REPORT ON RESULTS OF MONITORING THE ROMANIAN ELECTRICITY MARKET DECEMBER 2018

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TABLE OF CONTENTS

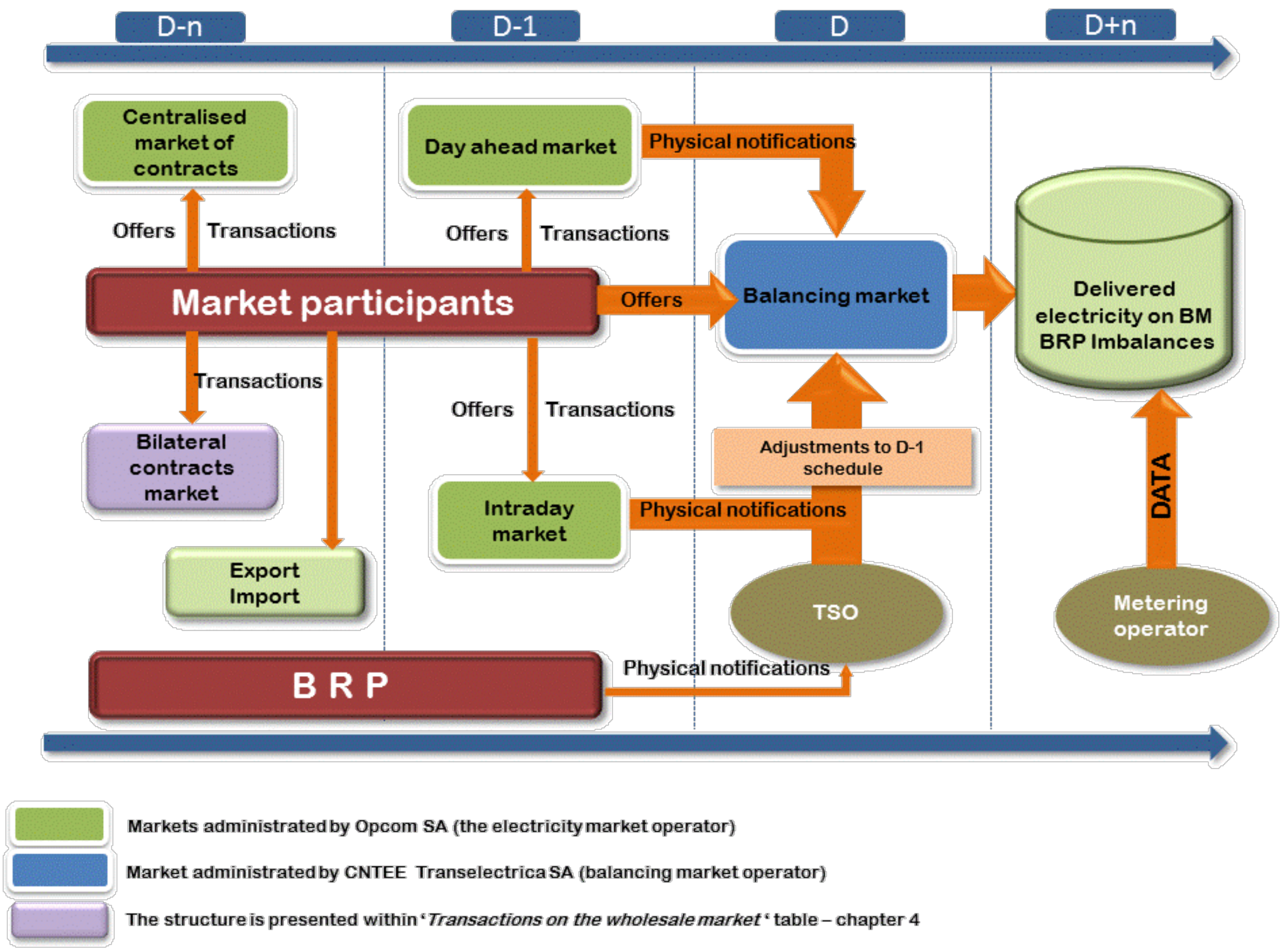
I. MAIN EVENTS IN THE DEVELOPMENT OF THE ROMANIAN ELECTRICITY MARKET

- **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 disolved;
- **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 negociation;
- **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 interconections 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 obtaines 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 obtaines 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 Transelectrica 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 Transelectrica 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.

II. WHOLESALE ELECTRICITY MARKET

1. Structure of the wholesale electricity market



2. Participants on the wholesale electricity market

Market participants* active on the electricity market in December 2018 are presented below, split into categories:

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

No.	Category
K	***Electricity Suppliers acting exclusively on the wholesale market***
1	Alpiq Energy SE
2	Axpo Energy Romania SRL
3	CEZ as
4	Ciga Energy SA
5	Cinta Energy SA
6	Danske Commoditiesa/s Aarhus
7	EDF Trading Limited
8	Energo-Pro Trading EAD
9	Elpetra Energy E.A.D.
10	Energi Danmark A/S
11	Energy Supply D.O.O
12	Eolian Project SRL
13	EVN Trading South East Europe
14	Ezpada SRO
15	Flavus Investiţii SRL
16	Freepoint Commodities Europe Ltd
17	GEN I trgovanje in prodaja elektricne energije doo
18	Interenergo Energetski, Inzeniring d.o.o.
19	Holding_ Slovenske_ Elektrarne
20	Lord Energy SRL
21	MVM Partner Zrt
22	Neptun SA
23	Nis Petrol SRL
24	OMV Gas Marketing & Trading GmbH
25	Petrol, Slovenska energetska druzba
26	Photovoltaic Green Project SRL
27	Statkraft Markets GmbH
28	Transenergo Com SA
29	Unit Energy Trade SRL
30	Verbund Trading Romania SRL
31	We Power Team
L	***Electricity Suppliers acting also on the retail market***
1	Absolute Energy SRL
2	Aderro G.P. Energy SRL
3	A Energy Ind SRL
4	Alive Capital SRL
5	Alpiq RomIndustries SRL
6	Alro SA
7	Aqua Energia SA
8	Anchor Grup SA
9	Apuron Energy SRL
10	Cotroceni Park SA
11	Crest Energy SRL
12	CYEB SRL
13	EFE Energy SRL
14	EFT Furnizare SRL
15	Energia Gas & Power SRL

No.	Category
	Electricity Suppliers acting also on the retail market
16	Energy Trade Activ SRL
17	Elcata MHC SRL
18	Electric Planners SRL
19	Electrificare CFR SRL
20	Elsid SA
21	Electrocarbon SA
22	Electromagnetica SA
23	Enel Trade Romania SRL
24	Energy Distribution Services SRL
25	Engie Romania SA
26	Enol Grup SA
27	Entrex Services SRL
28	Eolian Generator SRL
29	E.V.A. Energy SRL
30	Future Power SRL
31	GDM Logistic SRL
32	Getica 95 Com SRL
33	Grenerg SRL
34	Hermes Energy International SRL
35	ICCO Energ SRL
36	ICPE Electrocond Technologies SA
37	Imperial Development SRL
38	Industrial Energy SA
39	Izvor de Lumina SRL
40	Luxten LC SA
41	Menarom PEC SRL
42	MET Romania Energy SA
43	Monsson Trading SRL
44	Next Power SRL
45	Next Energy Parteners SRL
46	Nova Power&Gas SRL
47	P.C. Management & Consulting SRL
48	Plenerg SRL
49	Power Clouds SRL
50	QIA Energy SRL
51	QMB Energ SRL
52	RCS&RDS SA
53	Renovatio Trading SRL
54	Restart Energy One SRL
55	Romelectro SA
56	RWE Energie SRL
57	Stock Energy SRL
58	Tinmar Energy SA
59	Transformer Energy Supply SRL
60	Unistil SRL
61	Uzinsider General Contractor SA
62	Veolia Energie România SA
63	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.

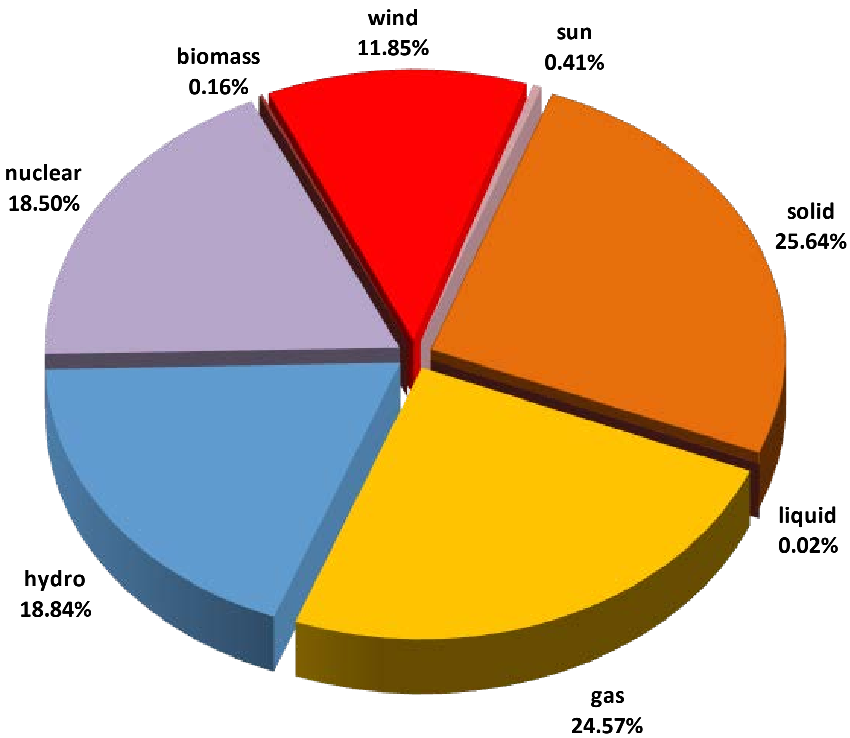
The monitored electricity generation license holders are producers holding dispatchable groups, which, according to the Regulation for programming production units and dispatchable consumers, approved by the ANRE President Order no. 32/2013 are classified under the following power categories:

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”.

