ltd	30	Getica 95 Com SRL
18	GEN I trgovanje in prodaja elektricne energije doo	31	Grenerg SRL
19	Interenergo Energetski, Inženiring d.o.o.	32	Hermes Energy International SRL
20	Holding_Slovenske_Elektrarne	33	ICCO Energ SRL
21	Lord Energy SRL	34	ICPE Electrocond Technologies SA
22	MVM Partner Zrt	35	Imperial Development SRL
23	Neptun SA	36	Industrial Energy SA
24	Nis Petrol SRL	37	Izvor de Lumina SRL
25	OMV Gas Marketing & Trading GmbH	38	Luxten LC SA
26	Petrol, Slovenska energetska druzba	39	Menarom PEC SRL
27	Photovoltaic Green Project SRL	40	MET Romania Energy SA
28	Ritam-4- TB OOD	41	Monsson Trading SRL
29	Statkraft Markets GmbH	42	Next Energy Parteners SRL
30	Unit Energy Trade SRL	43	Nova Power&Gas SRL
31	Verbund Trading Romania SRL	44	P.C. Management & Consulting SRL
32	We Power Team	45	Plenerg SRL
L	Electricity Suppliers acting also on the retail market	46	Power Clouds SRL
1	Absolute Energy SRL	47	QMB Energ SRL
2	Aderro G.P. Energy SRL	48	RCS&RDS SA
3	A Energy Ind SRL	49	Renovatio Trading SRL
4	Alive Capital SRL	50	Restart Energy One SRL
5	Alro SA	51	Romelectro SA
6	Aqua Energia SA	52	Met RO NRG
7	Anchor Grup SA	53	Stock Energy SRL
8	Apuron Energy SRL	54	Tinmar Energy SA
9	Cotroceni Park SA	55	Transenergo Com SA
10	Crest Energy SRL	56	Transformer Energy Supply SRL
11	CYEB SRL	57	Uzinsider General Contractor SA
12	EFE Energy SRL	58	Veolia Energie România SA
13	EFT Furnizare SRL	59	Werk Energy SRL

*The electricity market participants report to ANRE technical/commercial data according to the *Methodology for wholesale electricity market monitoring*, approved by ANRE Order no. 67/2018, as well as according to the *Methodology for retail electricity market monitoring*, approved by ANRE Order no. 60/2008, with subsequent amendments and additions. The table above does not include the Balancing Responsible Parties (BRP). The updated BRP list is published on the Balancing Market Operator website, CNTEE TRANSELECTRICA SA - www.transelectrica.ro.

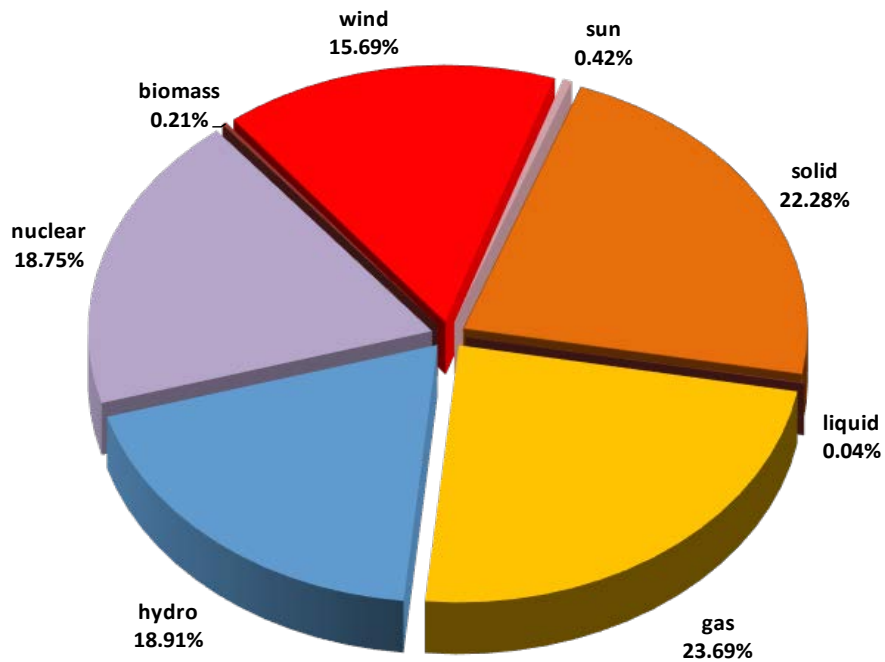
The monitored electricity generation license holders are producers holding dispatchable groups, which, according to the Regulation for programming production units and dispatchable consumers, approved by the ANRE President Order no. 32/2013 are classified under the following power categories:

- a. hydro generation group with an installed power higher than 10 MW;
- b. thermal generation group (including biomass and nuclear) with installed power higher than 20 MW;
- c. wind, photovoltaic or internal combustion engine with installed power higher than 5 MW.

The category of electricity suppliers acting exclusively on the wholesale market includes electricity supply licensees that are active only on the wholesale market and electricity trading licensees with licenses issued according to ANRE Order no. 13/2015 for the approval of the „General conditions associated to the license for trading electricity”.

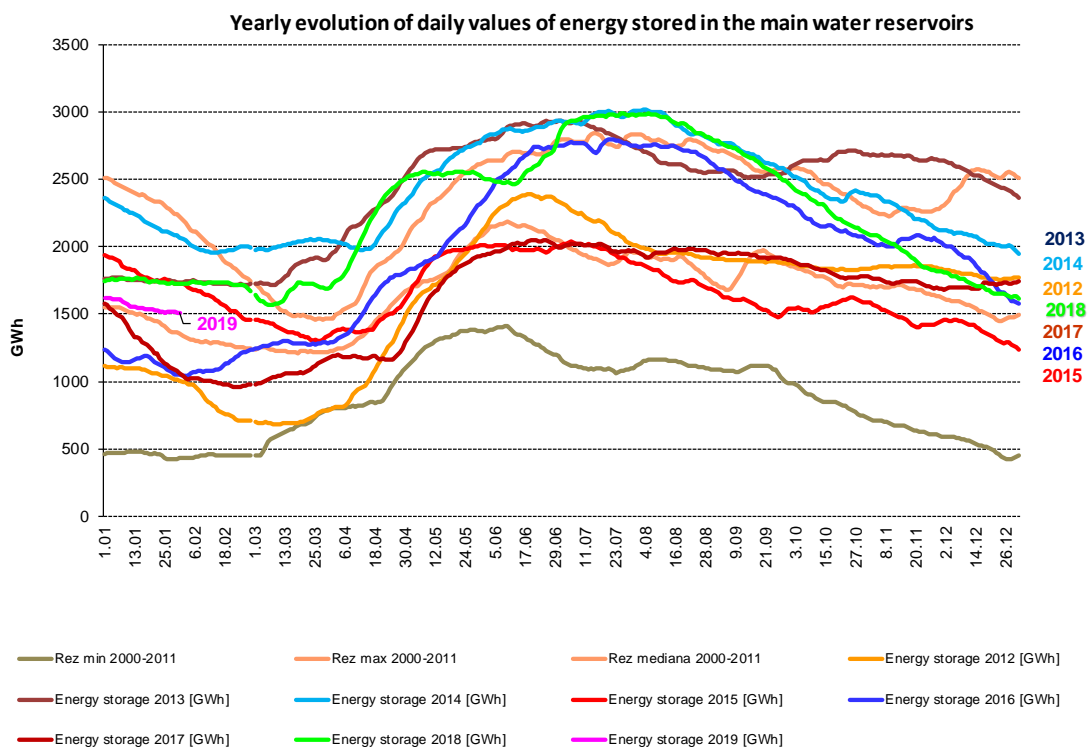
3. Generation structure of the National Power System on resources types

Electricity structure by primary sources
(delivered by generators with dispatchable units)
- January 2019 -



Source: Monthly reports of producers – Electricity Market Monitoring Unit assessment

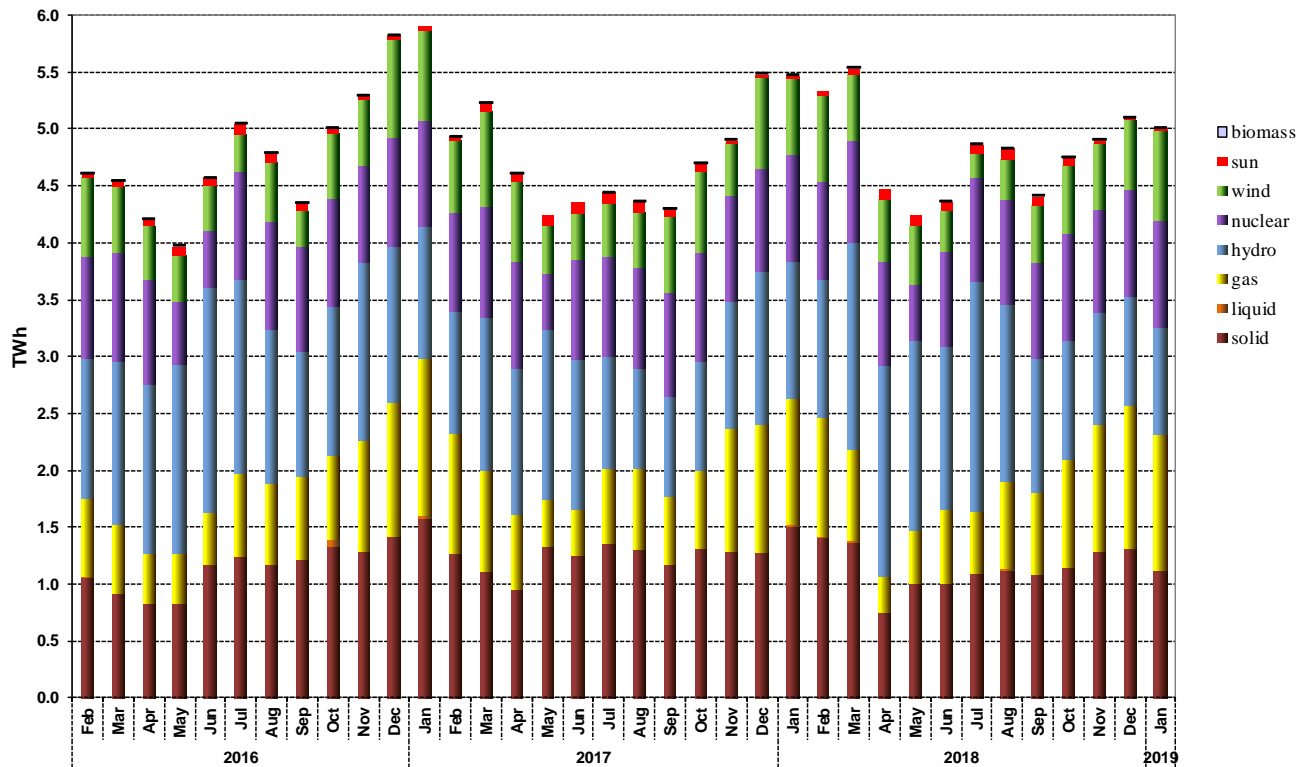
The electricity generated from hydro resources depends on the energy reserve in the main water reservoirs and at the same time it is influenced by it. The following graph presents the evolution of the daily amounts of energy stored in water reservoirs during January 2019 compared to the daily values of the last 7 years and compared to minimum, maximum and median values from 2000-2011.



Source: Monthly reports of S.C. Hidroelectrica S.A. – Electricity Market Monitoring Unit assessment

The evolution of the structure of the delivered electricity during the last 3 years is the following:

Evolution of electricity delivered by generators with dispatchable units by primary sources



Source: Monthly reports of generators – Electricity Market Monitoring Unit assessment

The following table presents the main data regarding the physical balance of electricity for January 2019, compared to the data for the similar period of 2018:

Nr. crt.	INDICATOR	UM	January 2018	January 2019	%
0	1	2	3	4	5=4/3*100
1	Generated electricity	TWh	5.86	5.38	91.81
2	Delivered electricity	TWh	5.48	5.04	91.97
3	Import	TWh	0.27	0.54	200.00
4	Export	TWh	0.62	0.24	38.71
5	Internal consumption (2+3-4)	TWh	5.13	5.34	104.09
6	Consumption of household customers:	TWh	1.19	1.25	105.04
6.1	- on Universal Service regime	TWh	0.98	0.86	87.76
6.2	- on the competitive market	TWh	0.21	0.40	190.48
7	Consumption of non-households customers:	TWh	3.09	3.19	103.24
7.1	- on universal service and last resort regime and inactive clients	TWh	0.10	0.09	90.00
7.2	- on the competitive market	TWh	2.99	3.10	103.68
8	Transmission–Injection component	TWh	5.37	4.92	91.62
9	Transmission–Extraction component	TWh	5.07	5.24	103.35
10	Actual transmission grid losses	TWh	0.10	0.10	100.00
11	Heat generated for delivery	Tcal	1914.33	1912.95	99.93
12	Heat in co-generation	Tcal	1447.68	1318.98	91.11

Notes:

1. The produced energy and the delivered energy are presented in accordance with the reports sent by electricity generation licensees monitored - producers operating dispatchable electric groups, as defined in the Programming Regulation of Production Units and Dispatchable Consumers, approved by ANRE Order no. 32/2013 as amended;
2. The data presented in the table do not include the energy supplied to the final customers connected to the power plant's installations (columns 6 and 7);
3. The imported / exported quantities do not include transits and cross-border exchanges of electricity by CNTEE Tranelectrica SA with neighboring power systems in order to balance the system;
4. The electricity for which a transport contract is concluded corresponds to the electricity delivered from the plants with installed capacity of more than 5 MW connected to the transmission and distribution networks; the electricity extracted from the network for which a transport contract is concluded coincides with the electricity for which the electricity extraction tariff is charged (according to ANRE Order no. 108/2018);
5. The consumption of households supplied under US (Universal Service) is the electricity consumption invoiced at US price.

4. The structure of trades on the wholesale electricity market

The size of wholesale market depends on the sum of all trades performed by the market players, exceeding the quantities physically transmitted from generation to consumption; the overall trades also includes resales made in order to adjust the contractual position and to obtain a financial benefit.

Starting with the moment of entering into force of Law no. 123/2012 on electricity and natural gas, the structure of wholesale energy market was significantly changed through the introduction of the obligation to conduct all trades on the competitive market in a transparent, public, centralized and non-discriminatory manner. Therefore, after the entry into force of the law, all new trades on the wholesale energy market have to be concluded on the centralized markets, organised by Opcom SA, the only ANRE licensee for the electricity market operation in Romania. The centralized markets which are presently functional are DAM (Day Ahead Market), CMBC (Centralized Market of Bilateral Contracts with Extended Auction mechanism - EA, with Continuous Negotiation mechanism-CN, with Fuel Processing mechanism - FP), ID (Intraday Market), CM-OTC – (Centralized Market with Double Continuous Negotiation for Electricity Bilateral Contracts), CM-LCM (Large Consumers Mechanism) and CMUS (Centralized Market for Universal Service).

Besides the existing centralized markets, which ensure the transparent, public, centralized and non-discriminatory legal requirements, there still are bilateral negotiated contracts concluded before the entering into force of the Law, still pending, and export and import contracts.

At the same time, as an exemption from the obligation of concluding all trades on the competitive electricity market, in a transparent, public, centralized and non-discriminatory manner, in accordance with Law no. 184/2018 for the approval of Emergency Government Ordinance (EGO) no. 24/2017 amending and supplementing Law no. 220/2008 establishing the system for promoting the production of electricity from renewable energy sources, non-dispatchable producers of electricity from renewable energy sources and public authorities holding power plants from renewable energy sources with installed capacity of no more than 3 MW per producer may still conclude direct negotiated bilateral contracts, but only with the suppliers of final consumers for the sale of electricity and/or green certificates.

The following table presents the volumes traded and the average prices on each type of contracts and on the main components of the wholesale market, in the month under review compared to the previous month and the similar month from the previous year. The aggregated volumes and the average prices on negotiated contracts are those reported by market participants on their own responsibility and with the exception of the contracts concluded under the provisions of Law no. 220/2008, with subsequent amendments and supplementations, they should match the still ongoing contracts which had been concluded before Law no. 123/2012 entered into force.

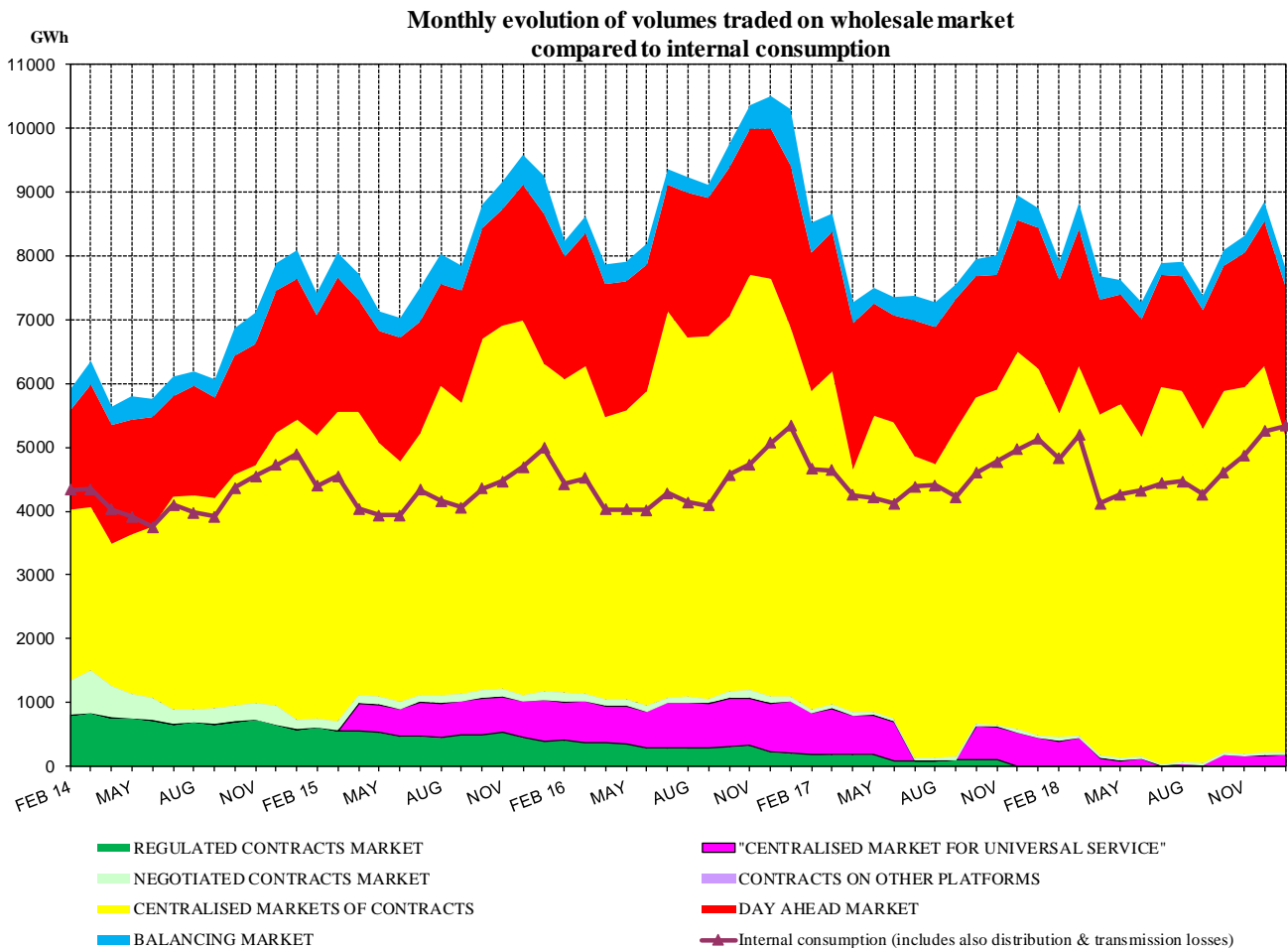
WHOLESALE MARKET TRADES	December 2018	January 2019	January 2018
1. BILATERAL CONTRACTS' MARKET			
traded volume (GWh)	38	34	46
average price (lei/MWh)	175.63	170.00	133.80
% from internal consumption (%)	0.7	0.6	0.9
1.1. Sales on regulated contracts			
traded volume (GWh)	-	-	-
average price (lei/MWh)	-	-	-
% from internal consumption (%)	-	-	-
1.2. Sales on negotiated contracts¹⁾			
traded volume (GWh)	38	34	46
average price (lei/MWh)	175.63	170.00	133.80
% from internal consumption (%)	0.7	0.6	0.9
2. EXPORT			
traded volume (GWh) ²⁾	331	235	616
average price (lei/MWh)	245.95	266.37	156.01
% from internal consumption (%)	6.3	4.4	12.0
3. CENTRALIZED MARKETS OF BILATERAL CONTRACTS			
traded volume (GWh)	6072	4968	5736
average price (lei/MWh)	217.27	246.06	204.76
% from internal consumption	115.5	93.0	111.7
3.1. Extended auction mechanism CMBC-EA³⁾			
traded volume (GWh)	2032	1688	2169
average price (lei/MWh)	206.70	233.01	182.21
% from internal consumption	38.7	31.6	42.2
3.2. Continuous negotiation mechanism CMBC-CN³⁾			
traded volume (GWh)	1351	1440	1747
average price (lei/MWh)	212.77	239.66	221.88
% from internal consumption	25.7	27.0	34.0
3.3. CM-OTC mechanism³⁾			
traded volume (GWh)	2689	1839	1820
average price (lei/MWh)	277.51	263.05	215.22
% from internal consumption	51.2	34.4	35.4
4. CENTRALIZED MARKET FOR UNIVERSAL SERVICE - CMUS			
traded volume (GWh)	171	179	444
average price (lei/MWh)	256.52	292.54	249.67
% from internal consumption	3.3	3.3	8.7
5. DAY AHEAD MARKET			
traded volume (GWh)	2265	2354	2217
average price (lei/MWh) ⁴⁾	298.47	352.19	155.70
% from internal consumption	43.1	44.1	43.2
6. INTRADAY MARKET			
traded volume (GWh)	8.99	31	12.6
average price (lei/MWh) ⁵⁾	175.85	199.28	107.31
% from internal consumption	0.2	0.6	0.2
7. BALANCING MARKET			
traded volume (GWh)	311	302	298
% from internal consumption	5.9	5.7	5.8
upward volume (GWh)	229	142	141
average price for negative imbalance (lei/MWh)	700.79	687.32	277.85
downward volume (GWh)	82	160	157
average price for positive imbalance (lei/MWh)	25.60	37.20	22.13
INTERNAL CONSUMPTION (GWh) <i>(distribution and transmission losses included)</i>	5256	5340	5135

Notes:

- 1) Sales on negotiated contracts do not include supply contracts to final customers and export contracts, the latter being separately identified;
- 2) Export volumes and prices' information corresponding to export contracts are those reported monthly by wholesale market participants and include the volumes exported by CNTEE Transelectrica as shipper for the coupled DAM; export volumes are verified with the DAMAS platform notifications, some differences being noticed in some cases;
- 3) The monthly data is presented as reported by the market participants monitored for the electricity delivered in the respective month. The information refers both to trades concluded previously on CMBC and CMBC-NC (according to ANRE Order 6/2011) and to trades concluded on CMBC-EA and CMBC-NC (according to ANRE Order 78/2014);
- 4) The average monthly price presented in the table is calculated as the average of the hourly closing prices and is published by Opcom SA; the average monthly price calculated as an weighted average of the hourly closing prices with the traded volumes was 368.74 lei/MWh in January 2019, and it was published by Opcom SA;
- 5) The average monthly price is calculated based on monthly traded volumes and values, published by OPCOM SA.

The percentage of electricity volumes traded form the internal consumption (see table above) offers a reference for assessing the size of each of the specified markets. Prices presented above include only the injection component of the transmission tariff, in this way being comparable within a month and making possible the comparison with the previous month.

The following graph presents the evolution, starting with February 2014, of the relation between the volumes sold on each market and the estimated internal consumption.

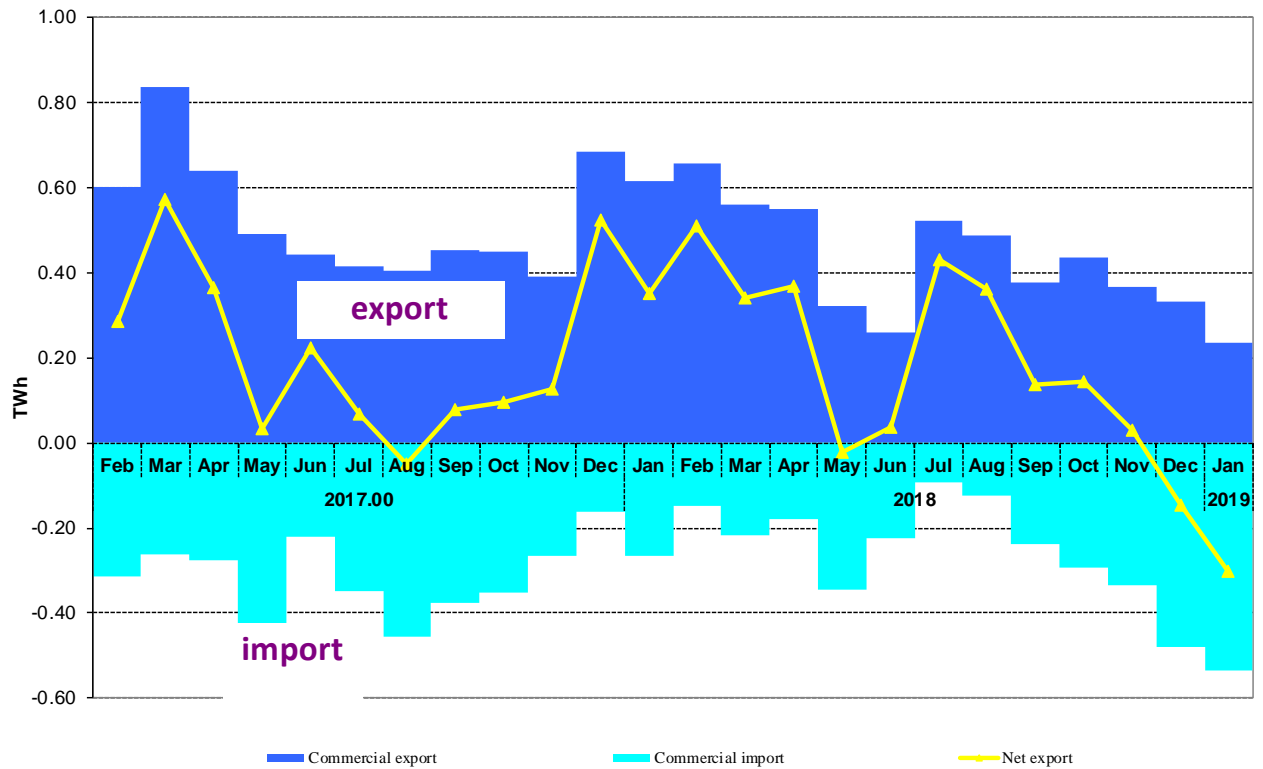


Source: Monthly reports of wholesale market participants, Opcom SA and CNTEE Transelectrica SA – Electricity Market Monitoring Unit assessment

Note: In the above graph, the volumes traded on negotiated contracts' market do not include the export contract volumes.

The following graph presents the monthly values of commercial export and import, and the net export (export minus import) during the last 24 months:

Monthly evolution of export, import and net export of electricity
for the last 2 years

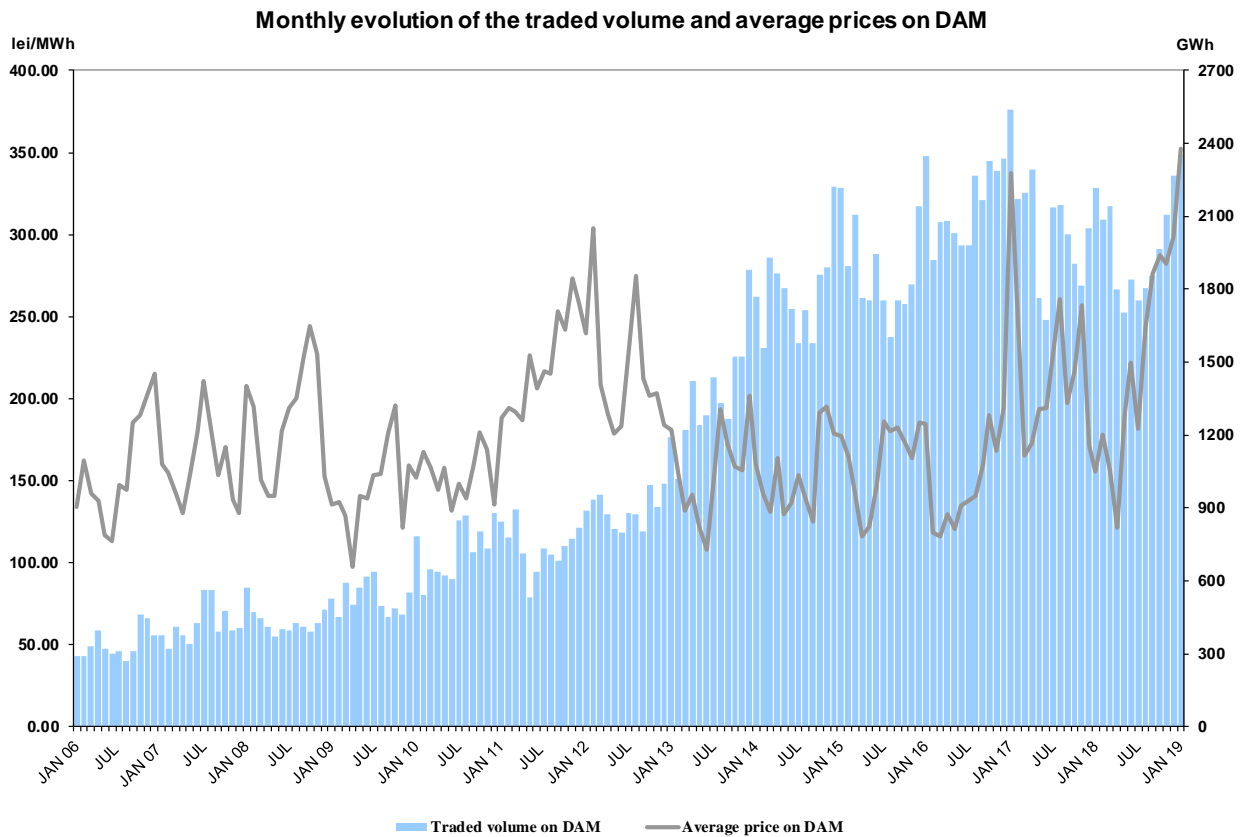


Source: Monthly reports of CNTEE Transelectrica SA – Electricity Market Monitoring Unit assessment

The following table presents commercial export and import trades for the electricity extracted/injected from/in the transmission network. These include the trades of CNTEE Transelectrica SA as the shipper agent in the price coupling mechanism of DAM. Shipper agent role is reflected in the physical and commercial transfer of electricity for import/export on the interconnections between Romania and Hungary.

Import/Export Trades	December 2018	January 2019	January 2018
Export			
traded volume (GWh)	331	235	616
average price (lei/MWh)	245.99	266.37	156.01
% from internal consumption	6.3	4.4	12.0
of which, through coupled DAM			
traded volume (GWh)	61	49	81
average price (lei/MWh)	214.84	232.31	107.39
% from internal consumption	1.2	0.9	1.6
Import			
traded volume (GWh)	478	535	267
average price (lei/MWh)	322.47	388.70	177.58
% from internal consumption	9.1	10.0	5.2
of which, through coupled DAM			
traded volume (GWh)	177	258	161
average price (lei/MWh)	354.63	407.48	176.56
% from internal consumption	3.4	4.8	3.1

The following graph presents the monthly volume and average prices on DAM starting with January 2006:



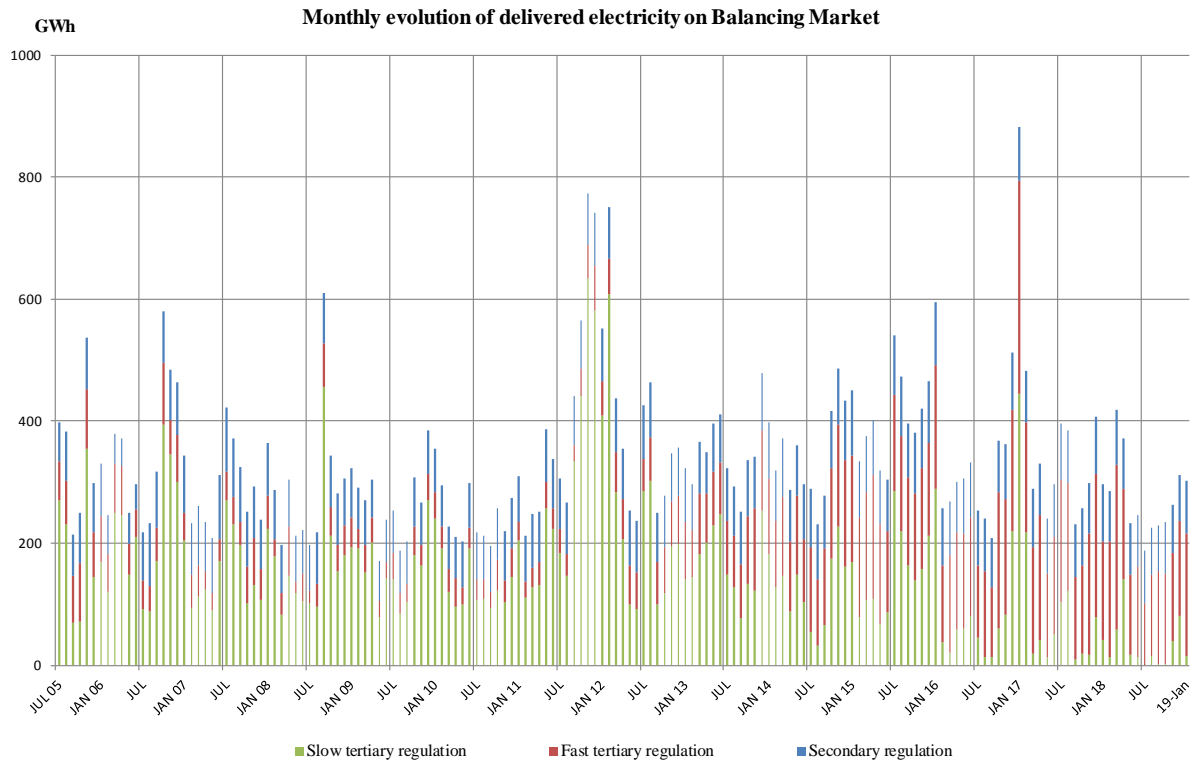
Source: Monthly reports of Opcom SA and CNTEE Tranelectrica SA – Electricity Market Monitoring Unit assessment

Balancing electricity is determined by the dispatch orders (accepted offers) received by generators. After settlement, the actual electricity delivered by generators on the balancing market is determined based on the measured (approved) values; the relation between the selected and delivered electricity in January 2019 is presented in the following table:

January 2019	Dispatch order (GWh)	Delivered electricity (GWh)	Deviation (%)
Secondary regulation	87	87	
<i>upward</i>	42	42	
<i>downward</i>	45	45	
Fast tertiary regulation	208	200	4
<i>upward</i>	87	84	3
<i>downward</i>	120	115	4
Slow tertiary regulation	16	16	2
<i>upward</i>	16	16	2
<i>downward</i>	0	0	0
TOTAL	311	302	
<i>upward</i>	145	142	
<i>downward</i>	165	160	
INTERNAL CONSUMPTION		5340	
<i>% share of traded volumes from internal consumption</i>		5.7%	