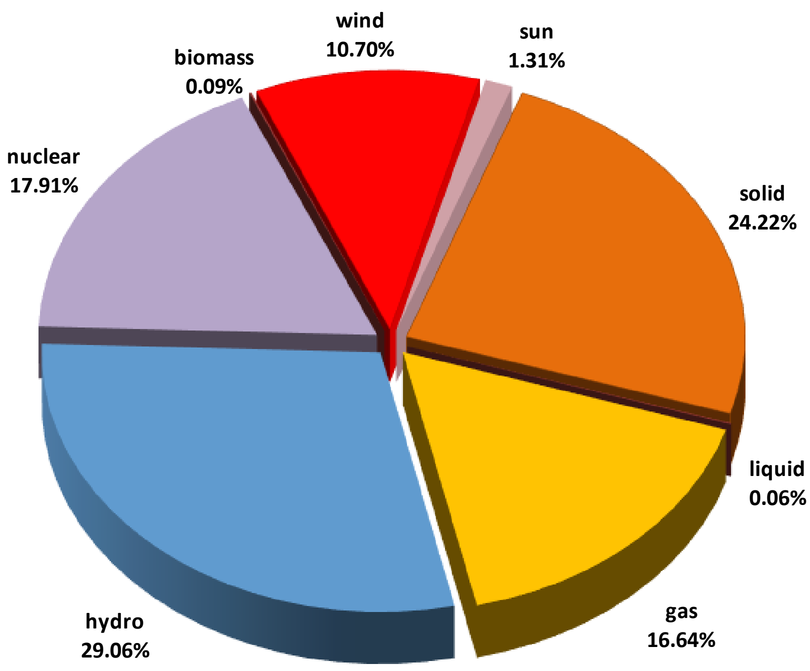
3. Generation structure of the National Power System on types of resources

Electricity structure by primary sources
(delivered by generators with dispatchable units)
- December 2018 -



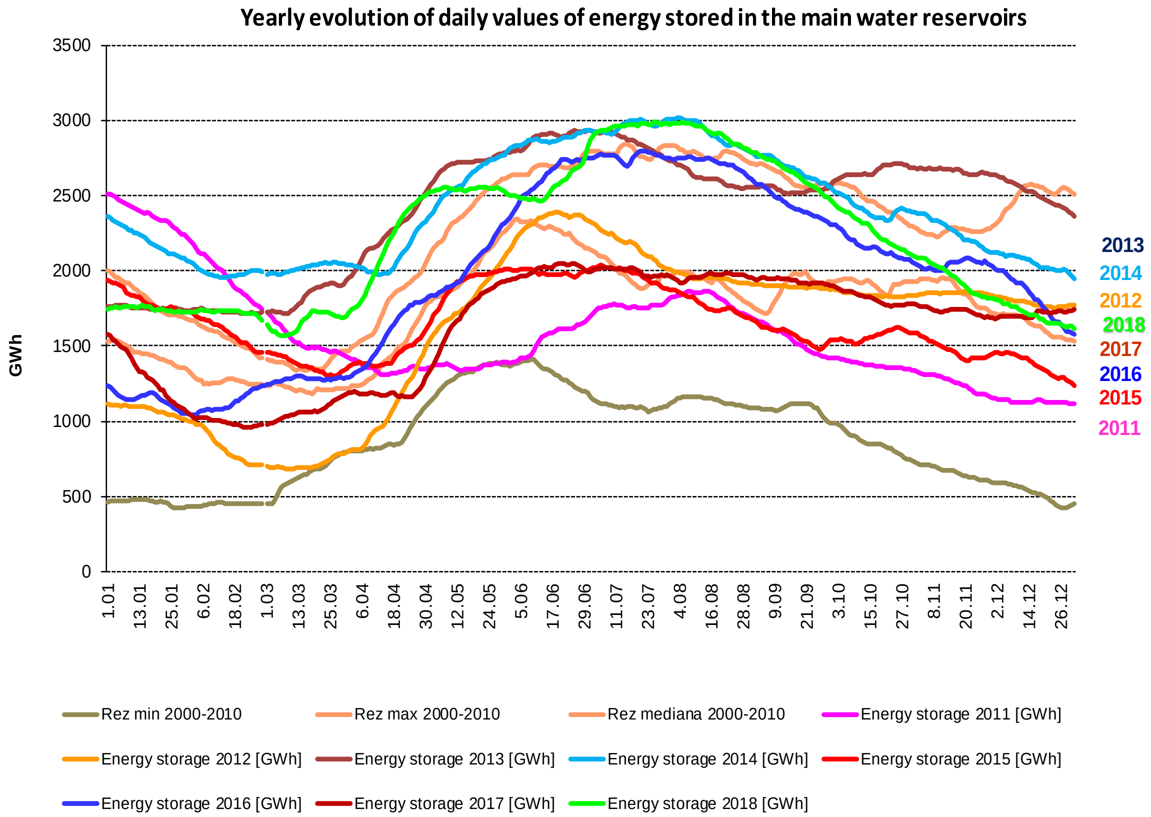
Source: Monthly reports of producers – Electricity Market Monitoring Unit assessment

Electricity structure by primary sources
(delivered by generators with dispatchable units)
- 2018 -



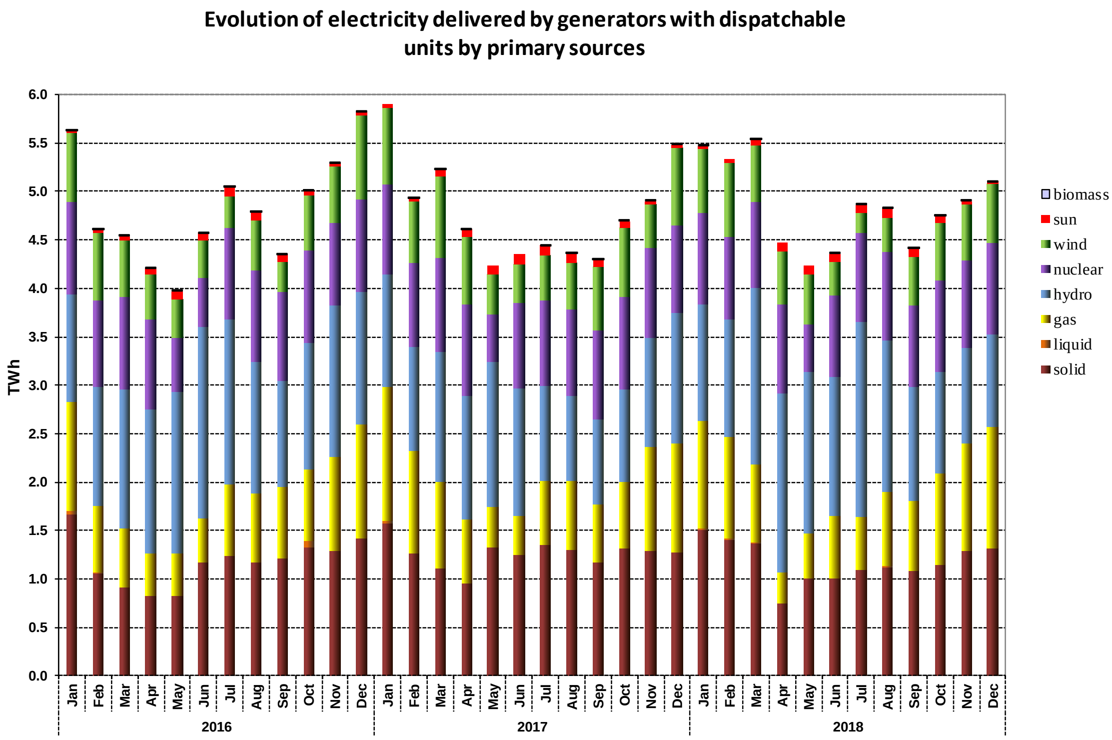
Source: Monthly reports of producers – Electricity Market Monitoring Unit assessment

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 December 2018 compared to the daily values of the last 7 years and compared to minimum, maximum and median values from 2000-2010.



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:



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

The following table presents the main data regarding the physical balance of electricity for December 2018 and 2018 respectively, compared to the data for the similar period of 2017:

Nr. Crt.	**INDICATOR**	**UM**	**Dec 2017**	**Dec 2018**	**%**	**2017**	**2018**	**%**
0	**1**	**2**	**3**	**4**	**5=4/3*100**	**6**	**7**	**8=7/6*100**
1	Generated electricity	TWh	5.86	5.46	93.17	61.32	61.97	101.06
2	Delivered electricity	TWh	5.50	5.11	92.91	57.48	58.31	101.44
3	Import	TWh	0.16	0.48	300.00	3.65	2.93	80.27
4	Export	TWh	0.69	0.33	47.83	6.55	5.48	83.66
5	Internal consumption (2+3-4)	TWh	4.97	5.26	105.84	54.59	55.76	102.14
6	Consumption of household customers:	TWh	1.13	1.26	111.50	12.60	12.78	101.43
6.1	*on Universal Service regime*	*TWh*	*0.94*	*0.86*	*91.49*	*11.24*	*9.66*	*85.94*
6.2	*on the competitive market*	*TWh*	*0.19*	*0.40*	*210.53*	*1.36*	*3.12*	*229.41*
7	Consumption of non-households customers:	TWh	2.97	3.15	106.06	35.82	37.24	103.96
7.1	*on universal service and last resort regime*	*TWh*	*0.10*	*0.09*	*90.00*	*1.15*	*0.99*	*86.09*
7.2	*on the competitive market*	*TWh*	*2.87*	*3.06*	*106.62*	*34.67*	*36.25*	*104.56*
8	Transmission–Injection component	TWh	5.39	4.99	92.58	56.15	56.94	101.41
9	Transmission–Extraction component	TWh	4.96	5.16	104.03	54.76	55.79	101.88
10	Actual transmission grid losses	TWh	0.09	0.10	111.11	0.96	1.10	114.58
11	Heat generated for delivery	Tcal	1799.14	1845.59	102.58	12995.21	12345.82	95.00
12	Heat in co-generation	Tcal	1405.74	1268.65	90.25	10034.46	9031.86	90.00

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 Transelectrica 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 US (Universal Service) household customers is the electricity consumption invoiced at US price.