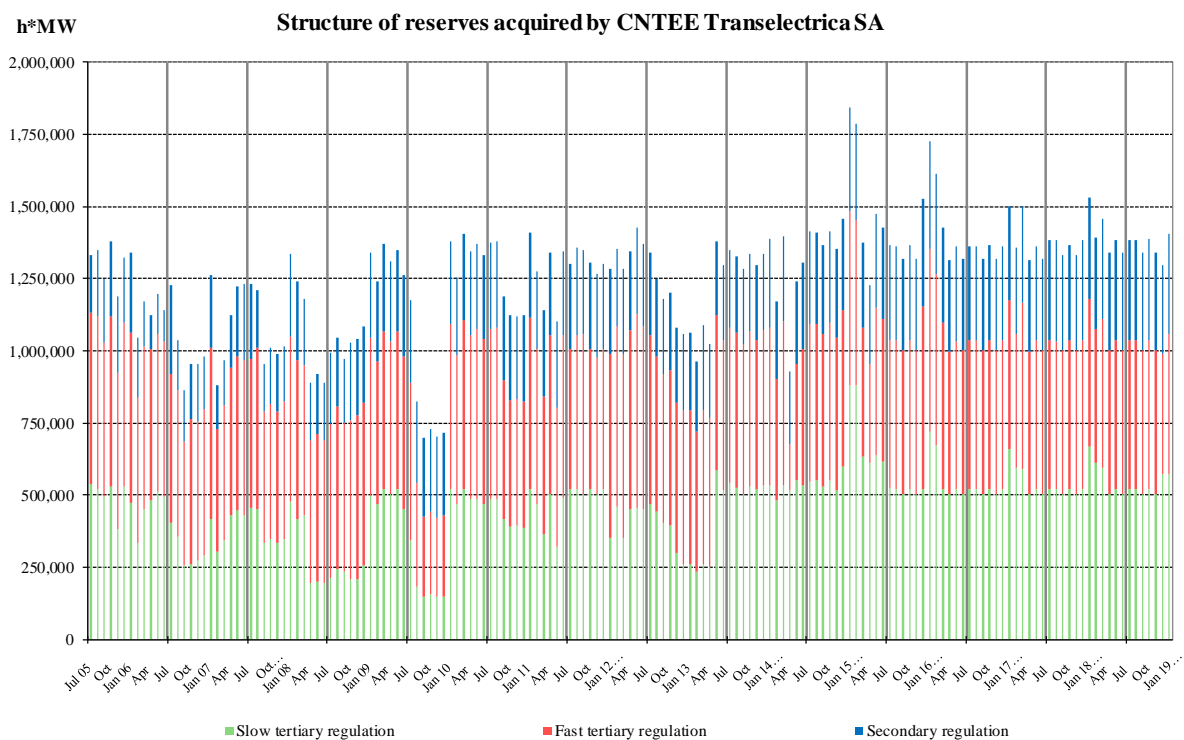
Source: Monthly reports of CNTEE Tranelectrica SA – Electricity Market Monitoring Unit assessment

The structure of the balancing electricity delivered in the system on each type of regulation starting with July 2005 is presented in the graph below:



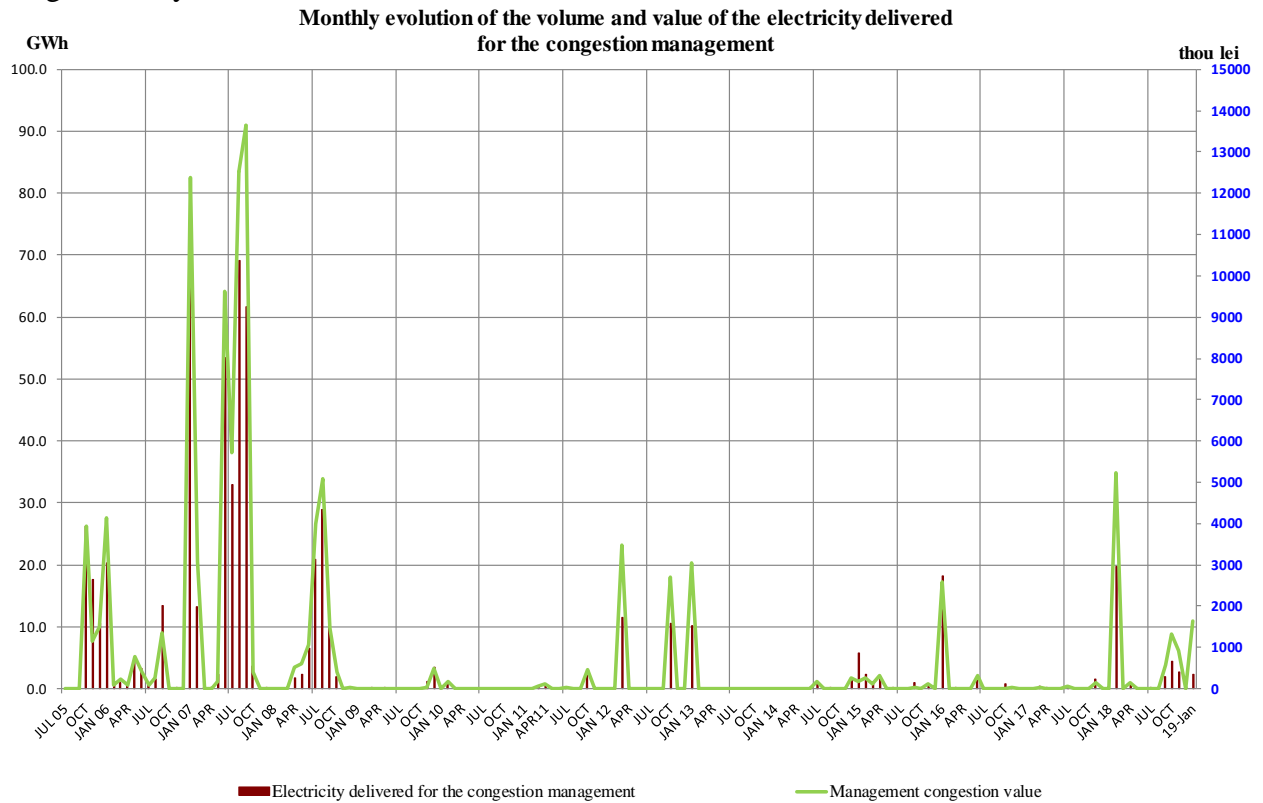
Source: Monthly reports of CNTEE Tranelectrica SA – Electricity Market Monitoring Unit assessment

The following chart shows the evolution of the reserves (ancillary services representing obligations of the producers to keep available to the dispatcher or to offer on the balancing market the contracted capacities) bought/settled by CNTEE Tranelectrica S.A. for the period July 2005 - January 2019:



Source: Monthly reports of CNTEE Tranelectrica SA – Electricity Market Monitoring Unit assessment

The following graph presents the monthly evolution of the electricity traded by CNTEE Transelectrica SA on the Balancing Market for congestion management and the evolution of the values of these trades starting with July 2005.



Source: Monthly reports of CNTEE Transelectrica SA – Electricity Market Monitoring Unit assessment

5. Structure of trades on the wholesale electricity market of different market participant categories

Producers

In January 2019, compared with the similar period of 2018, the structure of electricity sale obligations contracted before the delivery interval by the electricity generators with dispatchable units was the following:

Trade type	January 2018	January 2019
Negotiated contracts, to suppliers	46.27	33.72
Contracts concluded on the Opcom centralized markets:	3541.74	3119.77
<i>CMBC-EA</i>	1952.92	1603.77
<i>CMBC-CN</i>	945.65	904.68
<i>CM-OTC</i>	643.17	611.33
CMUS	425.63	137.57
DAM	1599.19*	1673.22
ID	6.26	25.38
Supply contracts to final customers, from which:	466.76*	422.88
<i>Households</i>	0.36	0.40
<i>Non-households</i>	466.40*	422.48
Total	6085.31	5412.53

Source: Monthly reports of generators – Electricity Market Monitoring Unit assessment

* The differences from the January 2018 Electricity Market Monitoring Report are determined by the corrections reported by the market participants that were included in the current report.

Suppliers

In January 2019, on the electricity market there were active 96 undertakings having as the main activity that of electricity supply; out of these, 32 are suppliers that only operate on the wholesale electricity market (some of which have electricity trader license) and 64 are suppliers that are also active in the retail electricity market (including the last resort suppliers).

Suppliers acting exclusively on WEM

The following table shows the data for January 2019 compared with similar period of 2018 for the suppliers acting exclusively on WEM, acquisitions and sales being split by categories of markets and market participants:

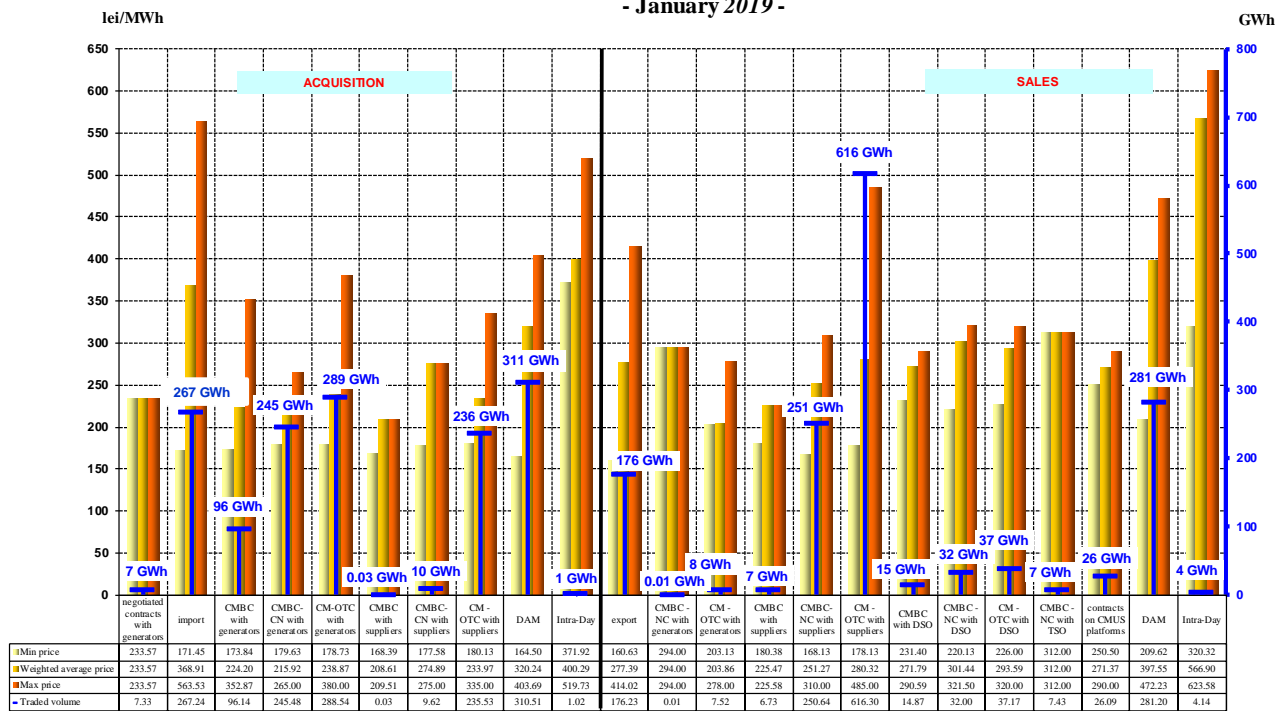
Structure of trades of suppliers acting exclusively on WEM	-GWh-	
	January 2018	January 2019
Buy		
Import	101.13	267.24
Negotiated trades with producers	0.00	7.33
Contracts concluded on Opcom centralized markets, out of which:	838.08	875.33
- on CMBC-EA with producers	94.25	96.14
- on CMBC-CN with producers	163.55	245.48
- on CM-OTC with producers	298.01	288.54
- on CMBC-EA with other suppliers	0.10	0.03
- on CMBC-CN with other suppliers	22.36	9.62
- on CM-OTC with other suppliers	259.82	235.53
DAM	826.35*	310.51
ID	0.97	1.02
Sell		
Export	500.88*	176.23
Contracts concluded on Opcom centralized markets:	1175.49	1141.45
- on CMBC-CN with producers	0.00	0.01
- on CM-OTC with producers	0.00	7.52
- on CMBC-EA with other suppliers	24.15	6.73
- on CMBC-CN with other suppliers	389.95	250.64
- on CM-OTC with other suppliers	642.34	616.30
- on CMBC-EA with DO	11.16	14.87
- on CMBC-CN with DO	107.90	32.00
- on CM-OTC with DO	0.00	37.17
- on CMBC-EA with TSO	0.00	7.43
CMUS with last resort suppliers	18.60	26.09
DAM	64.26*	281.20
ID	2.44	4.14

Source: Monthly reports of suppliers – Electricity Market Monitoring Unit assessment

Note: * The differences from the January 2018 Electricity Market Monitoring Report are determined by the corrections reported by the market participants that were included in the current report.

In addition to the data from the table above, the following graph presents the lowest, average and highest prices by categories of trades concluded by the suppliers acting exclusively on WEM (traders), in January 2019.

Trades concluded by suppliers acting exclusively on WEM
- January 2019 -



Source: Monthly reports of the suppliers – Electricity Market Monitoring Unit assessment

Suppliers active on REM (suppliers of last resort not included)

The following table presents aggregated data regarding the structure of acquisitions and sales on categories of markets/retail market participants, for January 2019 compared with the similar period of 2018:

Structure of trades of suppliers acting on REM (suppliers of last resort not included)	-GWh -	
	January 2018	January 2019
Buy		
Import	4.12	9.61
Negotiated contracts with producers	48.24	27.18
Contracts concluded on Opcom centralized markets:	2309.01	1763.99
- on CMBC-EA with producers	1119.82	707.76
- on CMBC-CN with producers	337.28	415.08
- on CM-OTC with producers	164.47	139.76
- on CMBC-EA with other suppliers	67.43	24.53
- on CMBC-CN with other suppliers	169.29	148.32
- on CM-OTC with other suppliers	450.70	328.55
Negotiated contracts with non-dispatchable producers (others than under Law 220/2008)*	7.59	3.81
Negotiated contracts with non-dispatchable producers (amendments and additions to Law 220/2008)**	15.85	10.84
DAM	219.25*	548.90
ID	6.74	24.92

Notes:

*negotiated trades concluded with non-dispatchable producers that do not comply with the requirements of Law no. 184/2018 (under 3 MWh threshold) for the approval of EGO no. 24/2017 regarding the amendment and supplementation of Law no. 220/2008

** negotiated trades concluded with non-dispatchable producers that comply with the requirements of Law no.184/2018 for the approval of EGO no. 24/2017 regarding the amendment and supplementation of the Law no. 220/2008

Suppliers of last resort

The structure of trades on the WEM of suppliers of last resort (made before the delivery interval) to supply final consumers that fall under the Universal Service regime (optional/obligated suppliers of last resort) and last resort regime (obligated suppliers of last resort) is shown in the table below for January 2019 compared with the similar period of 2018:

- GWh -

Structure of trades concluded by suppliers of last resort to supply final clients (Universal Service, last resort regime and inactive)	January 2018	January 2019
Negotiated contracts with non-dispatchable producers (changes and additions to Law 220/2008)*	0.01	0.004
Contracts concluded on Opcom centralized markets:	548.94*	511.14
- contracts on CMBC-EA with producers	41.62*	183.92
- contracts on CMBC-CN with producers	65.94	30.93
- contracts on CM-OTC with producers	9.80	37.44
- contracts on CMBC-EA with other suppliers	26.95	7.56
- contracts on CMBC-CN with other suppliers	228.16	71.98
- contracts on CM-OTC with other suppliers	176.47	179.32
Centralized market for universal service:	444.23	178.51
- contracts on CMUS with producers	425.63	137.57
- contracts on CMUS with suppliers	18.60	40.95
Transactions concluded on DAM:	142.17	223.40
- buy	166.18	251.42
- sell	24.02	28.02
Transactions concluded on ID:	0.00	1.75
- buy	0.00	1.75
- sell	0.00	0.00

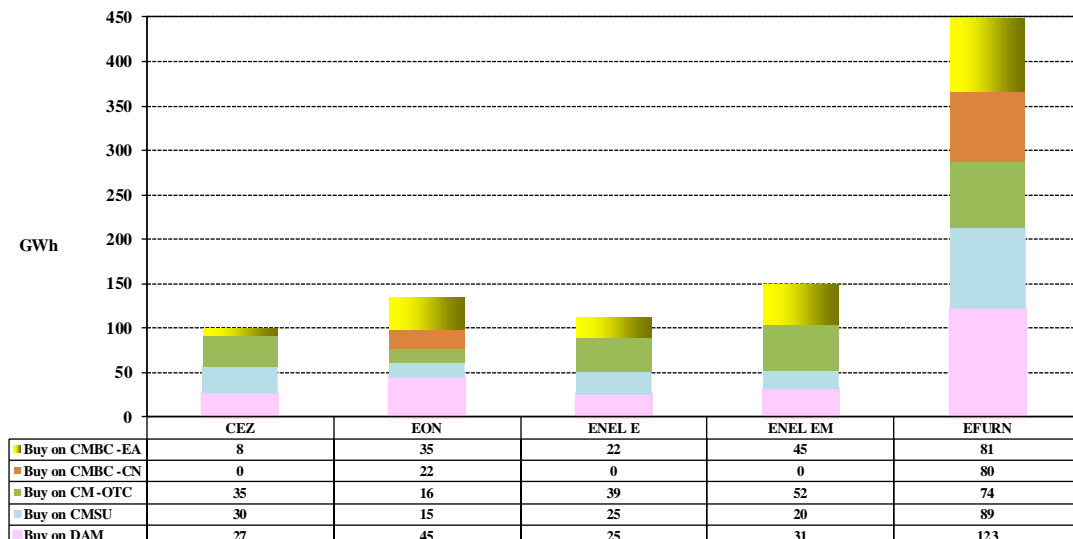
Notes

* negotiated trades with non-dispatchable producers that fall under the provisions of Law no.184/2018 for the approval of EGO no. 24/2017 regarding the amendment and supplementation of Law no. 220/2008

** The differences from the January 2018 Electricity Market Monitoring Report are determined by the corrections reported by the market participants that were included in the current report.

The structure of the electricity bought by the suppliers of last resort for the final consumers supplied under Universal Service and last resort regime for January 2019 is presented in the following graph:

Structure of trades made by suppliers of last resort to supply final clients (Universal Service, last resort regime and inactive clients)
- JANUARY 2019-



Source: Monthly reports of the suppliers of last resort – Electricity Market Monitoring Unit assessment

Starting with 1 July 2018, according to the provisions of *The Regulation for the competitive selection of suppliers of last resort*, approved by the ANRE Order no. 26/2018, ANRE has designated as obligated suppliers of last resort for each network area until 30 June 2022, E.ON Energie Romania SA, Enel Energie SA, Enel Energie Muntenia SA, Electrica Furnizare SA and CEZ Vânzare SA, and, as optional supplier of last resort until 30 June 2019 – Enel Energie Muntenia SA (for the regions of Moldova, Oltenia, North Muntenia, Northern Transylvania and South Transylvania).