** The differences from the Electricity Market Monitoring Report of December 2017 are determined by the processing of data corrections reported by economic operators.*

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 based on 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	November 2018	December 2018	December 2017
1. BILATERAL CONTRACTS' MARKET			
traded volume (GWh)	**32**	**38**	**164**
average price (lei/MWh)	174.20	175.63	123.76
% from internal consumption (%)	0.7	0.7	3.3
1.1. Sales on regulated contracts			
traded volume (GWh)			**105**
average price (lei/MWh)	-	-	117.51
% from internal consumption (%)			2.1
1.2. Sales on negotiated contracts[1)]			
traded volume (GWh)	**32**	**38**	**59**
average price (lei/MWh)	174.20	175.63	134.89
% from internal consumption (%)	0.7	0.7	1.2
2. EXPORT			
traded volume (GWh) [2)]	**366**	**331**	**685**
average price (lei/MWh)	246.50	245.95	166.81
% from internal consumption (%)	7.5	6.3	13.8
3. CENTRALIZED MARKETS OF BILATERAL CONTRACTS			
traded volume (GWh)	**5749**	**6072**	**5916**
average price (lei/MWh)	217.78	217.27	185.45
% from internal consumption	117.9	115.5	119.0
3.1. Extended auction mechanism CMBC-EA[3)]			
traded volume (GWh)	**1881**	**2032**	**2585**
average price (lei/MWh)	203.88	206.70	176.54
% from internal consumption	38.6	38.7	52.0
3.2. Continuous negotiation mechanism CMBC-CN [3)]			
traded volume (GWh)	**1306**	**1351**	**1118**
average price (lei/MWh)	212.90	212.77	194.26
% from internal consumption	26.8	25.7	22.5
3.3. CM-OTC mechanism [3)]			
traded volume (GWh)	**2562**	**2689**	**2213**
average price (lei/MWh)	230.47	277.51	191.41
% from internal consumption	52.5	51.2	44.5
4. CENTRALIZED MARKET FOR UNIVERSAL SERVICE - CMUS			
traded volume (GWh)	**158**	**171**	**529**
average price (lei/MWh)	256.36	256.52	234.13
% from internal consumption	3.2	3.3	10.6
5. DAY AHEAD MARKET			
traded volume (GWh)	**2105**	**2265**	**2049**
average price (lei/MWh) [4)]	282.48	298.47	170.92
% from internal consumption	43.2	43.1	41.2
6. INTRADAY MARKET			
traded volume (GWh)	**5.8**	**8.99**	**13.25**
average price (lei/MWh) [5)]	131.09	175.85	88.20
% from internal consumption	0.1	0.2	0.3
7. BALANCING MARKET			
traded volume (GWh)	**263**	**311**	**407**
% from internal consumption	5.4	5.9	8.2
upward volume (GWh)	**189**	**229**	**259**
average price for negative imbalance (lei/MWh)	682.27	700.79	287.17
downward volume (GWh)	**74**	**82**	**148**
average price for positive imbalance (lei/MWh)	36.66	25.60	33.35
INTERNAL CONSUMPTION (GWh) ***(distribution and transmission losses included)***	**4877**	**5256**	**4973**

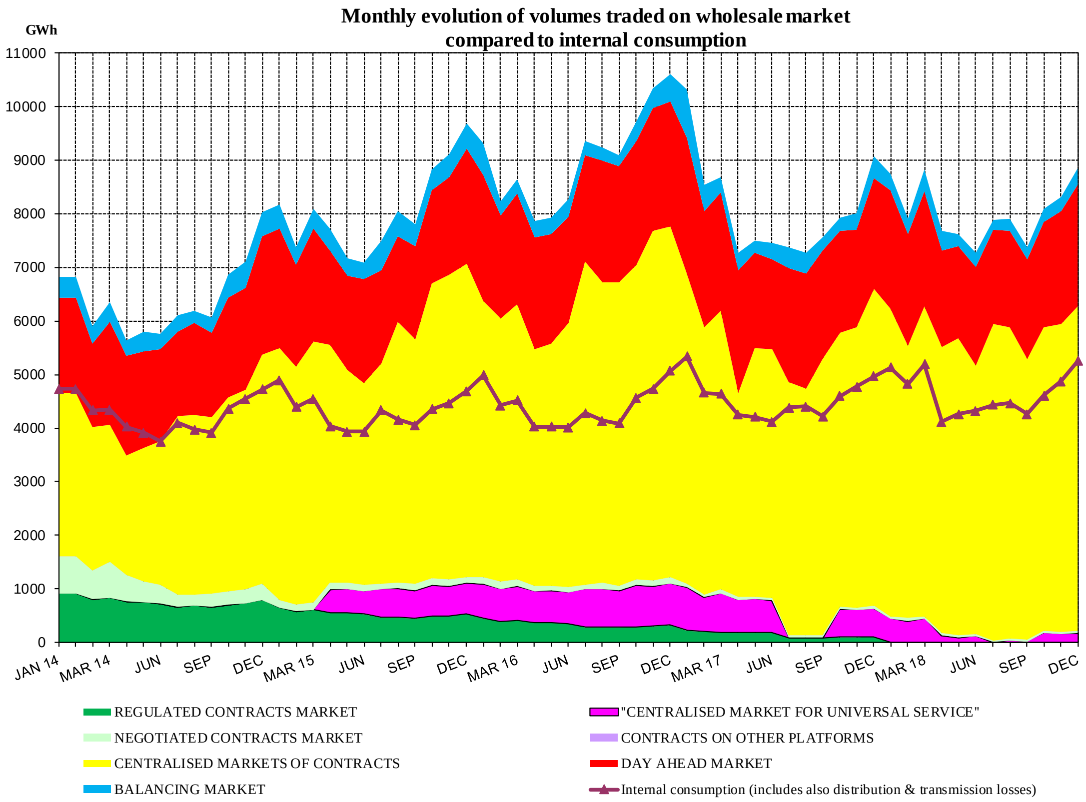
WHOLESALE MARKET TRADES	2016	2017	2018
1. BILATERAL CONTRACTS' MARKET			
traded volume (GWh)	**5435**	**2357**	**438**
average price (lei/MWh)	138.73	131.00	161.29
% from internal consumption (%)	10.3	4.3	0.8
1.1. Sales on regulated contracts			
traded volume (GWh)	**4152**	**1741**	
average price (lei/MWh)	136.90	121.12	-
% from internal consumption (%)	7.9	3.2	
1.2. Sales on negotiated contracts[1)]			
traded volume (GWh)	**1283**	**66**	**438**
average price (lei/MWh)	144.67	158.93	161.29
% from internal consumption (%)	2.4	1.1	0.8
2. EXPORT			
traded volume (GWh) [2)]	**8587**	**6548**	**5479**
average price (lei/MWh)	155.58	189.70	193.66
% from internal consumption (%)	16.2	12.0	9.8
3. CENTRALIZED MARKETS OF BILATERAL CONTRACTS			
traded volume (GWh)	**65337**	**59829**	**67005**
average price (lei/MWh)	157.62	170.69	199.06
% from internal consumption	123.5	109.6	120.2
3.1. Extended auction mechanism CMBC-EA[3)]			
traded volume (GWh)	**21729**	**22821**	**22736**
average price (lei/MWh)	155.90	165.97	187.97
% from internal consumption	24.0	41.8	40.08
3.2. Continuous negotiation mechanism CMBC-CN [3)]			
traded volume (GWh)	**12718**	**11474**	**15273**
average price (lei/MWh)	155.90	175.17	205.62
% from internal consumption	24.0	21.0	27.4
3.3. CM-OTC mechanism [3)]			
traded volume (GWh)	**30890**	**25534**	**28996**
average price (lei/MWh)	157.80	172.89	204.30
% from internal consumption	58.4	46.8	52.0
4. CENTRALIZED MARKET FOR UNIVERSAL SERVICE - CMUS			
traded volume (GWh)	**8046**	**5601**	**2208**
average price (lei/MWh)	162.94	187.01	238.98
% from internal consumption	15.2	10.3	4.0
5. DAY AHEAD MARKET			
traded volume (GWh)	**25810**	**24716**	**23541**
average price (lei/MWh) [4)]	149.74	219.95	216.16
% from internal consumption	48.8	45.3	42.2
6. INTRADAY MARKET			
traded volume (GWh)	**131**	**152**	**158.99**
average price (lei/MWh) [5)]	126.12	178.85	105.89
% from internal consumption	2.5	0.3	0.3
7. BALANCING MARKET			
traded volume (GWh)	**4001**	**4497**	**3305**
% from internal consumption	7.6	8.2	5.9
upward volume (GWh)	**2700**	**3177**	**1897**
average price for negative imbalance (lei/MWh)	272.19	336.19	401.67
downward volume (GWh)	**1301**	**1320**	**1409**
average price for positive imbalance (lei/MWh)	23.42	59.33	34.48
INTERNAL CONSUMPTION (GWh) **(*distribution and transmission losses included*)**	**52891**	**54590**	**55762**

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 avereage 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 287.26 lei/MWh in December 2018, 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 differences from the Electricity Market Monitoring Report for the month of November 2017 are determined by the inclusion of corrected data sent by the market participants.*

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.