At the same time, starting with 1 July 2018, in accordance with the *Methodology for setting the calculation method and the conditions for approving prices applied by the obligated suppliers of last resort and the optional suppliers of last resort to the final customers* (approved by ANRE Order no. 39/2018), obligated and optional suppliers of last resort apply in the final customer invoices the final prices approved by ANRE for each network area and application period, as follows:

- obligated suppliers of last resort apply the price for Universal Service (to households and non-households that benefit of Universal Service) and, based on its multiplication with an increase coefficient, the price for inactive clients (non-households that did not use their eligibility rights and do not fulfill the conditions for Universal Service or did not request to be supplied under the Universal Service regime);
- optional suppliers of last resort apply the Universal Service price (to households and non-households that benefit of Universal Service), determined by applying a discount on the Universal Service price applied by the obligated supplier.

At the same time, the obligated suppliers of last resort determine and apply the last resort price to the non-household final customers supplied under the last resort regime, under the conditions stipulated by the *Methodology* approved by Order no. 39/2018.

On the date of entry into force of ANRE President Order no. 27/2018 for the approval of the *Regulation for organizing and conducting the auctions on the centralized market for the universal service*, the conditions of participation of suppliers of last resort to CMUS for the purchase of electricity to cover the consumption of final customers supplied under US regime were changed, the participation in the auction sessions becoming, thus, voluntary.

The structure of electricity trades of suppliers of last resort on the REM (made before the delivery interval) for Universal Service supply is presented in the following table for January 2019, compared with the similar period of 2018:

Structure of trades of suppliers of last resort for universal service supply (obligated/optional supplier of last resort)	January 2018		January 2019	
	Quantity [GWh]	Average price [lei/MWh]	Quantity [GWh]	Average price [lei/MWh]
Contracts concluded on Opcom centralized markets:	475.36	239.46	462.51	268.08
- on CMBC-EA with producers	28.12	221.51	159.09	256.09
- on CMBC-CN with producers	35.02	218.26	30.76	226.67
- on CM-OTC with producers	9.14	249.19	29.76	281.94
- on CMBC-EA with other suppliers	26.65	232.26	7.44	231.48
- on CMBC-CN with other suppliers	218.30	240.93	69.45	266.32
- on CM-OTC with other suppliers	158.14	182.88	166.02	287.13
Contracts concluded on CMUS:	444.23	249.67	178.51	292.54
- contracts on CMUS with producers	425.60	249.86	137.57	297.50
- contracts on CMUS with other suppliers	18.60	245.40	40.95	275.86
Trades concluded on DAM:	136.54	196.99	200.46	428.44
- buy	158.05	182.75	228.30	409.13
- sell	21.51	92.35	27.84	270.06
Transactions concluded on ID:	0.00	-	0.63	-
- buy	0.00	0.00	0.63	678.22
- sell	0.00	0.00	0.00	0.00
TOTAL	1056.13	238.26	842.11	311.74

January 2019 electricity trades structure on the WEM of suppliers of last resort (made before the delivery interval), to supply electricity to inactive clients is shown in the following table:

- GWh -

Trades structure of suppliers of last resort to supply inactive clients	January 2019	
	Quantity [GWh]	Average price [lei/MWh]
Negotiated contracts with non-dispatchable producers (changes and additions to Law 220/2008)*	0.004	71.26
Contracts concluded on centralized contracts markets:	48.32	272.35
- on CMBC-EA with producers	24.72	282.07
- on CMBC-CN with producers	0.17	237.66
- on CM-OTC with producers	7.61	261.94
- on CMBC-EA with other suppliers	0.12	203.20
- on CMBC-CN with other suppliers	2.53	266.06
- on CM-OTC with other suppliers	13.18	262.41
Trades concluded on DAM:	20.41	370.96
- buy	20.60	369.84
- sell	0.18	244.28
Trades concluded on ID:	1.09	579.74
- buy	1.09	579.74
- sell	0.00	0.00
TOTAL	70.01	306.12

* negotiated trades with non-dispatchable producers that fall under the provisions of Law no.184/2018 for the approval of EGO no. 24/2017 regarding the amendment and supplementation of Law no. 220/2008

The following table presents the electricity acquisition structure of suppliers of last resort (before the delivery interval) corresponding to the competitive REM for January 2019, compared to the similar period of 2018:

-GWh-

Structure of trades made by suppliers of last resort for the competitive segment of REM	January 2018	January 2019
Buy		
Contracts concluded on centralized contracts markets:	1277.91	1301.56
- on CMBC-EA with producers	437.55	457.82
- on CMBC-CN with producers	236.64	171.38
- on CM-OTC with producers	174.59	114.96
- on CMBC-EA with other suppliers	19.01	17.01
- on CMBC-CN with other suppliers	133.21	156.43
- on CM-OTC with other suppliers	276.90	383.97
Negotiated contracts with non-dispatchable producers (Law 220/2008)*	3.99	16.06
Trades on DAM	11.79	304.51
Trades on ID	173.25	0.52
Sell		
Contracts concluded on centralized contracts markets:	47.62	33.46
- on CM-OTC with other suppliers	47.62	7.44
- on CMBC-OTC with DO	0.00	26.02
Trades on DAM	57.97	6.44
Households	184.90	365.01
Non-households	1203.33	1244.05

* negotiated trades with non-dispatchable producers that fall under the provisions of Law no.184/2018 for the approval of EGO no. 24/2017 regarding the amendment and supplementation of Law no. 220/2008

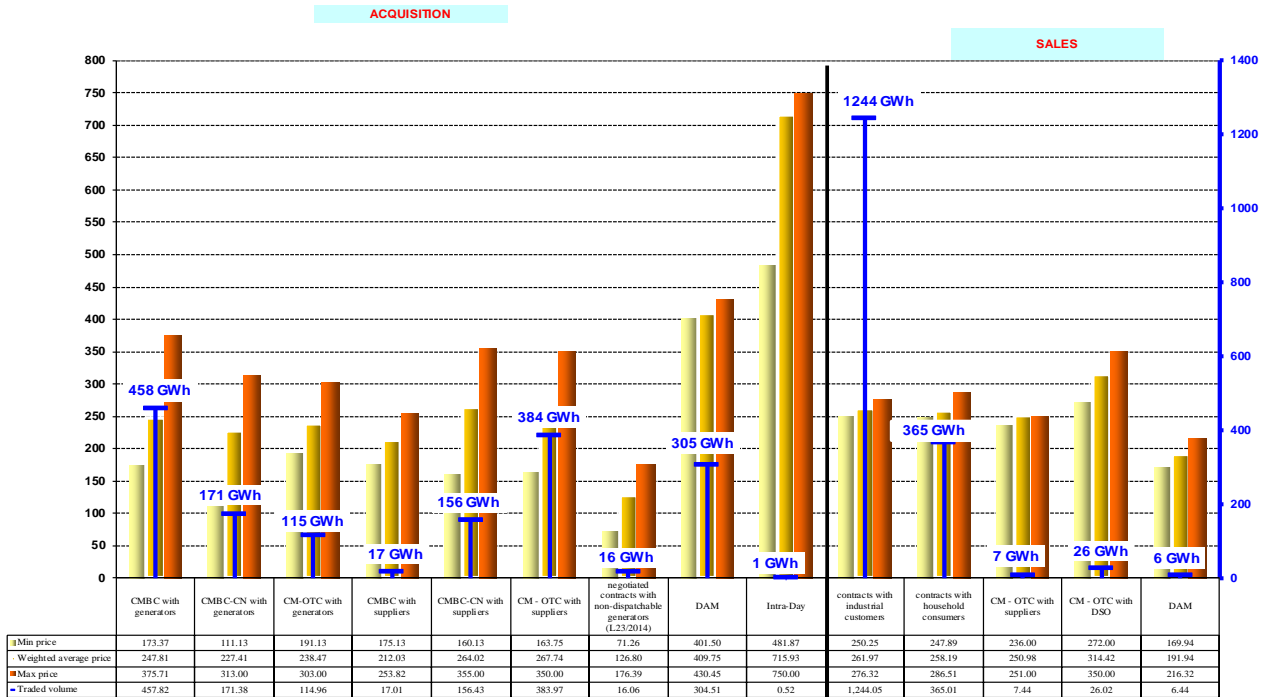
Source: Monthly reports of the suppliers of last resort – Electricity Market Monitoring Unit assessment

The structure by types of sources/destinations of the traded volumes and of the average prices of the suppliers of last resort on the competitive segment of REM is presented in the following graph for January 2019:

lei/MWh

**Trades made by suppliers of last resort for the REM - competitive segment
- January 2019 -**

GWh



Source: Monthly reports of the suppliers of last resort – Electricity Market Monitoring Unit assessment

Main distribution operators

The following table shows the electricity acquisition structure of the main distribution operators (before the delivery interval), for covering the distribution network losses, for January 2019 compared with the similar previous period:

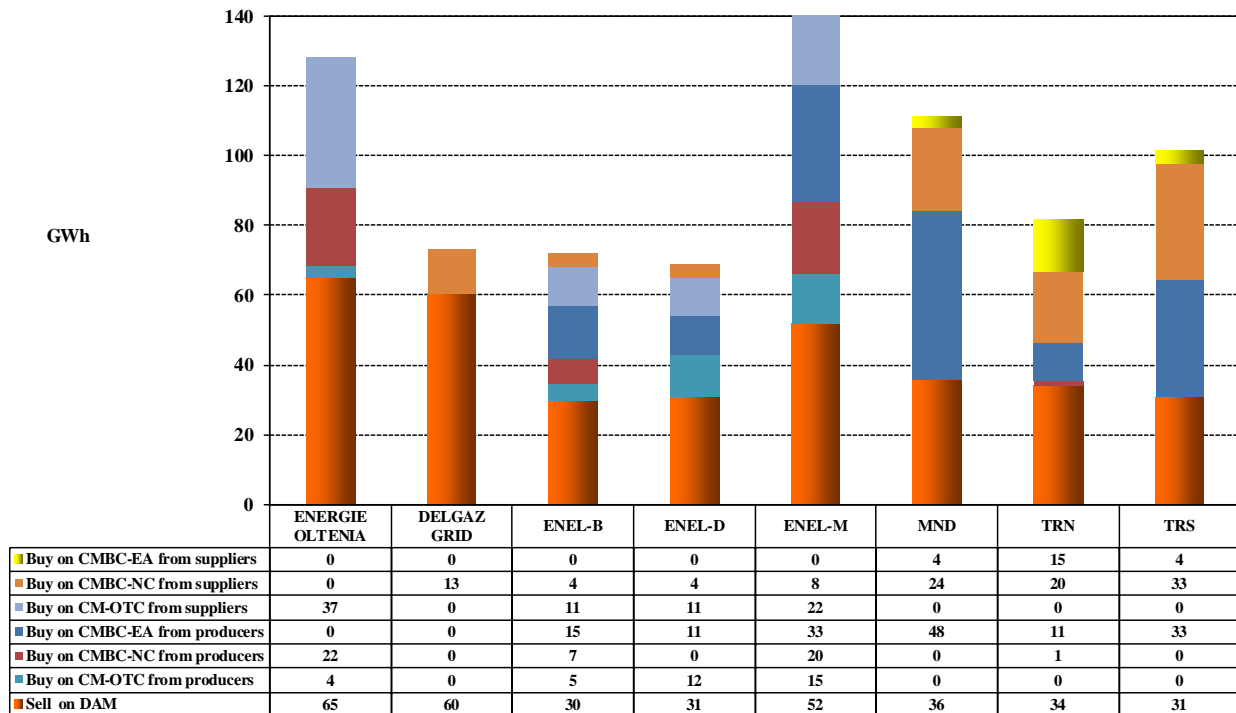
- GWh -

Structure of trades	January 2018	January 2019
Contracts concluded on centralized contracts markets:	673.72	449.6
- CMBC-EA with producers	253.48	152.52
- CMBC-CN with producers	122.71	51.39
- CM-OTC with producers	0.00	35.08
- CMBC-EA with suppliers	71.45	22.32
- CMBC-CN with suppliers	226.08	105.98
- CM-OTC with suppliers	0.00	81.77
Trades concluded on ID	0.06	0.13
- buy	0.06	0.13
- sell	0.00	0.00
Trades concluded on DAM:	184.81	337.97
- buy	189.64	338.08
- sell	4.83	0.11

Source: Monthly reports of the distribution operators – Electricity Market Monitoring Unit assessment

The electricity bought in order to cover network losses is presented in detail in the following graph, for January 2019:

**Structure of electricity trades of distribution operators to cover distribution network losses
JANUARY 2019**



Source: Monthly reports of the distribution operators – Electricity Market Monitoring Unit assessment

6. Concentration indicators for the wholesale electricity market and its components

According to the economic theory, the following market concentration indicators may be defined:

- HHI, Herfindahl-Hirschman Index = sum of square market shares (%) of market participants:

The indicator values signify:

HHI < 1000 non-concentrated market;
 1000 < HHI < 1800 moderately concentrated market;
 HHI > 1800 highly concentrated market.

- C1 = market share of the main market participant (%)

The indicator values signify:

C1 > 20% alarming concentrated market;
 C1 > 40% suggests the existence of a dominant position;
 C1 > 50% clearly indicates a dominant position.

- C3 = sum of market shares of the three main market participants (%)

The indicator values signify:

40% < C3 < 70% moderately concentrated market;
 C3 > 70% highly concentrated market.

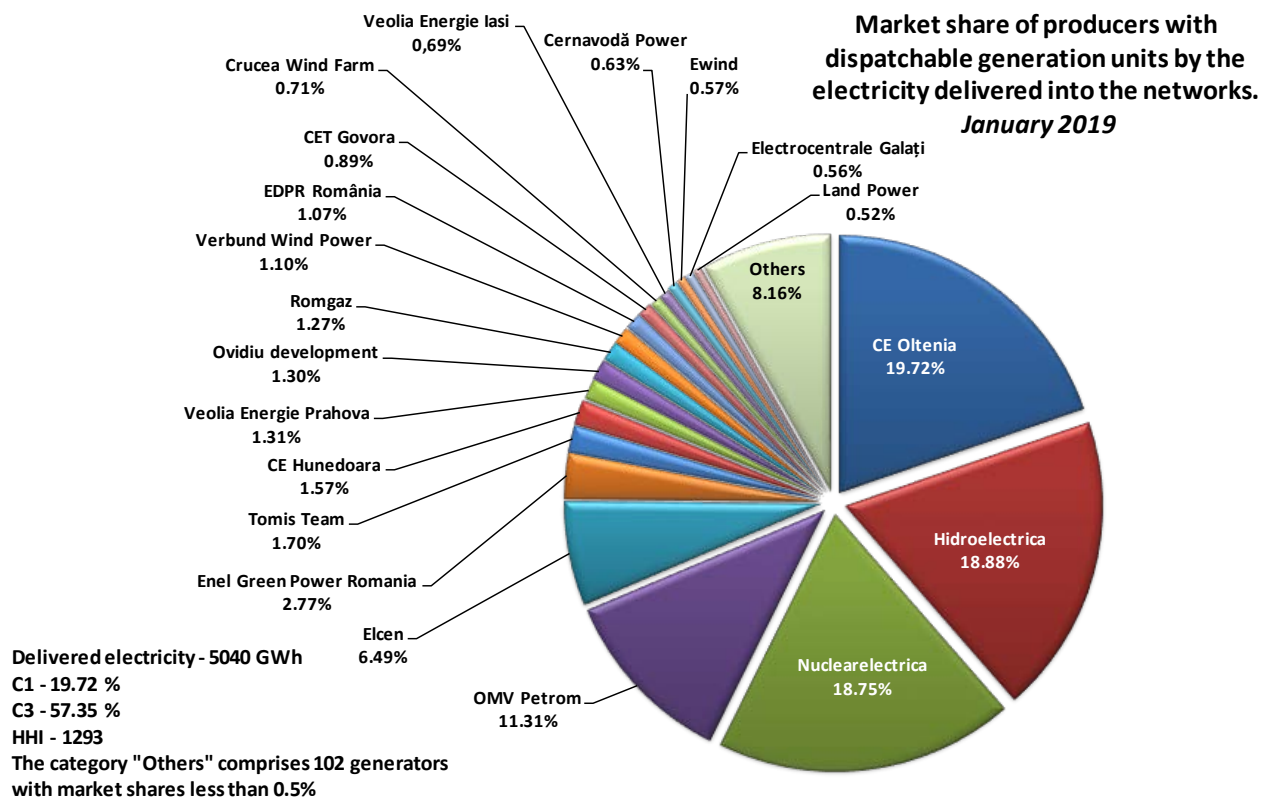
These concentration indicators may be defined for the entire wholesale market (electricity market or ancillary services market) or for each of its components where direct competition takes place.

Concentration indicators and market shares of electricity producers

The market structure regarding the electricity generation offers an initial basis for the assessments on the degree of competitiveness that is possible on the electricity market.

The following table presents the concentration indicators of electricity generation for January 2019 and the graph presents the market shares of electricity producers with dispatchable generation units, on all the wholesale market segments, determined based on the electricity delivered into the networks.

Concentration indicators - January 2019 -	C1 (%)	C3 (%)	HHI
Value	19.72	57.35	1292



Source: Monthly reports of producers – Electricity Market Monitoring Unit assessment

A component of the WEM on which direct competition between generators is displayed is the Balancing Market (BM). The values of concentration indicators on this market are determined based on effectively delivered electricity, for each type of regulation defined within the Commercial Code and they are presented in the following table for January 2019:

Structure/concentration indicators of BM - January 2019-	Regulation					
	Secondary		Fast tertiary		Slow tertiary	
	upward	downward	upward	downward	upward	downward
C1 - % -	68	70	52	52	51	0
C3 - % -	99	99	82	100	100	0
HHI	5397	5615	3331	3915	3989	0

Source: Monthly reports of CNTEE Transelectrica SA – Electricity Market Monitoring Unit assessment

The acquisition of the necessary ancillary services in order to maintain the operational safety of the National Power System in January 2019 was done both through competitive and regulated procurement.

Under Government Decision no. No 773/2018 and EGO no. 26/2018 adopting measures for the safety and security of power supply of the NPS, ANRE President Decision no. 1911/2018 was approved, regarding the acquisition at a regulated price for the period from 1 December 2018 to 31 March 2019 from the producer Electrocentrale Galati SA of an amount of ancillary services representing slow tertiary reserve for a capacity of 70 MW, and also ANRE President Decision no. 2047/2018 regarding the acquisition at a regulated price for the period 1 January to 31 December 2019 from the producer CE Hunedoara SA of an amount of ancillary services representing slow tertiary reserve for a capacity of 400 MW. In addition, CNTEE Transelectrica S.A. organized auctions to buy reserves on all types of regulation.

In the following table, the concentration indicators by types of reserves (secondary, fast tertiary and slow tertiary) are shown.