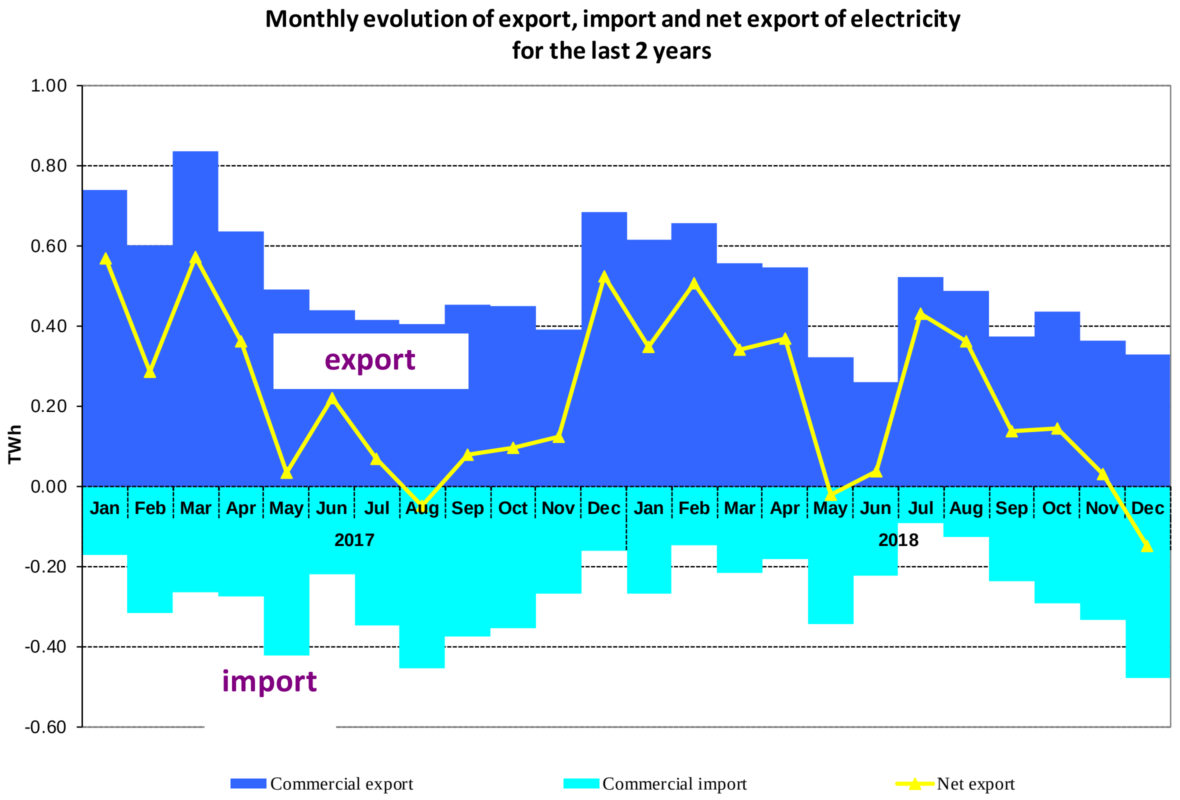
The following graph presents the evolution, starting with January 2014, of the relation between the volumes sold on each market and the estimated internal consumption.



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 negociated 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:



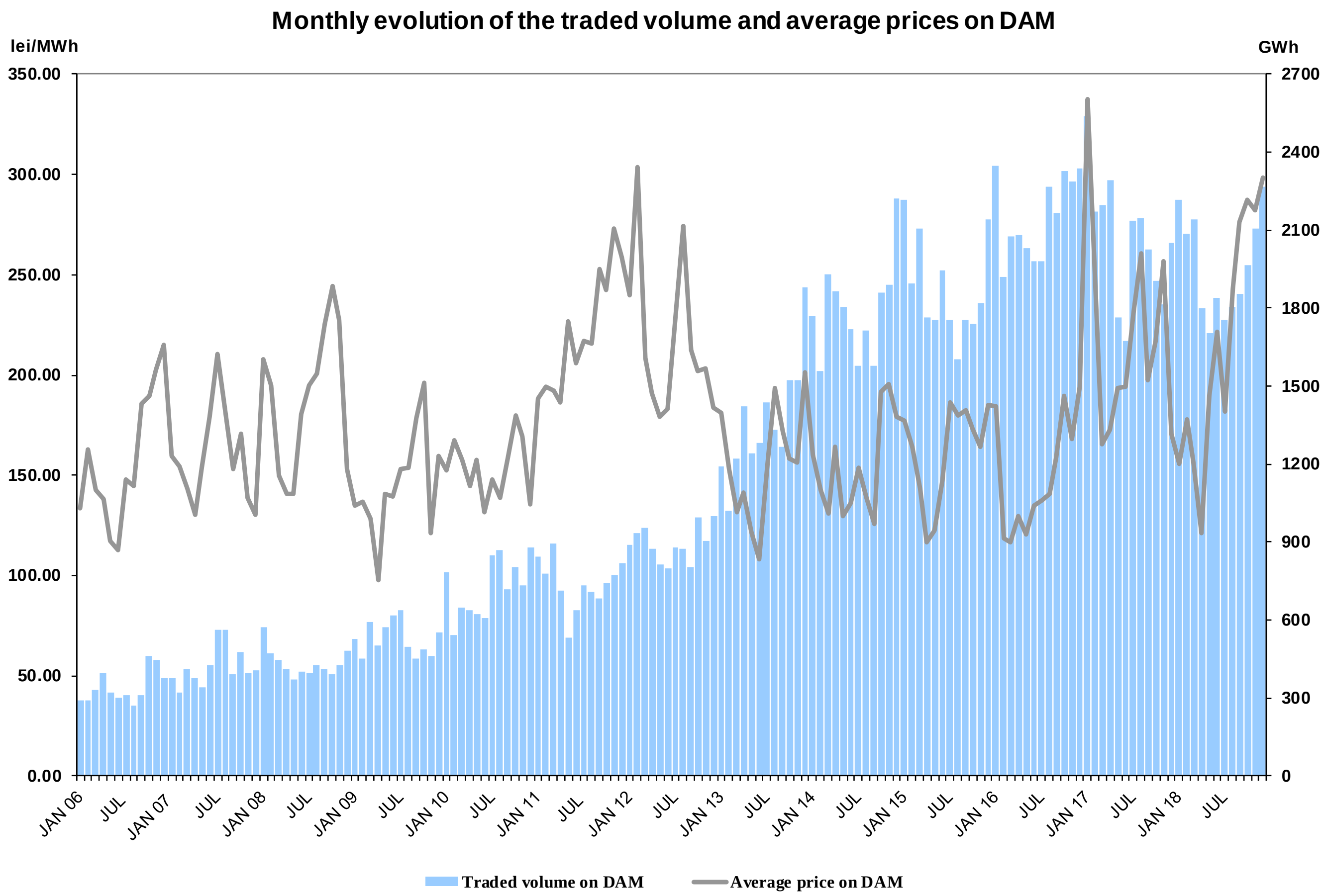
Source: Monthly reports of CNTEE Transelectrica SA – Electricity Market Monitoring Unit assessment

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	**November 2018**	**December 2018**	**December 2017**
Export			
traded volume (GWh)	**366**	**331**	**685**
average price (lei/MWh)	246.50	245.95	166.81
% from internal consumption	7.5	6.3	13.8
of which, through coupled DAM			
traded volume (GWh)	**113**	**61**	**124**
average price (lei/MWh)	223.55	214.73	139.99
% from internal consumption	2.3	1.2	2.5
Import			
traded volume (GWh)	**334**	**478**	**160**
average price (lei/MWh)	305.41	322.47	204.31
% from internal consumption	6.9	9.1	3.2
of which, through coupled DAM			
traded volume (GWh)	**113**	**177**	**101**
average price (lei/MWh)	344.65	354.63	192.14
% from internal consumption	2.3	3.4	2.0

Import/Export Trades	**2016**	**2017**	**2018**
Export			
traded volume (GWh)	**8587**	**6548**	**5479**
average price (lei/MWh)	155.58	189.70	193.65
% from internal consumption	16.2	12.0	9.8
of which, through coupled DAM			
traded volume (GWh)	**717**	**804**	**1399**
average price (lei/MWh)	143.57	178.25	180.23
% from internal consumption	1.4	1.5	2.5
Import			
traded volume (GWh)	**3570**	**3654**	**2934**
average price (lei/MWh)	149.81	242.53	248.66
% from internal consumption	6.8	6.7	5.3
of which, through coupled DAM			
traded volume (GWh)	**2249**	**2031**	**1123**
average price (lei/MWh)	150.82	252.70	253.40
% from internal consumption	4.3	3.7	2.0

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



Source: Monthly reports of Opcom SA and CNTEE Transelectrica 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 December 2018 is presented in the following table:

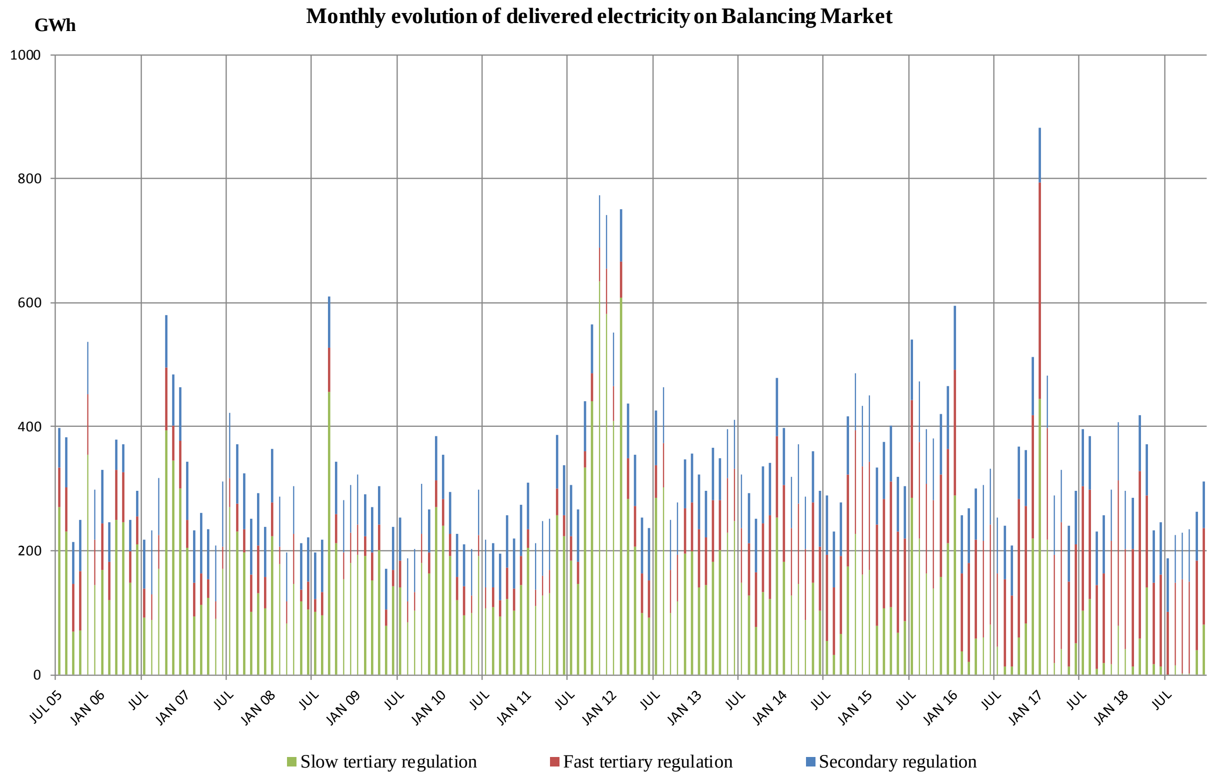
December 2018	Dispach order (GWh)	Delivered electricity (GWh)	Deviation (%)
Secondary regulation	**74**	**74**	
upward	38	38	
downward	36	36	
Fast tertiary regulation	**161**	**156**	**4**
upward	113	110	2
downward	48	45	7
Slow tertiary regulation	**82**	**81**	**1**
upward	82	81	1
downward	0	0	0
TOTAL	**318**	**311**	
upward	233	229	
downward	85	82	
INTERNAL CONSUMPTION		**5256**	
% share of traded volumes from internal consumption		***5.9%***	