Concentration indicators on Ancillary Services Market - January 2019 -		Secondary reserve	Fast tertiary reserve	Slow tertiary reserve
regulated component	contracted quantity (h*MW)	-	-	349680
	C1 (%)	-	-	85.1
	C3 (%)	-	-	100.0
competitive component	contracted quantity (h*MW)	348742	484481	223200
	C1 (%)	73.0	74.9	51.9
	C3 (%)	100.0	90.2	100.0
	HHI	6017	5753	4043

Source: Monthly reports of CNTEE Transelectrica SA – Electricity Market Monitoring Unit assessment

Concentration Indicators for the Day Ahead Market

The Day Ahead Market (DAM) is a voluntary market opened for both buying and selling, for all licensees and for foreign economic operators who have been granted by ANRE Decision the confirmation of the right to perform the electricity supply or trading activity in Romania, under the conditions established by the applicable regulations.

The concentration indicators on DAM reflect the level of competition between sellers and between buyers respectively, the dynamics of both influencing the price level. The following table presents C1, C3 and HHI for the buying and for the selling side of DAM, based on quantities traded by participants on this market.

Concentration indicators on DAM - January 2019 -	C1 (%)	C3 (%)	HHI
Selling	25.17	42.30	898
Buying	15.60	28.57	509

Source: Monthly reports of Opcom SA – Electricity Market Monitoring Unit assessment

7. Price evolution on wholesale electricity market

Starting with November 2014, the Romanian DAM is coupled with the spot markets from Hungary, Slovakia and the Czech Republic based on the price coupling mechanism, project known as 4M MC. This coordinated correlation mechanism uses an unique pan-European method for price coupling of regions (called Price Coupling of Regions - PCR-initiative) in order to fulfil the harmonization of national european markets and create the internal european electricity market. The functioning of these spot markets is based on the coupling algorithm recommended by ACER (Euphemia) and its goal is maximizing the social welfare of the entire area of the coupled markets.

The coupling mechanism is developed through the coupling operators OTE-Czech Republic, EPEX Spot (operating as services supplier for OKTE-Slovakia and HUPX-Hungary) and, from 17 January 2017, OPCOM-Romania (who became PCR member starting with 1 January 2016). After successfully implementing the changes and tests performed, OPCOM operates in its own name the coupling solution implemented in the 4M MC operational mechanism, all processes being performed under the security conditions of the coupled functioning of the day-ahead markets. Coupling operators are acting as *Coordinators* on a monthly rotation basis.

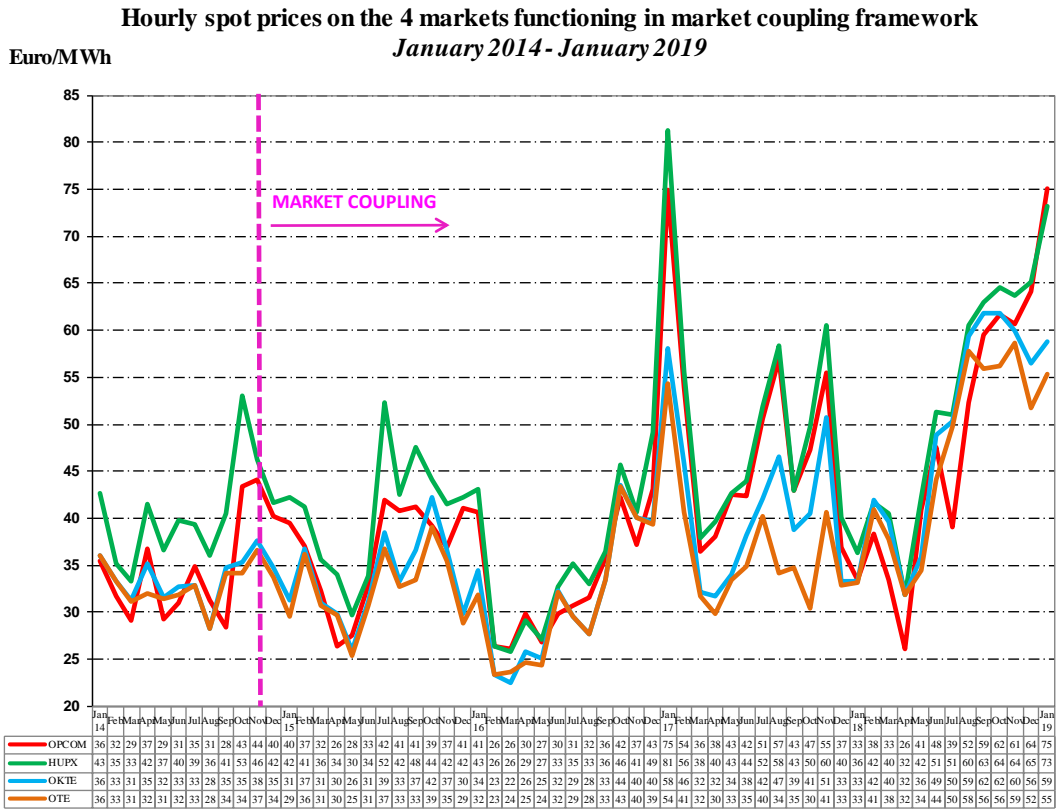
According to EU legislation, coordinated cross-border capacity allocation is under the governance of the TSOs from the 4 countries and the allocation model used is that of implicit allocation on DAM of the available interconnection capacity.

To better meet the purpose of the DAM coupling mechanism, respectively the electricity transfer at the level and direction determined by the known conditions of generation and consumption and based on the coupled markets prices - starting with 1 January 2016, TSO operators from Romania and Hungary (CNTEE Transelectrica SA and Mavir ZRt) under the recommendations of the regulators from both countries, ANRE and MEKH, agreed to reserve a quota of the interconnection capacity for DAM allocation. The same rule was adopted for interconnection capacity allocation on the Bulgarian border.

Therefore, for each month of the year, reserved capacity for DAM allocation is determined as a difference between available transmission capacity (ATC) calculated monthly for each subperiod and 80% from the lowest ATC value resulted for the subperiods of the respective month, plus the capacity allocated at the annual auction, returned to TSO.

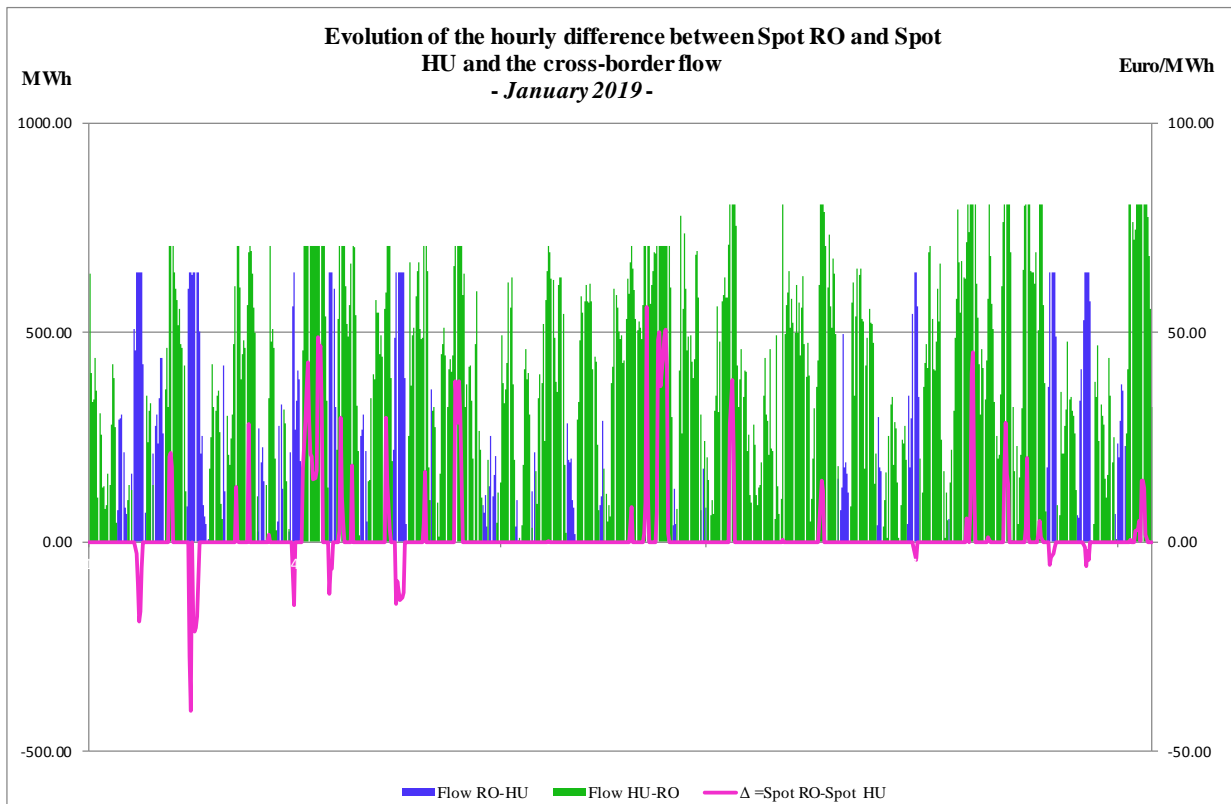
Particularly, for the Hungarian border, if 80% of the lowest value of the ATC calculated monthly for subperiods is lower than 80 MW, interconnection capacity for monthly allocation will be 80% from the ATC calculated for each subperiod, to which is added the allocated capacity at the yearly auction returned to TSO.

The next graph presents the monthly average spot prices of the 4 markets involved in the 4M MC coupling mechanism starting with 1 January 2014, before and after the onset of coupled operation.



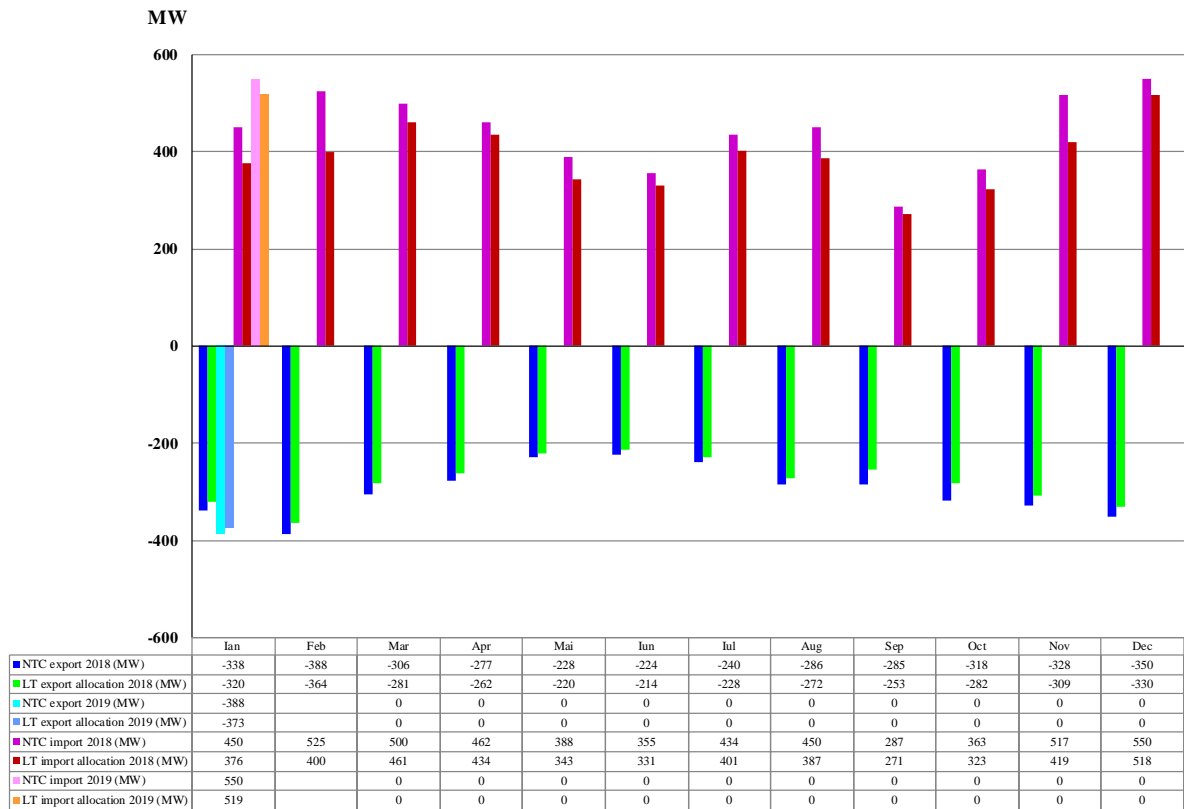
Source: Monthly reports of Opcom SA – Electricity Market Monitoring Unit assessment

Next, the following graph presents the hourly evolution of the difference between the closing prices of the coupled DAM on the Romanian and Hungarian area, correlated with the cross border flows on the Romanian – Hungarian border, on both directions, for the month of January 2019.



Source: Data published by Opcom SA – Electricity Market Monitoring Unit assessment

Evolution of the average NTC and the average cross border capacities allocated on long term auctions
2018-2019

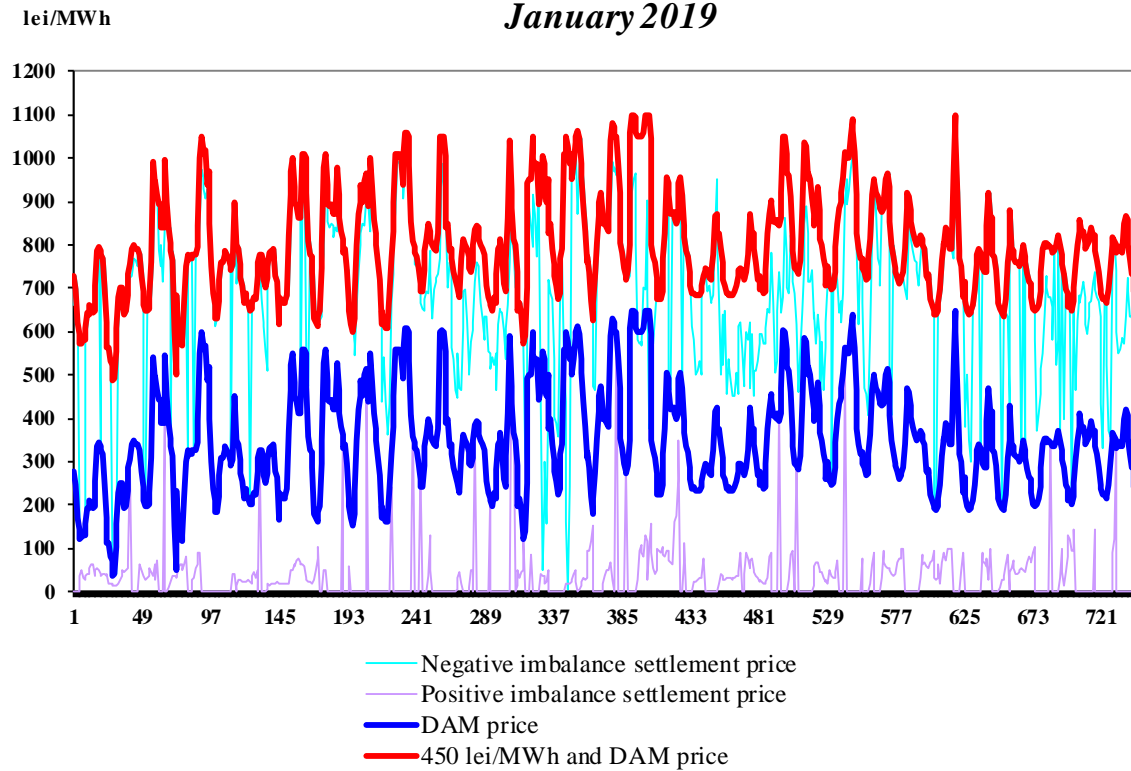


Source: Monthly reports of CNTEE Tranelectrica SA – Electricity Market Monitoring Unit assessment

In order to cover the differences between planned/contracted values of consumption and generation and their values in real time, the system operator (CNTEE Tranelectrica SA) operates the balancing market (BM), "buying" or "selling" electricity at prices determined by the merit order of dispatchable generators offers. The market participants generating imbalances, grouped in BRPs, have to bear the imbalances costs. For the negative imbalances, they have to pay the price resulting from the upward offers accepted on the BM, while for the positive imbalances they receive the price resulting from the downward offers accepted on the BM.

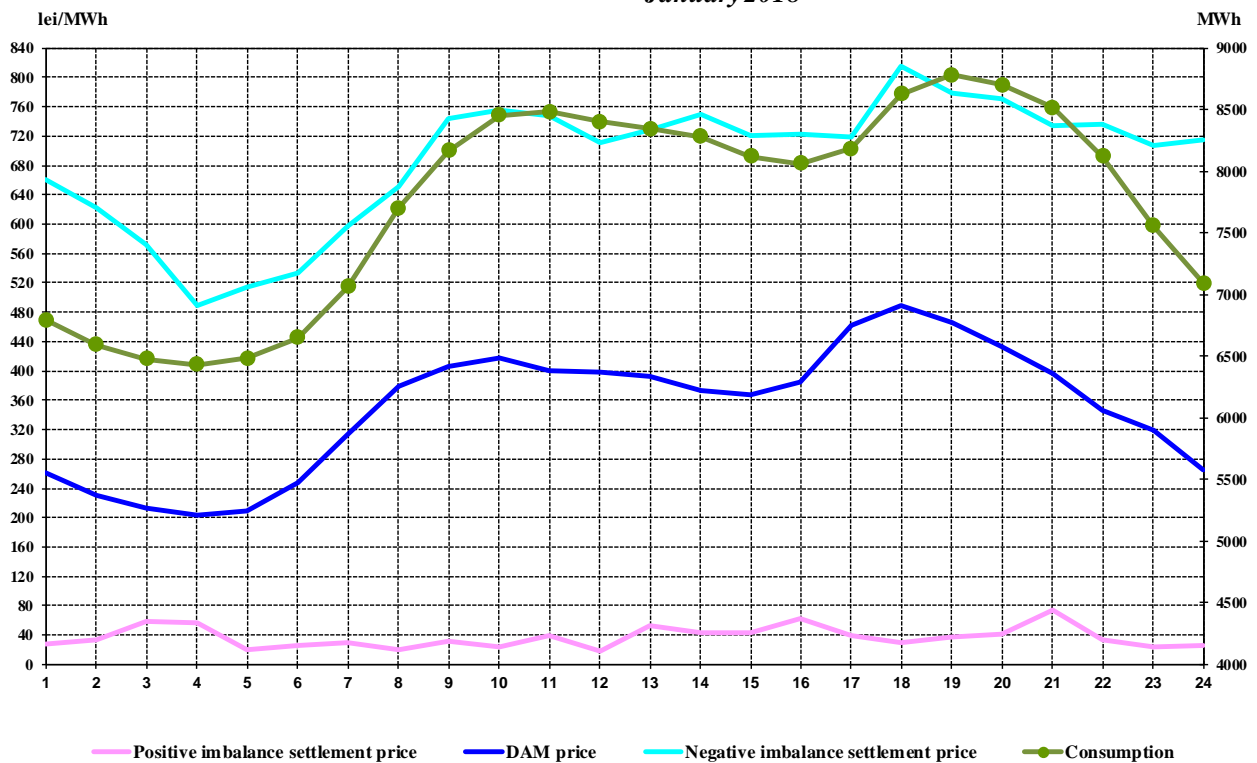
The settlement prices (market closing price on DAM, negative imbalance price and positive imbalance price) are represented on the same graph, thus showing the two markets correlation degree. In the first graph the settlement prices are expressed in hourly values, in the second graph in hourly average values compared to internal consumption, and in the last graph in average monthly values.