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

YEAR 2018	Dispach order (GWh)	Delivered electricity (GWh)	Deviation (%)
Secondary regulation	**995**	**995**	
upward	467	467	
downward	528	528	
Fast tertiary regulation	**1984**	**1884**	**5**
upward	1247	1213	3
downward	737	671	9
Slow tertiary regulation	**436**	**427**	**2**
upward	222	217	2
downward	215	209	0
TOTAL	**3416**	**3305**	
upward	1935	1897	
downward	1480	1409	
INTERNAL CONSUMPTION		**55762**	
% share of traded volumes from internal consumption		***5.9%***	

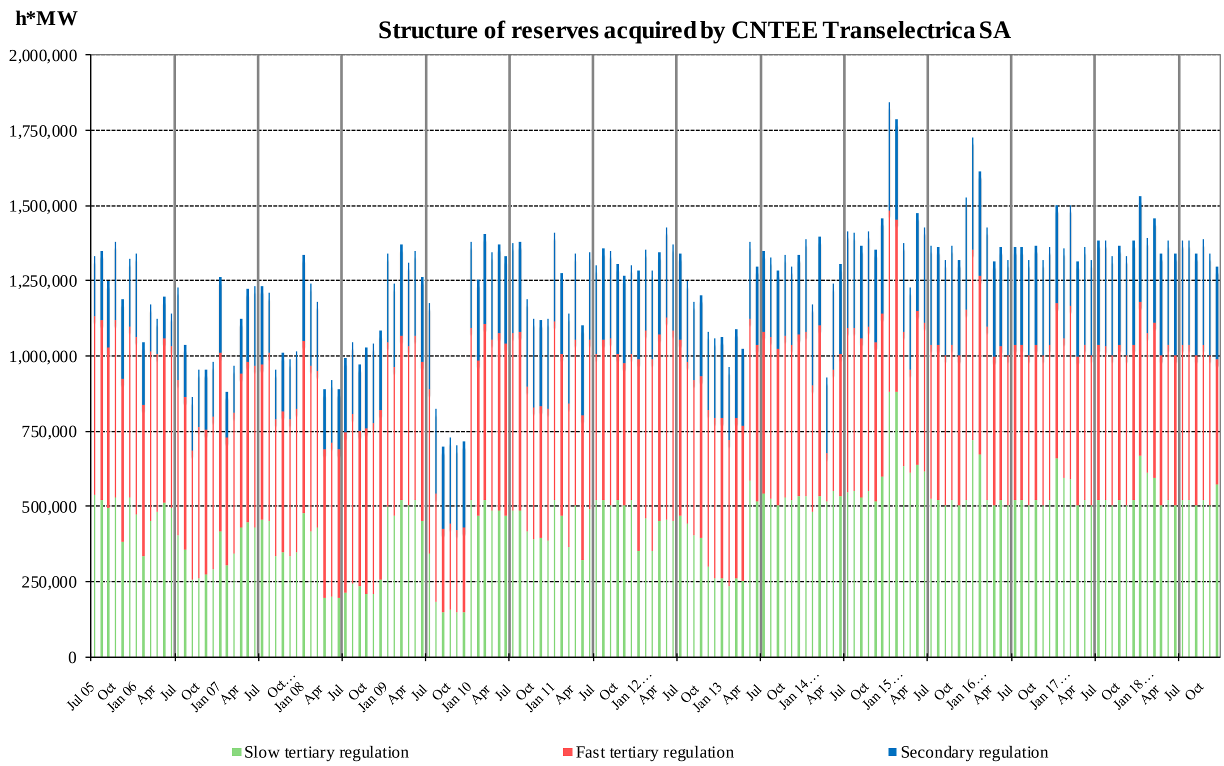
Source: Monthly reports of CNTEE Transelectrica SA – Electricity Market Monitoring Unit assessment

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:



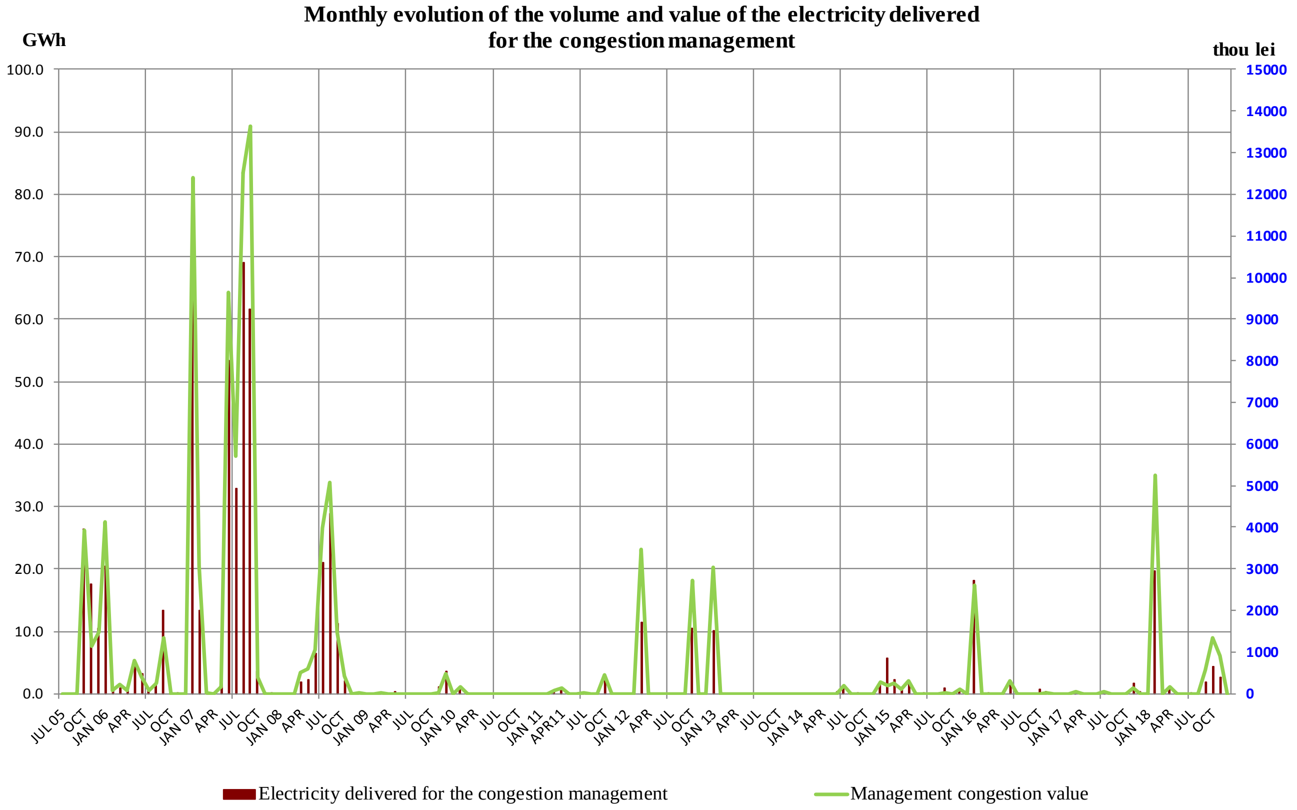
Source: Monthly reports of CNTEE Transelectrica SA – Electricity Market Monitoring Unit assessment

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 Transelectrica S.A. for the period of July 2005 - December 2018:



Source: Monthly reports of CNTEE Transelectrica 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 December 2018, compared with the similar period of 2017, the structure of electricity sale obligations contracted before the delivery interval by the electricity generators with dispatchable units was the following:

-GWh-

Trade type	December 2017	December 2018	Year 2017	Year 2018
Regulated contracts, to suppliers of last resort - hydro producer	78.11	0.00	1131.85	-
Regulated contracts, to suppliers of last resort - nuclear	27.15	0.00	609.46	-
Negotiated contracts, to suppliers	58.52	37.98	615.50	438.11
Contracts concluded on the Opcom centralized markets:	3535.85	3925.85	34977.65	43770.77
CMBC-EA	*2316.53*	*1881.91*	*19287.22*	*20717.01*
CMBC-CN	*470.10*	*961.20*	*6952.12*	*10552.65*
CM-OTC	*749.22*	*1082.74*	*8738.31*	*12501.12*
CMUS	323.08	81.83	3576.10	1707.41
DAM	1434.73	1273.57	16177.12	14441.87
ID	5.72	6.12	59.66	70.40
Supply contracts to final customers, from which:	495.92	425.43	5330.78	5151.36
Households	*0.60*	*0.55*	*5.20*	*5.14*
Non-households	*495.32*	*424.89*	*5325.58*	*5146.22*
Total	**5959.08**	**5750.78**	**62478.11**	**65579.92**

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

Suppliers

In December 2018, on the electricity market there were active 99 undertakings having as the main activity that of electricty supply; out of these, 31 are suppliers that only operate on the wholesale electricity market (some of which have electricity trader license) and 68 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 December 2018 compared with similar period of 2017 for the suppliers acting exclusively on WEM, acquisitions and sales being split by categories of markets and market participants:

-GWh-

Structure of trades of suppliers acting exclusively on WEM	**December 2017**	**December 2018**	**Year 2017**	**Year 2018**
Buy				
Import	51.56	285.61	1526.47	1606.46
Negotiated trades with producers	0.00	15.86	0.00	76.02
Contracts concluded on Opcom centralized markets, out of which:	1043.47	1376.70	13859.90	14122.69
- *on CMBC-EA with producers*	*254.46*	*94.19*	*2451.58*	*1024.99*
- *on CMBC-CN with producers*	*89.27*	*216.91*	*2857.03*	*2213.78*
- *on CM-OTC with producers*	*312.05*	*600.86*	*3337.25*	*5973.90*
- *on CMBC-EA with other suppliers*	*0.00*	*0.00074*	*0.49*	*135.26*
- *on CMBC-CN with other suppliers*	*37.69*	*11.16*	*396.73*	*276.96*
- *on CM-OTC with other suppliers*	*350.00*	*453.58*	*4816.83*	*4497.80*
DAM	*630.80*	*356.85*	*4221.29*	*4374.70*
ID	0.23	0.93	9.63	13.44

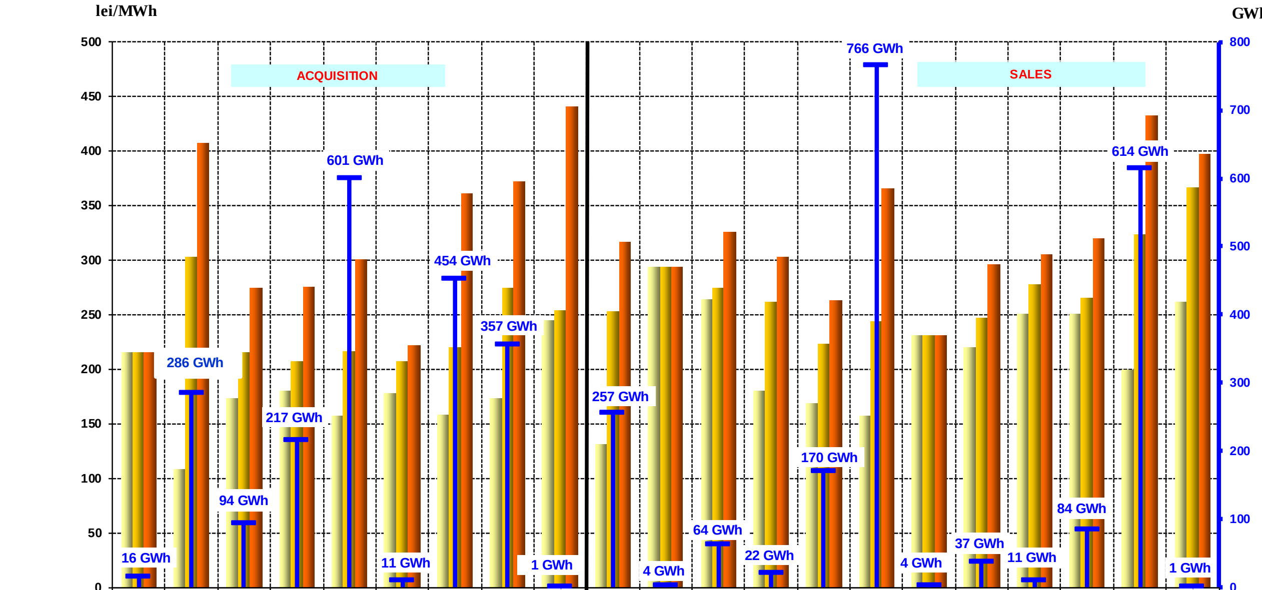
Structure of trades of suppliers acting exclusively on WEM	**December 2017**	**December 2018**	**Year 2017**	**Year 2018**
Sell				
Export	450.07	256.90	4578.81	3761.94
Contracts concluded on Opcom centralized markets:	1082.90	1077.58	10718.43	11155.26
- *on CMBC-EA with producers*	0.00	0.00	0.00	10.41
- *on CMBC-CN with producers*	*0.00*	3.72	*365.51*	29.80
- *on CM-OTC with producers*	*0.00*	*63.89*	*450.66*	*454.86*
- *on CMBC-EA with other suppliers*	*3.72*	*21.67*	*357.25*	*153.37*
- *on CMBC-CN with other suppliers*	*314.16*	*170.38*	*2059.37*	*2019.08*
- *on CM-OTC with other suppliers*	*620.05*	*765.85*	*6942.94*	*7967.46*
on CMBC-EA with DO	*11.15*	*3.72*	*32.78*	*36.75*
- *on CMBC-CN with DO*	*118.94*	*37.19*	*237.16*	*354.09*
- *on CM-OTC with DO*	*14.88*	*11.17*	*219.80*	*129.45*
on CMBC-EA with OTS	*0.00*	*0.00*	*52.97*	*0.00*
CMUS with last resort suppliers	134.85	84.32	1264.44	394.80
DAM	58.35	614.14	3019.83	4882.53
ID	2.48	1.42	46.31	22.43

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

Note: Data in the table also include the negotiated trades with producers reported by a market participant that during January-May 2018 was active on the REM.

The breakdown by types of sources/destination of the traded volumes, and of the minimum, average and maximum prices from December 2018 and Year 2018 by suppliers acting exclusively on WEM are represented graphically below:

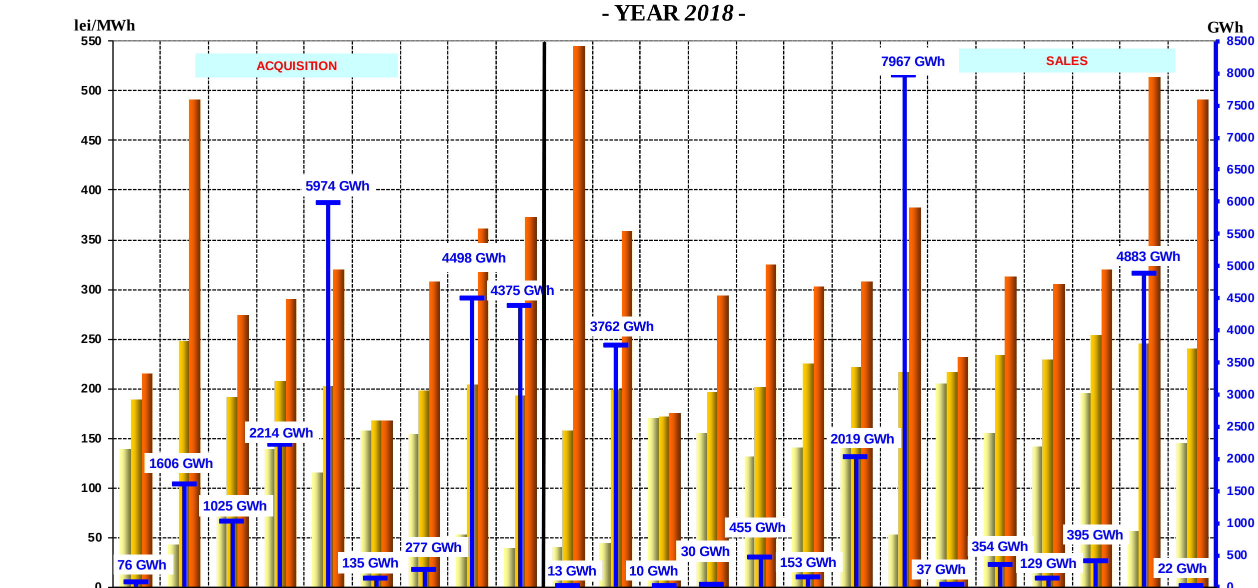
Trades concluded by suppliers acting exclusively on WEM
- December 2018 -



	negotiated contracts with generators	import	CMBC with generators	CMBC-CN with generators	CM-OTC with generators	CMBC-CN with suppliers	CM - OTC with suppliers	DAM	Intra-Day	export	CMBC - NC with generators	CM - OTC with generators	CMBC with suppliers	CMBC-NC with suppliers	CM - OTC with suppliers	CMBC with DSO	CMBC - NC with DSO	CM - OTC with DSO	contracts on CMUS platforms	DAM	Intra-Day
Min price	215.61	108.07	173.74	179.63	157.51	177.58	158.33	173.73	244.95	131.13	294.00	264.63	180.38	168.13	157.33	231.40	220.13	250.75	250.50	199.50	262.20
Weighted average price	215.61	303.12	215.40	206.91	216.36	207.28	220.25	274.10	253.66	253.00	294.00	274.95	261.87	223.74	244.12	231.40	247.17	278.31	265.78	323.61	366.32
Max price	215.61	407.07	273.85	275.13	300.00	222.13	361.00	372.47	440.38	315.94	294.00	325.00	302.32	262.57	365.00	231.40	296.00	305.00	320.00	432.19	397.76
Traded volume	15.86	285.61	94.19	216.91	600.86	11.16	453.58	356.85	0.93	256.90	3.72	63.89	21.67	170.38	765.85	3.72	37.19	11.17	84.32	614.14	1.42