Hourly settlement prices January 2019



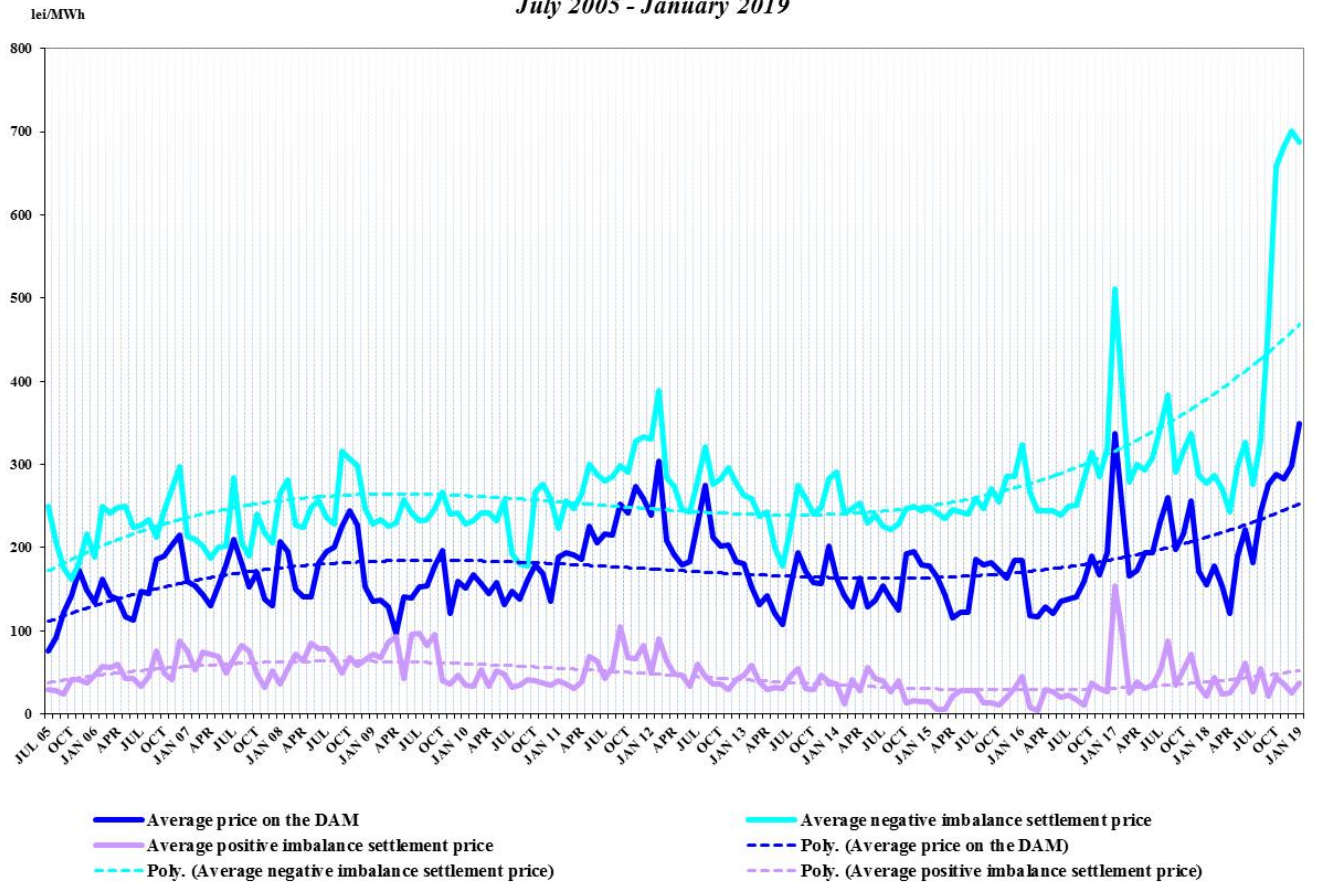
Source: Daily/monthly reports of Opcom SA – Electricity Market Monitoring Unit assessment

Hourly average settlement prices and internal consumption January 2018



Source: Monthly reports of Opcom SA and CNTEE Transselectrica SA – Electricity Market Monitoring Unit assessment

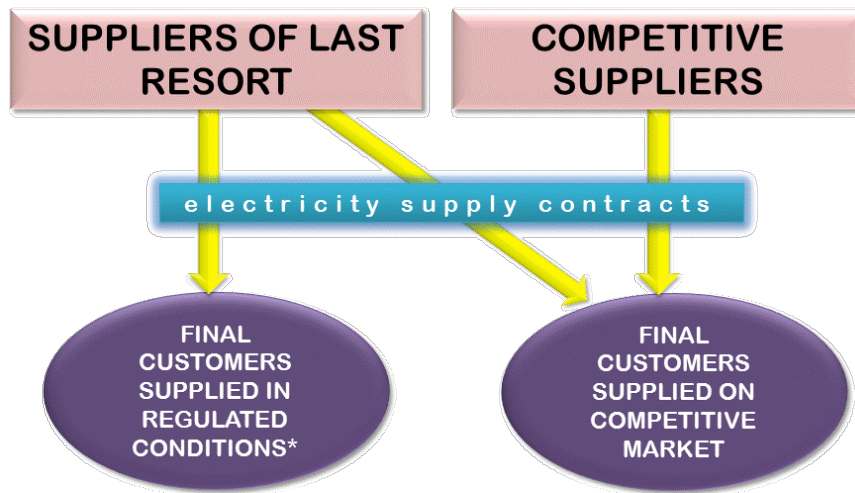
Monthly average prices on DAM and BM
July 2005 - January 2019



Source: Monthly/daily reports of Opcom SA – Electricity Market Monitoring Unit assessment

III. RETAIL ELECTRICITY MARKET

1. Structure of the retail electricity market

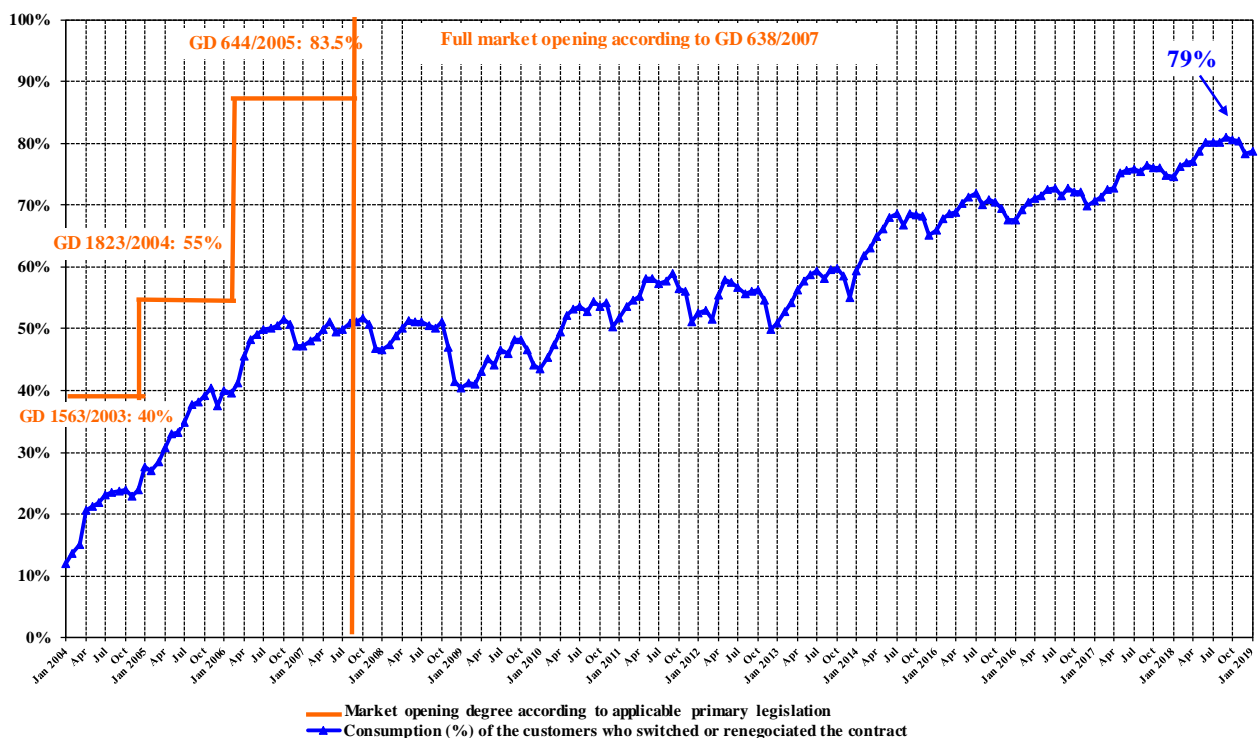


* according to art. 53 (2) and art. 55 (1) from Electricity and Gas Law no. 123/2012

2. Electricity market opening degree

The following graph contains the quota of the consumption (from total consumption) of the customers who switched their supplier or renegotiated their contracts with the suppliers operating on the regulated market, between January 2004 – January 2019. The values presented are cumulated from the beginning of the market opening process and are presented monthly:

Evolution of the opening degree of the electricity market
January 2004 - January 2019

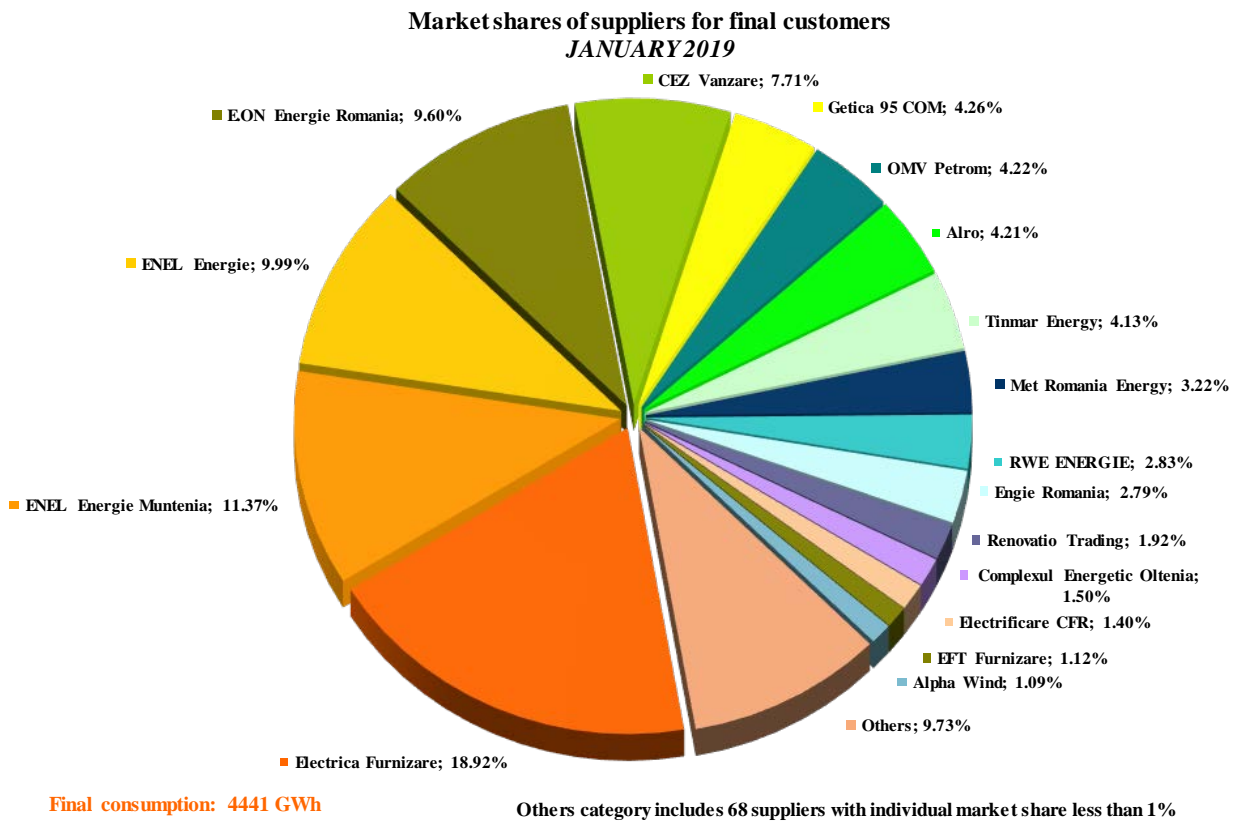


Source: Monthly reports of the final customers suppliers – Electricity Market Monitoring Unit assessment

3. Market shares of electricity suppliers

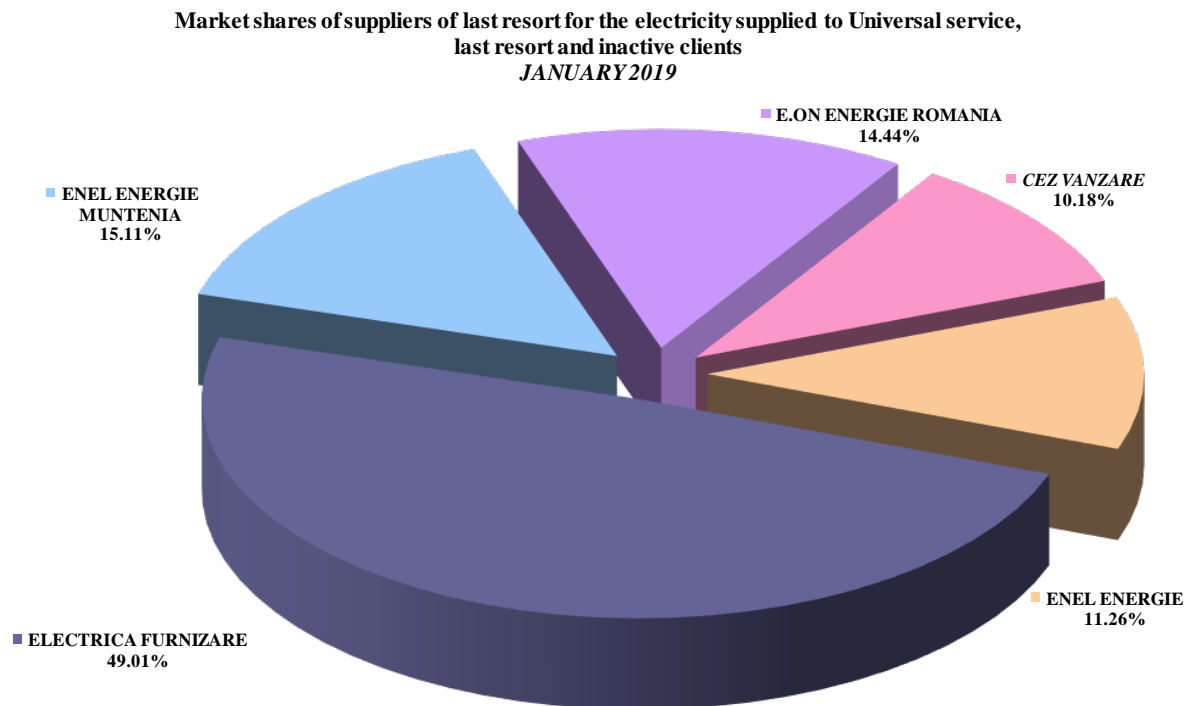
In the following three graphs are presented the market shares of electricity suppliers on the retail market, calculated:

- a) for all licensees monitored, suppliers and producers active on REM, including suppliers of last resort, in terms of electricity supplied to final consumers under US and last resort regime and to consumers who have switched their supplier or have negotiated their contract;



Source: Monthly reports of suppliers for final customers – Electricity Market Monitoring Unit assessment

- b) for suppliers of last resort - based on the electricity supplied to final consumers under Universal service and last resort regime (including inactive consumers);

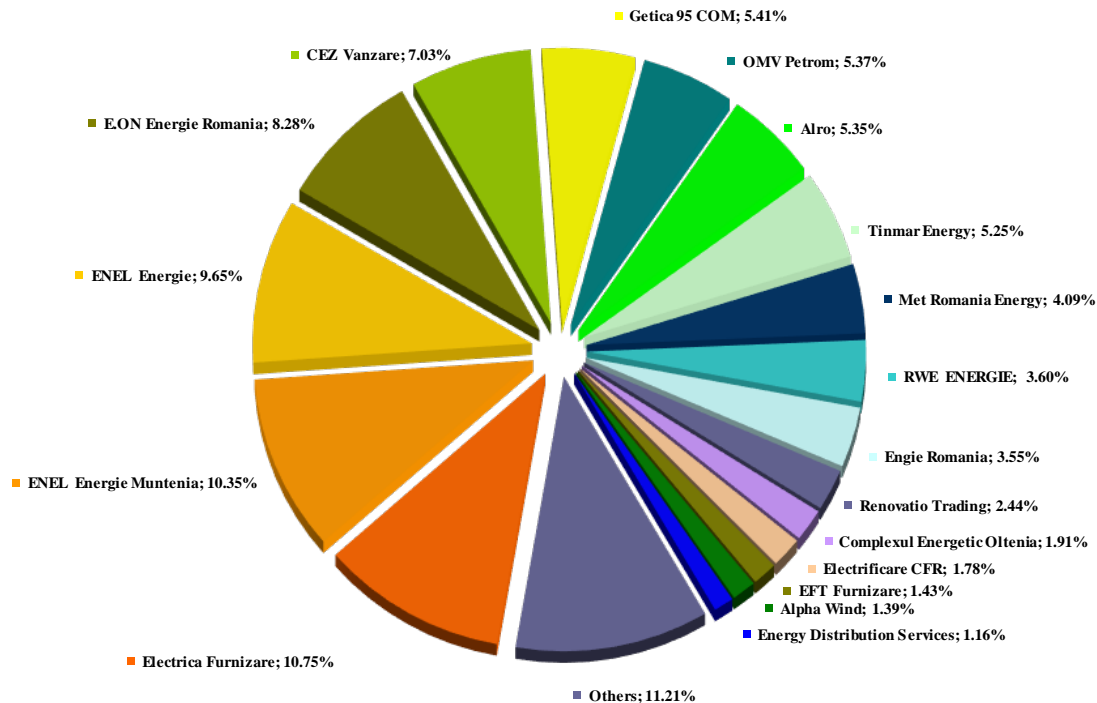


Consumption of Universal service, last resort and inactive clients: 948 GWh

Source: Monthly reports of the suppliers of last resort – Electricity Market Monitoring Unit assessment

- c) for all licensees monitored, suppliers and producers, active on the competitive segment of the REM, including suppliers of last resort - depending on the electricity supplied to consumers who have switched suppliers or negotiated their contracts.

Market shares of suppliers delivering electricity on the competitive market
JANUARY 2019



Consumption on competitive market: 3493 GWh

Structure indicators:

HHI - 614; C3 - 31%; C1 - 11%

Others category includes 67 suppliers with individual market share less than 1%

Source: Monthly reports of the competitive suppliers – Electricity Market Monitoring Unit assessment

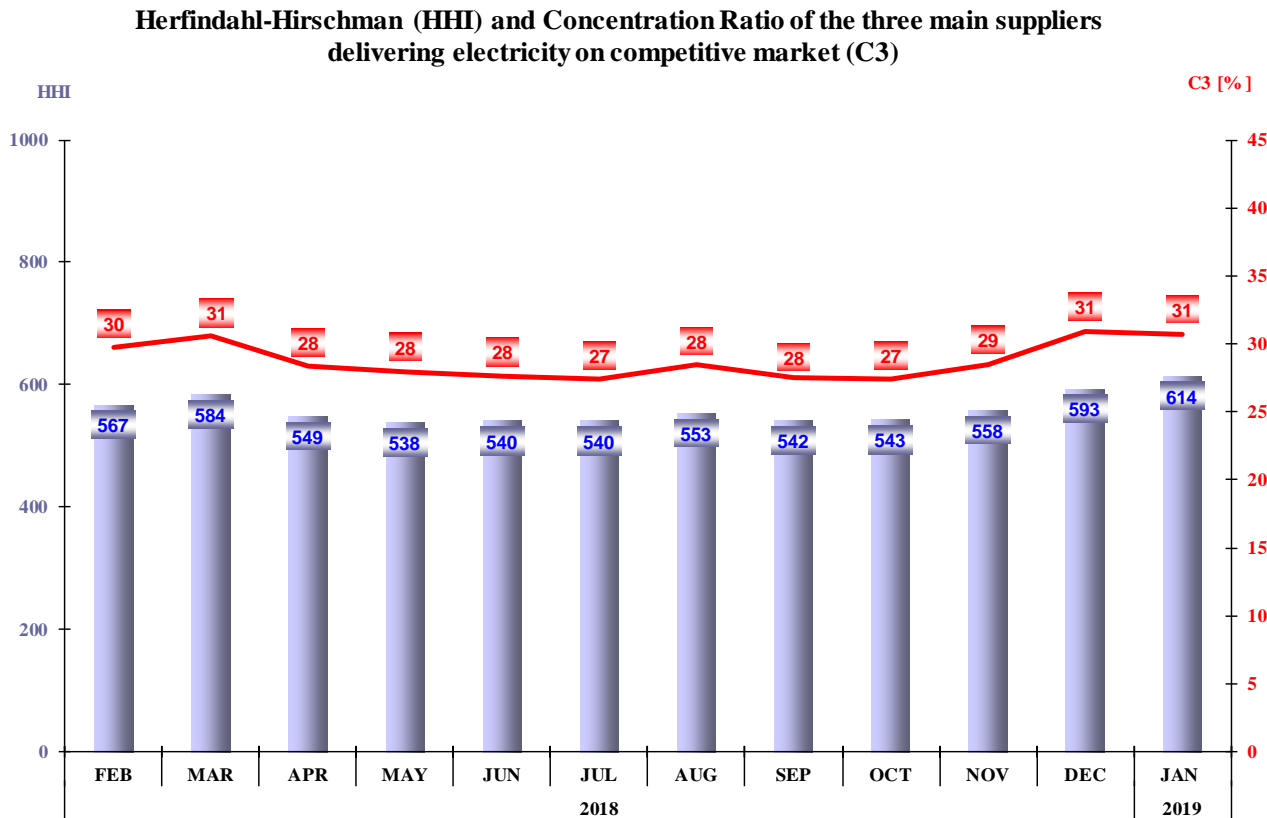
It is noted that in the calculation of the market indicator values the principle of dominance was not taken into account and the electricity supplied on the basis of which each supplier's market share was established includes the self-consumption of the large industrial consumers who also hold a supply license and who have decided to buy the necessary electricity on the wholesale market as competitive suppliers. Quantification of suppliers' activity within the competitive segment of REM compared to that on the WEM can be done by determining the share of sales to final consumers in total sales trades. Therefore, the following table shows the number of suppliers active on the REM, structured according to the size of the activity on this market in January 2019.

Number of suppliers	Share of sales to final customers from total sales trades			
	100%	75% - 100%	50% - 75%	<50%
Competitive	10	26	8	15
Of last resort	0	5	0	0

Source: Monthly reports of the suppliers – Electricity Market Monitoring Unit assessment

4. Concentration indicators of the competitive retail electricity market

The monthly evolution of the concentration indicators (C3, HHI) determined on the competitive component of the REM is presented for January 2019 in the following graph:



Source: Monthly reports of the suppliers – Electricity Market Monitoring Unit assessment

The tables below show the values of market structure indicators for the competitive component of REM and the number of active suppliers in January 2019, calculated for each consumption band defined by the Regulation (EU) 2016/1952, for households and non-households:

Indicators - Jan 2019	Consumption bands - Non-household customers								
	IA	IB	IC	ID	IE	IF	IG	Total	
C1 - % -	33	19	20	11	15	13	22	11	
C3 - % -	72	49	43	31	42	32	50	28	
HHI	2088	1217	954	651	871	743	1158	569	
Consumption - GWh -	159	432	353	715	425	204	806	3095	
No. of SUPPLIERS	63	74	65	63	25	18	17	85	
No. of suppliers of last resort	5	5	5	5	5	3	3	5	
No. of competitive suppliers	43	53	47	47	15	11	8	59	
No. of producers	15	16	13	11	5	4	6	21	

Source: Monthly reports of the suppliers – Electricity Market Monitoring Unit assessment

Indicators - January 2019	Consumption bands - Household customers					
	DA	DB	DC	DD	DE	Total
C1 - % -	51	34	30	28	29	37
C3 - % -	91	80	74	70	67	80
HHI	3758	2304	2090	2018	1913	2465
Consumption - GWh -	131	126	71	51	19	398
No. of SUPPLIERS	36	38	40	39	37	48
No. of suppliers of last resort	5	5	5	5	5	5
No. of competitive suppliers	27	30	31	31	28	37
No. of producers	4	3	4	3	4	6

Source: Monthly reports of the suppliers – Electricity Market Monitoring Unit assessment

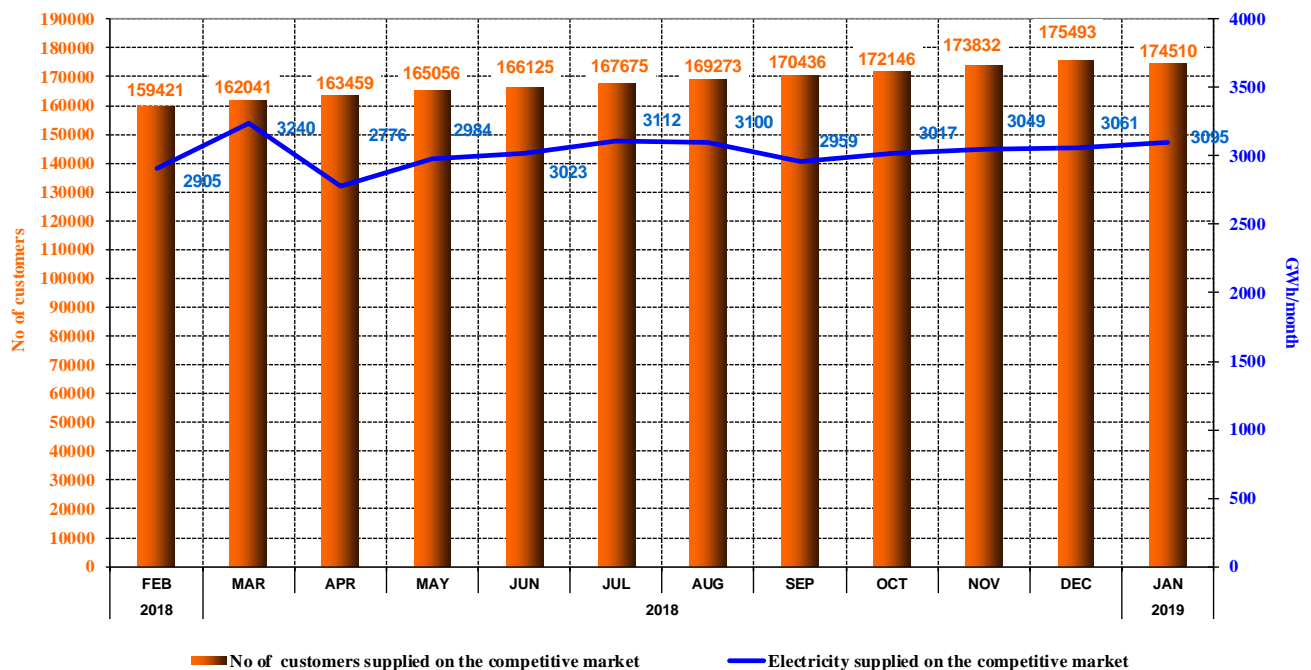
5. The evolution of the number of clients and of the electricity delivered

The number of final customers to whom electricity is supplied under competitive conditions is shown on a monthly basis over the last 12 months. Also, for January 2019 this number is split into customer’s categories, according to the provisions of Regulation (EU) no. 2016/1952. The tables below present the consumption bands for each category of non-households and households:

Non-household customers	Annual electricity consumption (MWh):	
IA		<20
IB	>=20	<500
IC	>=500	<2000
ID	>=2000	<20000
IE	>=20000	<70000
IF	>=70000	<150000
IG	>=150000	

Household customers	Annual electricity consumption (kWh):	
DA		<1000
DB	>=1000	<2500
DC	>=2500	<5000
DD	>=5000	<15000
DE	>=15000	

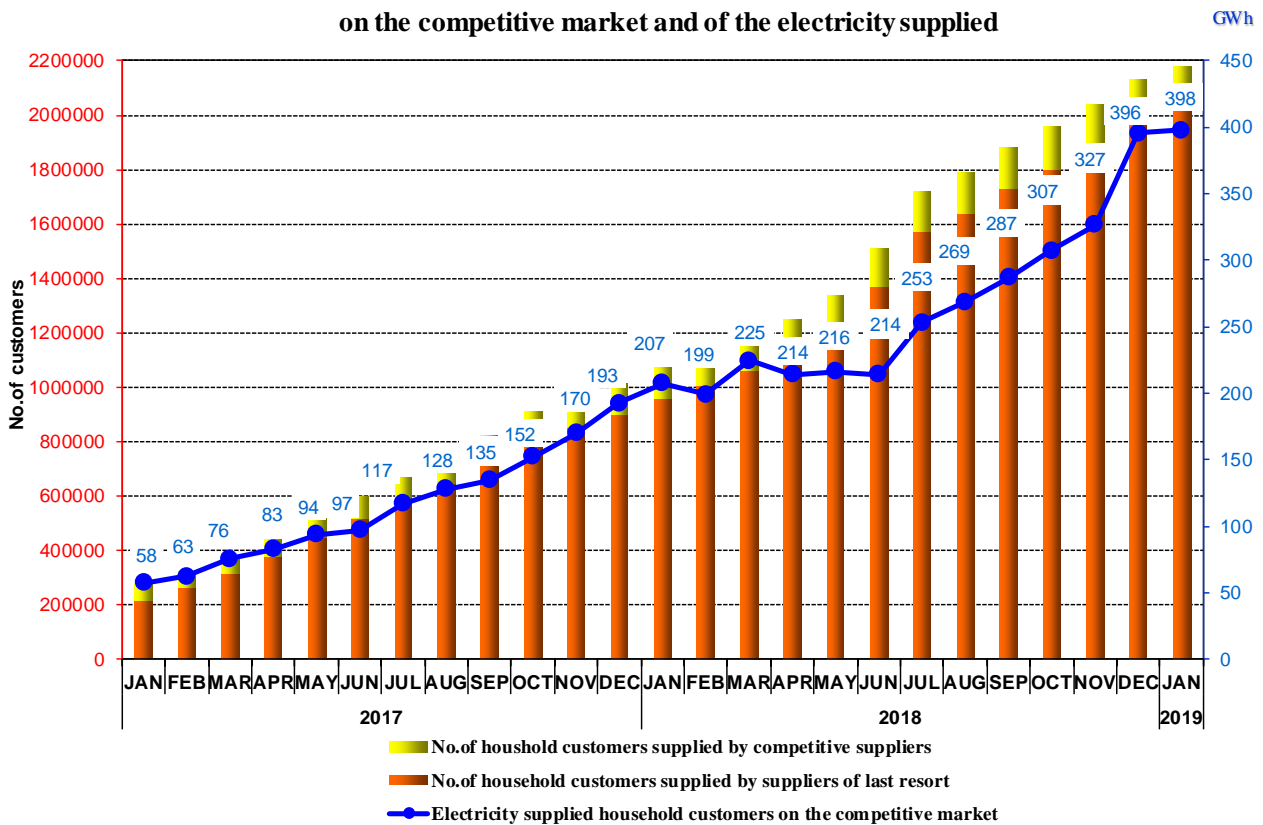
Evolution of the number of non-household customers on the competitive market and of the electricity supplied



Source: Monthly reports of the competitive suppliers – Electricity Market Monitoring Unit assessment

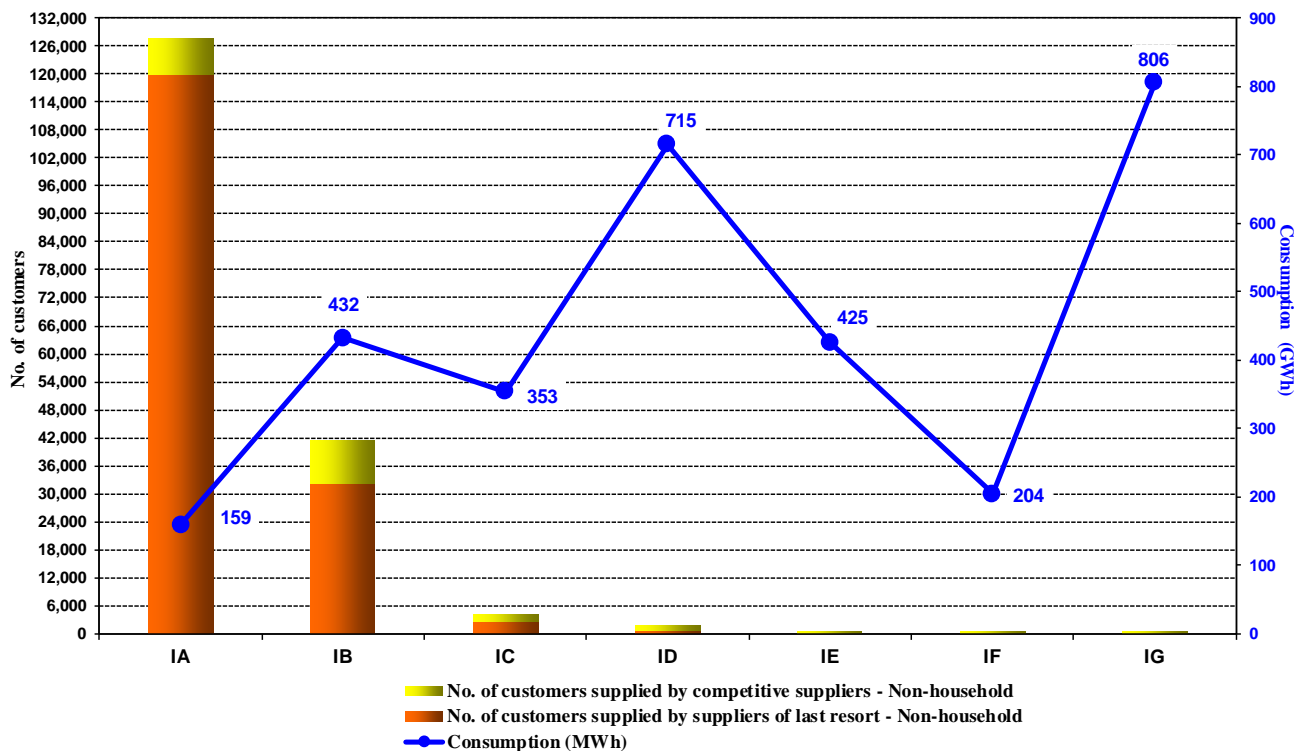
Electricity sales under competitive conditions to households between January 2017 and January 2019 are shown in the following graph:

Evolution of the number of household customers on the competitive market and of the electricity supplied



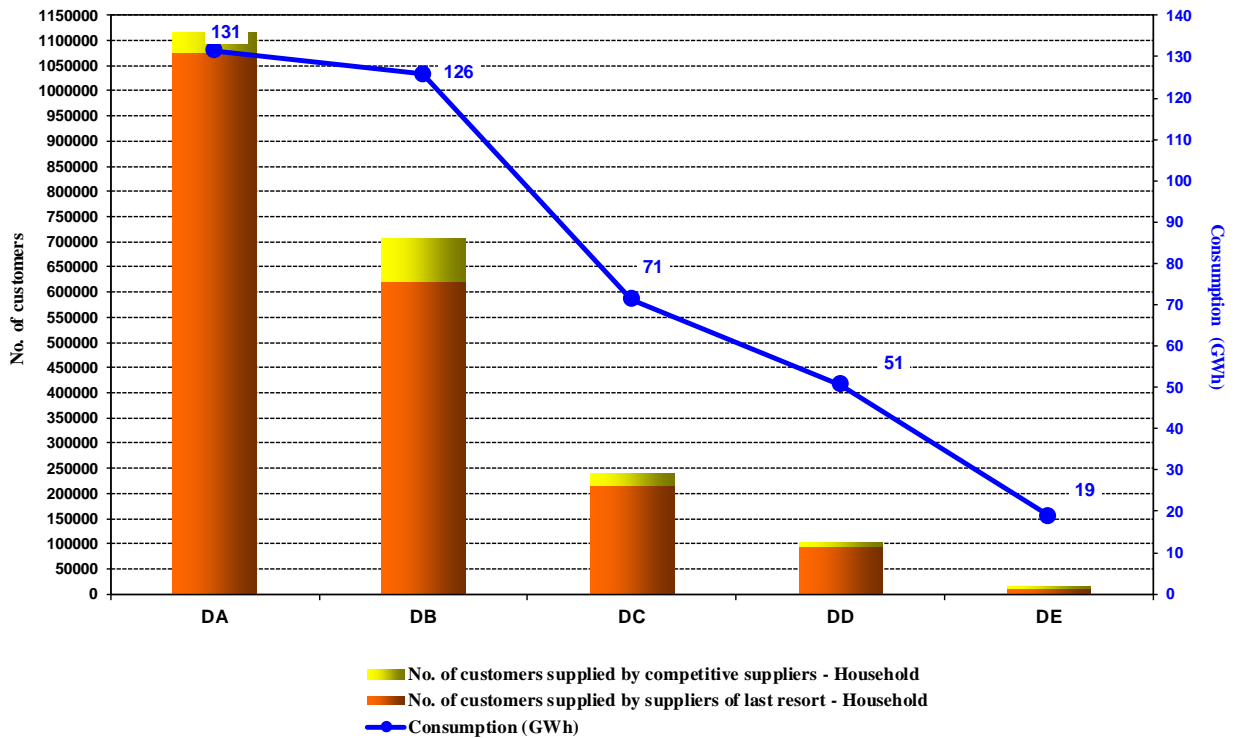
Source: Monthly reports of the suppliers – Electricity Market Monitoring Unit assessment

Number of non-household customers on the competitive market and the consumption of each category of customers - JANUARY 2019-



Source: Monthly reports of the suppliers – Electricity Market Monitoring Unit assessment

Number of household customers on the competitive market and the consumption of each category of customers - JANUARY 2019 -

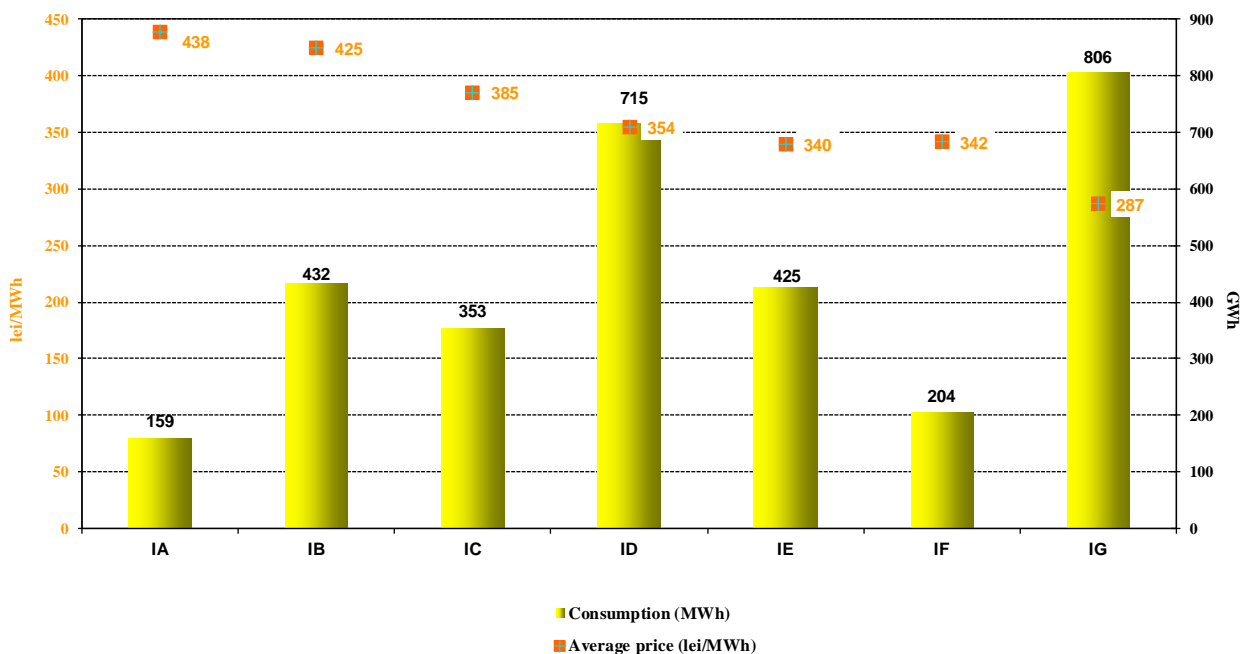


Source: Monthly reports of the suppliers – Electricity Market Monitoring Unit assessment

6. Average selling prices to customers on the competitive market

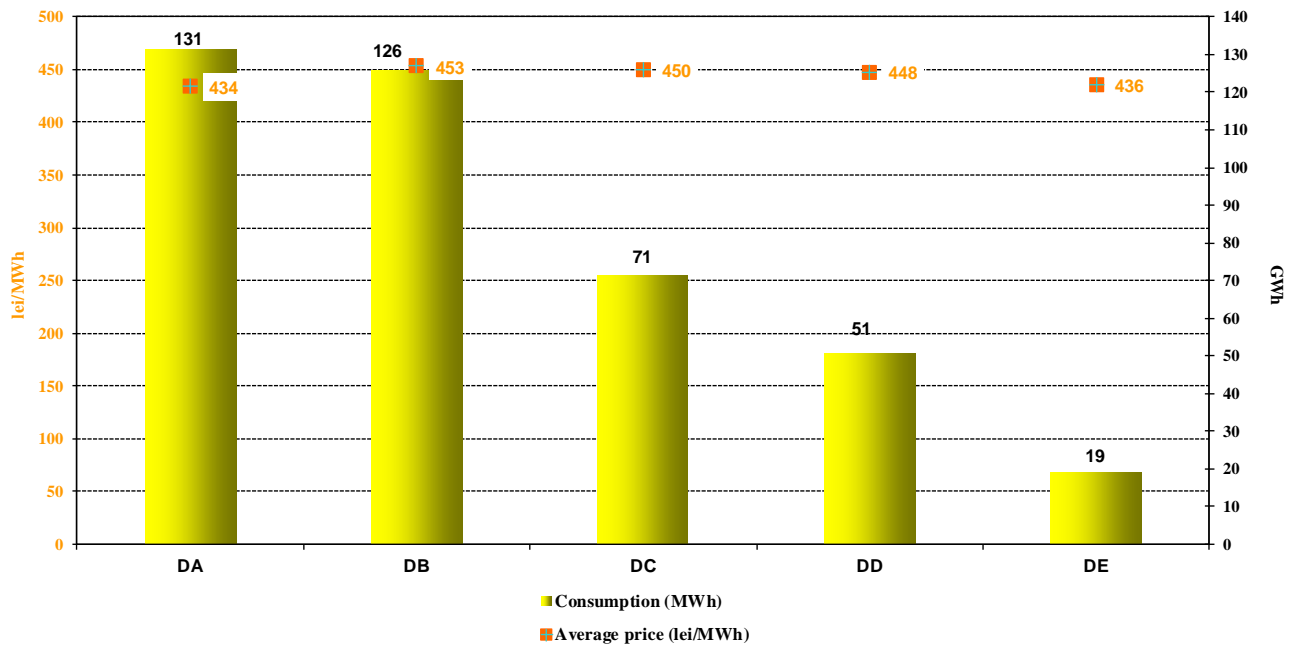
The following graphs present the average selling prices to household and non-household customers supplied on the competitive market, based on the structure defined according to the Regulation (EU) no. 2016/1952, for January 2019.

Average price and energy consumption for non-household customers on the competitive segment of REM - JANUARY 2019 -



Source: Monthly reports of the competitive suppliers – Electricity Market Monitoring Unit assessment

**Average price and energy consumption for household customers on the competitive segment of REM
- JANUARY 2019 -**



Source: Monthly reports of the competitive suppliers – Electricity Market Monitoring Unit assessment

Specifications: The average selling price for each consumption band was determined as an average of the prices applied by suppliers weighted with the quantities supplied by them to the respective consumption band in accordance with the provisions of Regulation (EU) 1952/2016. Prices do not include VAT, excise or other taxes, but include all related services (transport and distribution tariffs, system services, imbalances, BRP aggregation taxes, measurement). Breakdown of customers into consumption bands was based on their annual consumption forecast.

IV. TRANSMISSION AND SYSTEM OPERATOR CNTEE TRANSELECTRICA SA

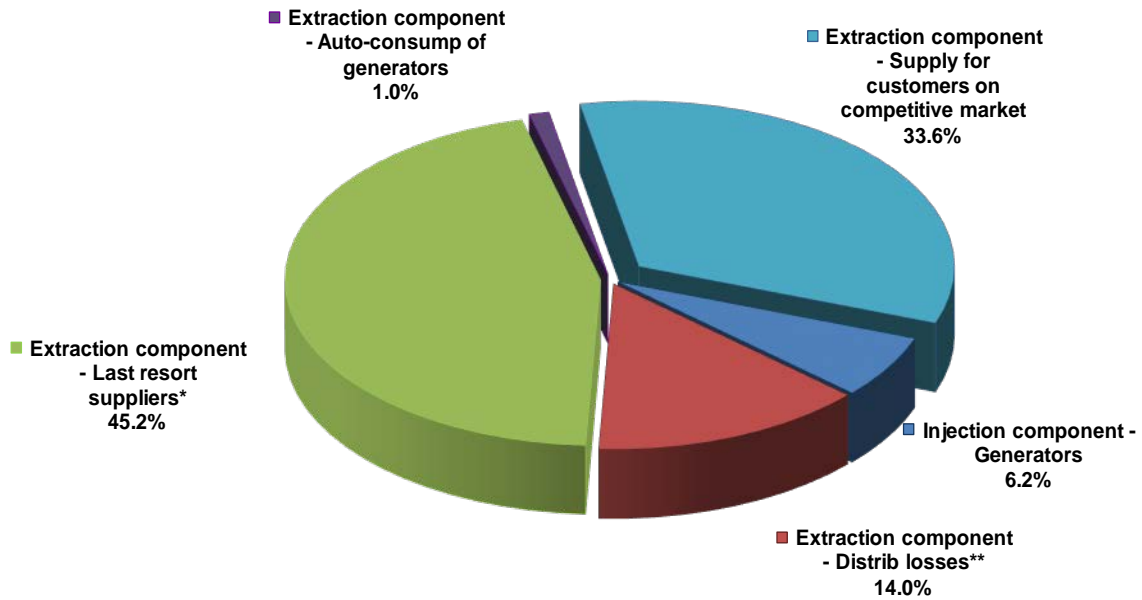
TSO performs the electricity transmission service at regulated tariffs.

Starting with July 2017, the tariff setting methodological principles for the transmission service were modified, eliminating the zonal tariffs for the introduction or extraction of electricity in/out of the network, establishing a single NPS value for each of these tariffs.

Therefore, the injection tariff covers some of the network losses costs and the costs of eliminating congestion by redispatching, while the extraction tariff covers the average cost of the transmission service.

The following graph presents the structure of the revenues for January 2018, following the provision of the transmission service.

**CNTEE Tranelectrica SA structure of revenues from transmission services
- January 2019-**



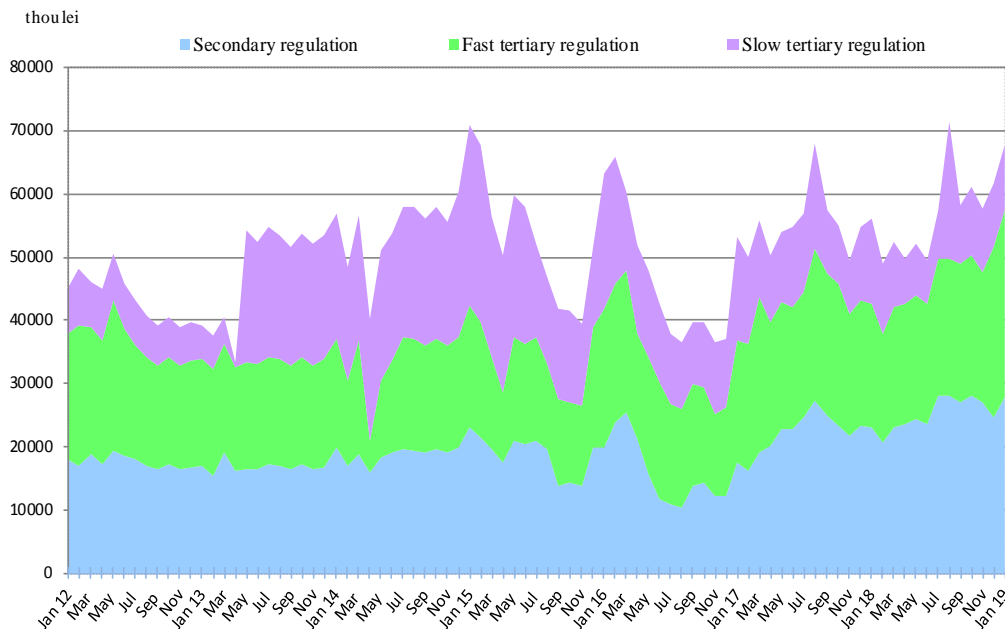
* for electricity extracted from their own licence areas as well as from other areas

** includes the electricity with which some distribution operators supply their own self-consumption places

Source: Monthly reports of CNTEE Tranelectrica SA – Electricity Market Monitoring Unit assessment

In order to perform the system operator tasks, CNTEE Tranelectrica SA assesses and contracts reserves (ancillary services) from qualified participants, which are integrated on BM. The ancillary services which may be used are reserves for secondary, fast tertiary, slow tertiary and reactive energy. The following graph represents the evolution of the costs of the transmission and system operator, starting with January 2012, for the acquisition (regulated and/or through market mechanisms) of ancillary services. In order to cover the costs corresponding to the contracts for the provision of ancillary services, as well as to cover its own operating costs, the TSO applies the regulated tariff for the system service.

**Structure of CNTEE Tranelectrica SA costs with ancillary services
acquired from qualified generators**



Source: Monthly reports of CNTEE Tranelectrica SA – Electricity Market Monitoring Unit assessment

V. MARKET RULES EVOLUTION IN JANUARY 2019

In January 2019, ANRE issued the following regulations with an impact on the wholesale and retail markets:

- ANRE President Order no. 1/16 January 2019 approving the document „All transmission system operators proposal regarding key organisational requirements, roles and responsibilities (KORRR) for data sharing according with the provisions of Article 40(6) of Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation”;
- ANRE President Order no. 3/16 January 2019 to modify and supplement ANRE President Order no. 91/2015 on the approval of The procedure for confirming the right to participate in Romanian electricity markets of foreign legal persons having their registered office in a Member State of the European Union;
- ANRE President Order no. 4/23 January 2019 on the application of the provisions of Article 18(1), Article 21(2) and Article 27 of The Regulation regarding the qualification of electricity production in high efficiency cogeneration and the review and monitoring of fuel consumption and the production of electricity and useful heat, in high-efficiency cogeneration, and of the provisions of Articles 21-23 of The Regulation on establishing how to collect the contribution for high efficiency cogeneration and how to pay the bonus for electricity produced in high efficiency cogeneration;
- ANRE President Order no. 5/23 January 2019 to modify and supplement ANRE President Order no. 62/2013 on the approval of The Regulation for the establishment, notification and sanctioning of breaches from the regulations issued in the field of energy;
- ANRE President Order no. 9/30 January 2019 to modify and supplement The Methodology for setting and monitoring of the overcompensation of the production of electrical and thermal energy in high efficiency cogeneration benefiting from the bonus support scheme approved by the ANRE President Order no. 84/2013;
- ANRE President Decision no. 59/16 January 2019 on the approval of the quantities produced in high efficiency cogeneration units that benefit from the bonus scheme for the month of December 2018.

VI. EXPLANATIONS AND ABBREVIATIONS

1. Explanations

- **Internal consumption** is calculated, in this document, as the sum of electricity delivered into the grid (described below) and the balance of trades made on the basis of the import and export contracts of the wholesale market participants;
- **Consumption of final customers under universal service and last resort regime** represents the consumption of customers supplied by the suppliers of last resort at CMC and last resort prices;
- **Consumption of final customers on competitive market** represents the consumption of customers supplied at negotiated prices or defined by standard bids;
- **Fuel consumption** represents the fuel consumed for generating electricity and heat in the power plants of monitored generators;

- **Self-consumption of generators** (in the graph regarding the revenues of CN Transelectrica SA) the self-consumption exclusively represents the generators consumption at consumption places other than the generation sites;
- **Electricity delivered into the grid** includes the electricity sold by the generators through direct lines or consumed by themselves at other consumption sites;
- **Electricity delivered into the grid according to the transport contract** is the electricity for which the transport service (the grid input component) is provided corresponding to the electricity delivered from the power plants with installed capacity of more than 5 MW connected to the transmission and distribution electric grids (according to ANRE President Order No. 89/2013).

2. Abbreviations

- ATC – Available Transmission Capacity
- BM – Balancing Market
- BRP – Balancing Responsible Party
- CMBC – Centralised Market of Bilateral Contracts
- CMC – Competitive Market Component
- DAM – Day Ahead Market
- DO – Distribution operator
- ID – Intraday Market
- LT – Long Term
- MCP – Market Clearing Price
- 4M MC – Price coupling mechanism for spot markets from Romania. Hungary. Slovakia and Czech Republic
- MU – Monitoring Unit
- NPS – National Power System
- OU-NPD – Operational Unit-National Power Dispatch
- PCSU – Centralised Market of Universal Service (Romanian abbreviation)
- REM – Retail Electricity Market
- SLR – Supplier of last resort
- TG/TL – injection / extraction component of the transmission tariff
- US – Universal Service
- WEM – Wholesale Electricity Market
- NTC - Net Transfer Capacity