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

Trades concluded by suppliers acting exclusively on WEM
- YEAR *2018* -



	negotiated contracts with generators	import	CMBC with generators	CMBC-CN with generators	CM-OTC with generators	CMBC with suppliers	CMBC-CN with suppliers	CM - OTC with suppliers	DAM	Intra-Day	export	CMBC with generators	CMBC - NC with generators	CM - OTC with generators	CMBC with suppliers	CMBC-NC with suppliers	CM - OTC with suppliers	CMBC with DSO	CMBC - NC with DSO	CM - OTC with DSO	contracts on CMUS platforms	DAM	Intra-Day
Min price	139.05	42.48	82.52	139.05	115.00	157.99	154.00	53.00	39.63	40.00	44.25	170.00	155.00	131.00	140.20	145.03	53.00	204.65	155.00	141.00	195.00	57.30	145.45
Weighted average price	189.63	247.50	191.46	208.12	202.87	167.33	198.12	204.11	192.99	158.08	198.78	171.48	196.45	201.39	225.73	221.48	216.20	216.24	234.52	228.67	254.23	245.44	239.76
Max price	215.61	491.39	273.85	290.00	320.03	168.39	308.00	361.00	372.47	545.00	359.33	175.20	294.00	325.00	302.32	308.00	382.00	231.40	312.00	305.00	320.00	514.10	491.21
Traded volume	76.02	1,606.46	1,024.99	2,213.78	5,973.90	135.26	276.96	4,497.80	4,374.70	13.44	3,761.94	10.41	29.80	454.86	153.37	2,019.08	7,967.46	36.75	354.09	129.45	394.80	4,882.53	22.43

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 December 2018 and Year 2018, compared with the similar period of 2017:

-GWh -

Structure of trades of suppliers acting on REM (suppliers of last resort not included)	**December 2017**	**December 2018**	**Year 2017**	**Year 2018**
Buy				
Import	7.67	15.82	96.92	204.93
Negotiated contracts with producers	60.65	24.94	632.73	401.29
Contracts concluded on Opcom centralized markets:	2422.86	2148.42	26213.15	25600.52
- *on CMBC-EA with* producers	*1186.63*	*995.02*	*10560.22*	*11781.83*
- *on CMBC-CN with* producers	*118.41*	*355.67*	*2473.56*	*3920.12*
- *on CM-OTC with* producers	*237.52*	*197.19*	*3082.13*	*2827.74*
- *on CMBC-EA with other suppliers*	*64.51*	*70.52*	*1321.05*	*801.11*
- *on CMBC-CN with other suppliers*	*187.67*	*111.48*	*1455.18*	*1171.15*
- *on CM-OTC with other suppliers*	*628.12*	*418.53*	*7321.01*	*5098.56*
Negociated contracts with non-dispatchable producers (others than under Law 220/2008)*	8.62	3.23	119.30	91.93
Negociated contracts with non-dispatchable producers (amendments and additions to Law 220/2008)**	18.35	8.56	329.14	265.43
DAM	290.15	340.70	4813.63	4440.96
ID	9.37	4.79	75.36	100.21

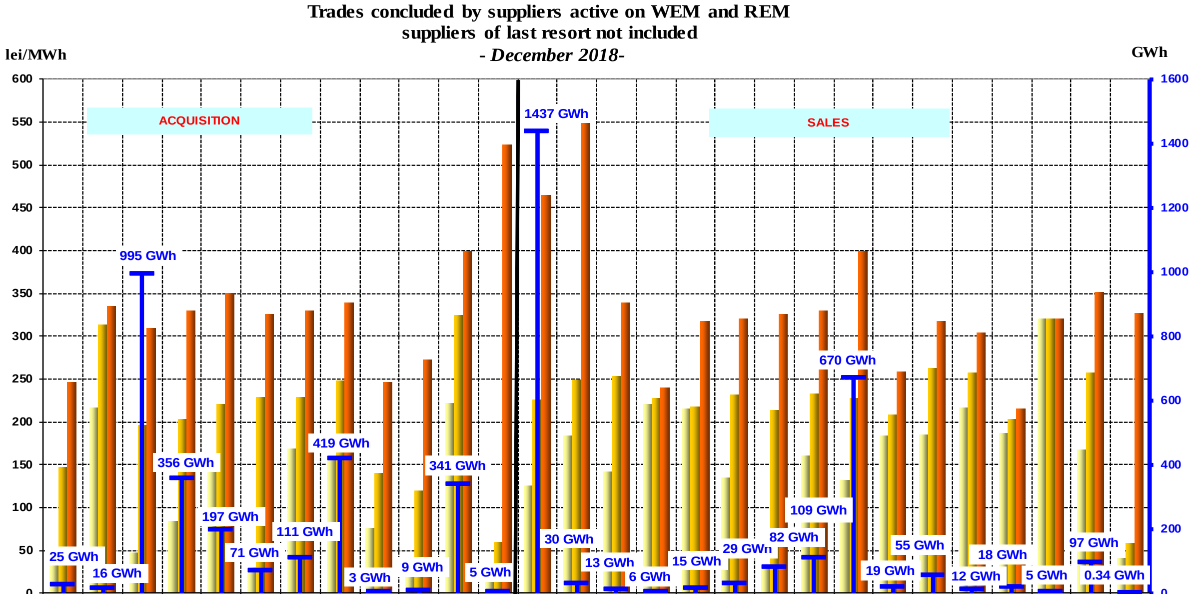
*Note: *negotiated trades concluded with non-dispatchable producers that do not comply with the requirements of Law no. 184/2018 (under 3 MWh threshold) for the approval of EGO no. 24/2017 regarding the amendment and supplementation of Law no. 220/2008*

*** 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*

Structure of trades of suppliers acting on REM (not including suppliers of last resort)	**December 2017**	**December 2018**	**Year 2017**	**Year 2018**
Sell				
Export	110.76	13.01	1166.25	317.93
-Negotiated trades with other suppliers	0.61	0.00	0.61	0.00
Contracts concluded on Opcom centralized markets:	*1194.31*	1014.23	13152.03	11570.75
- *on CMBC-EA with producers*	*45.84*	*5.57*	*368.87*	*85.95*
- *on CMBC-NC with producers*	*8.93*	*14.88*	*195.05*	*257.75*
- *on CM-OTC with producers*	*0.00*	*29.26*	*179.49*	*309.37*
- *on CMBC-EA with other suppliers*	*76.40*	*82.32*	*1175.93*	*1187.96*
- *on CMBC-NC with other suppliers*	*166.23*	*108.51*	*1578.24*	*1612.54*
- *on CM-OTC with other suppliers*	*725.08*	*669.70*	*8027.78*	*7089.16*
- *on CMBC-EA with DO*	*113.25*	*18.60*	*1353.17*	*310.32*
- *on CMBC-NC with DO*	*39.61*	*55.11*	*81.61*	*444.60*
- *on CMBC-OTC with OD*	*0.00*	*11.90*	*0.00*	*27.88*
- *on CMBC-EA with TSO*	*18.60*	*18.38*	*186.84*	*243.06*
- *on CMBC-NC with TSO*	*0.37*	*0.00*	*5.04*	*2.18*
CMUS with last resort suppliers	*70.68*	*4.96*	*760.78*	*105.81*
DAM	261.69	97.02	2478.14	1739.12
ID	1.10	0.34	11.53	13.95
Household customers	20.54	30.56	174.69	288.49
Non-household customers	1144.91	1436.65	14839.12	17253.70

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

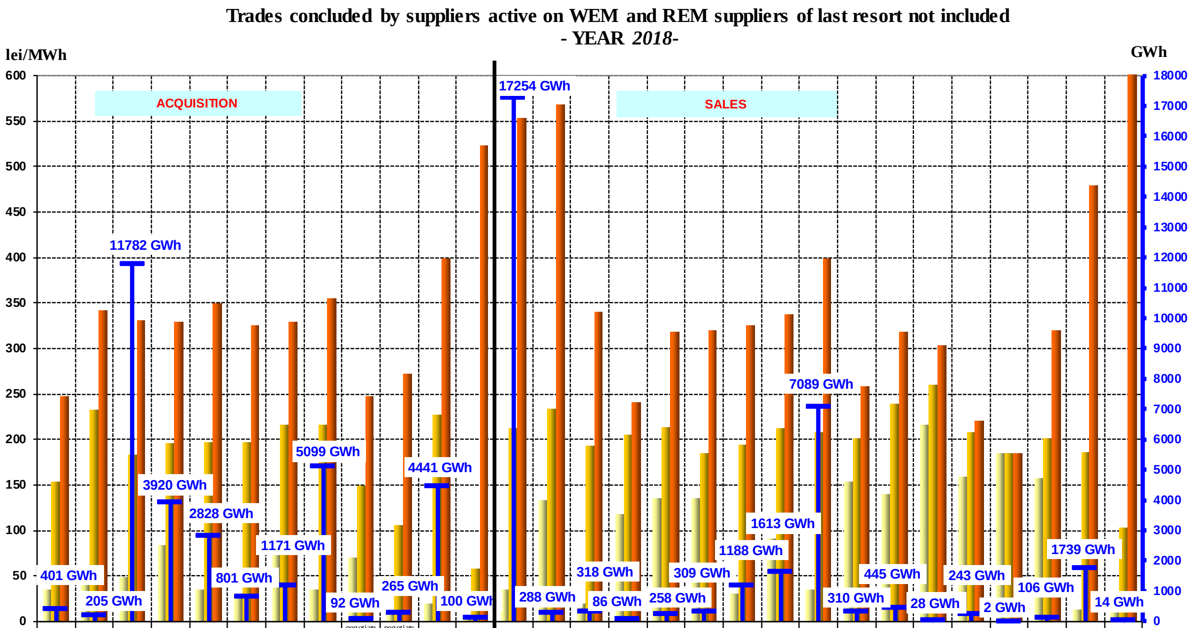
The breakdown by types of sources/destinations of the volumes traded, and of the average and extreme prices (highest and lowest) for the month of December 2018, and respectively for the Year 2018 for suppliers active on the REM and WEM are shown in the following graph:



	negotiated contracts with generators	import	CMBC with generators	CMBC-CN with generators	CM-OTC with generators	CMBC with suppliers	CMBC-CN with suppliers	CM - OTC with suppliers	negotiated contracts with non-dispatchable generators (other L23/2014)	negotiated contracts with non-dispatchable generators (L23/2014)	DAM	Intra-Day
Min price	35.00	216.41	47.63	84.13	155.33	30.00	168.13	157.33	76.29	35.81	222.00	19.07
Weighted average price	146.88	312.77	196.09	203.26	221.13	228.51	228.20	247.44	140.73	119.41	323.88	59.81
Max price	246.88	335.65	309.59	329.00	350.00	325.33	329.00	339.50	246.87	271.98	399.32	523.45
Traded volume	24.94	15.82	995.02	355.67	197.19	70.52	111.48	418.53	3.23	8.56	340.70	4.79

	contracts with industrial customers	contracts with household consumers	export	CMBC with generators	CMBC - NC with generators	CM - OTC with generators	CMBC with suppliers	CMBC-NC with suppliers	CM - OTC with suppliers	CMBC with DSO	CMBC - NC with DSO	CM - OTC with DSO	CMBC with TSO	contracts on CMUS platforms	DAM	Intra-Day
Min price	125.00	184.23	142.16	220.13	215.13	135.13	30.00	160.13	132.23	183.17	185.13	216.13	186.12	320.02	167.67	40.00
Weighted average price	226.12	248.89	253.40	226.77	217.40	231.43	213.53	232.62	226.85	208.03	262.75	257.31	203.32	320.02	258.07	58.72
Max price	463.96	566.28	339.60	240.13	318.00	320.00	325.33	329.00	398.60	258.81	318.00	304.00	215.13	320.02	351.39	327.34
Traded volume	1,436.65	30.56	13.01	5.57	14.88	29.26	82.32	108.51	669.70	18.60	55.11	11.90	18.38	4.96	97.02	0.34

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



	negotiated contracts with generators	import	CMBC with generators	CMBC-CN with generators	CM-OTC with generators	CMBC with suppliers	CMBC-CN with suppliers	CM - OTC with suppliers	negotiated contracts with non-dispatchable generators (other L23/2014)	negotiated contracts with non-dispatchable generators (L23/2014)	DAM	Intra-Day
Min price	35.00	41.14	47.50	84.00	34.00	30.00	90.20	35.00	69.93	10.00	20.00	5.16
Weighted average price	153.89	232.19	183.74	195.71	196.65	197.21	215.73	216.16	148.54	105.43	226.28	57.09
Max price	247.33	341.70	330.63	329.00	350.00	325.33	329.00	355.00	247.32	272.00	399.32	523.45
Traded volume	401.29	204.93	11,781.83	3,920.12	2,827.74	801.11	1,171.15	5,098.56	91.93	265.43	4,440.96	100.21

	contracts with industrial customers	contracts with household consumers	export	CMBC with generators	CMBC - NC with generators	CM - OTC with generators	CMBC with suppliers	CMBC-NC with suppliers	CM - OTC with suppliers	CMBC with DSO	CMBC - NC with DSO	CM - OTC with DSO	CMBC with TSO	CMBC - NC with TSO	contracts on CMUS platforms	DAM	Intra-Day
Min price	34.56	133.03	20.03	117.20	135.00	135.00	30.00	90.20	35.00	153.92	140.00	216.13	158.93	185.00	157.00	12.83	29.99
Weighted average price	212.13	233.45	192.26	205.75	213.19	185.20	193.95	212.46	208.13	201.24	238.62	259.39	208.43	185.00	201.04	185.88	103.16
Max price	552.58	568.71	339.60	240.13	318.00	320.00	325.33	337.00	398.60	258.81	318.00	304.00	220.13	185.13	320.02	480.00	605.35
Traded volume	17,253.70	288.49	317.93	85.95	257.75	309.37	1,187.96	1,612.54	7,089.16	310.32	444.60	27.88	243.06	2.18	105.81	1,739.12	13.95

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

Suppliers of last resort

The structure of trades on the WEM of suppliers of last resort (made before the delivery interval) to supply final clients that fall under the Universal Service and last resort regime is presented in the table below for December 2018 and Year 2018, compared with the similar period of 2017:

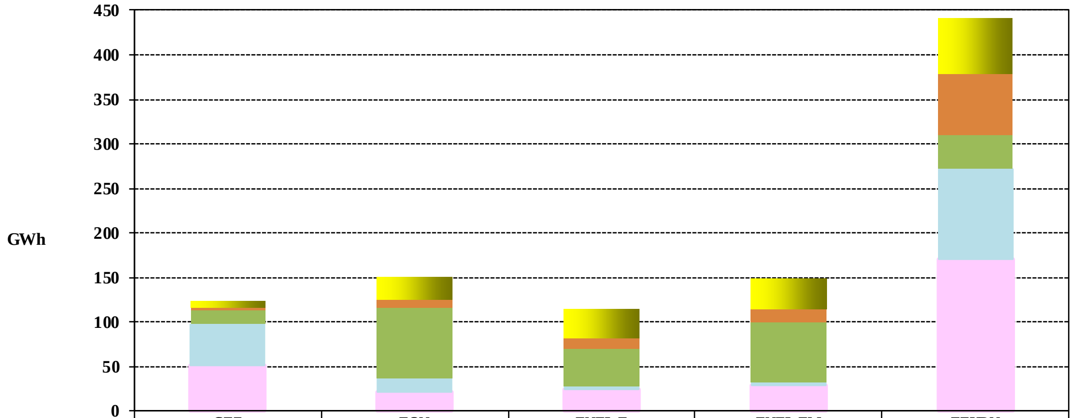
- GWh -

Structure of trades concluded by suppliers of last resort to supply final clients (Universal Service, last resort regime and inactive clients)	**November 2017**	**November 2018**	**Year 2017**	**Year 2018**
Regulated contracts with producers	105.26	-	1741.31	-
Negociated contracts with non-dispatchable producers (changes and additions to Law 220/2008)*	0.01	0.003	0.32	2.70
Contracts concluded on Opcom centralized markets:	254.40	511.95	1313.84	6504.01
- *contracts on CMBC-EA with producers*	70.05	*147.86*	*314.51*	*983.02*
- *contracts on CMBC-CN with producers*	*16.30*	*33.29*	*88.03*	*952.42*
- *contracts on CM-OTC with producers*	*18.91*	*43.10*	*61.24*	*714.86*
- *contracts on CMBC-EA with other suppliers*	*7.52*	*14.31*	*30.41*	*185.61*
- *contracts on CMBC-CN with other suppliers*	*89.29*	*72.34*	*331.31*	*1305.85*
- *contracts on CM-OTC with other suppliers*	*52.32*	*201.06*	*488.34*	*2362.06*
Centralized market for universal service:	528.61	171.11	5601.32	2208.02
- *contracts on CMUS with producers*	323.08	*81.83*	*3576.10*	*1707.41*
- *contracts on CMUS with suppliers*	205.53	*89.28*	*2025.22*	*500.61*
Trades concluded on DAM:	128.56	272.13	3460.26	2015.69
- *buy*	*163.64*	*293.81*	*3649.63*	*2276.85*
- *sell*	*35.07*	*21.68*	*189.37*	*261.16*
Trades concluded on ID:	0.00	0.00026	1.83	0.93
- *buy*	*0.00*	*0.00026*	*3.11*	*0.93*
- *sell*	*0.00*	*0.00*	*1.29*	*0.00*

Note 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*

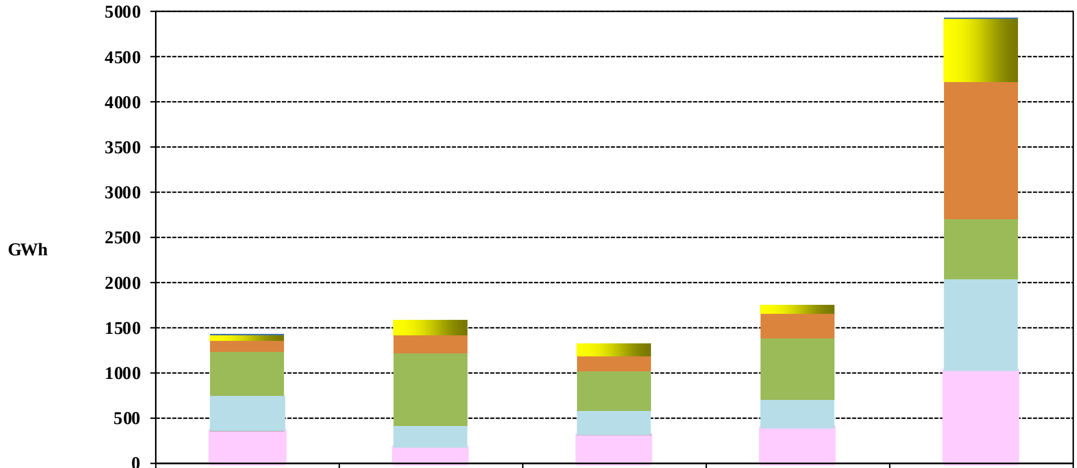
The structure of the electricity bought by the suppliers of last resort for the final clients supplied under Universal Service and last resort regime and for inactive clients for December 2018 is presented in the following graph:

Structure of trades made by suppliers of last resort to supply final clients (Universal Service, last resort regime and inactive clients)
- DECEMBER 2018 -



	CEZ	EON	ENEL E	ENEL EM	EFURN
Purchase on CMBC -EA	8	24	34	33	63
Purchase on CMBC -CN	2	9	11	15	69
Purchase on CM -OTC	16	80	42	68	38
Purchase on CMSU	47	15	4	4	102
Purchase on DAM	50	21	24	28	170

Structure of trades made by suppliers of last resort to supply final clients (Universal Service, last resort regime and inactive clients)
- YEAR 2018 -



	CEZ	EON	ENEL	ENELM	EFURN
Purchase on negociated contracts market	0	0	0	0	3
Purchase on CMBC -EA	62	173	142	96	695
Purchase on CMBC -CN	116	186	170	271	1,516
Purchase on CM -OTC	492	807	432	683	664
Purchase on CMSU	385	234	274	302	1,013
Purchase on IDM	0.43	0.00	0.30	0.20	0.00
Purchase on DAM	359	182	311	397	1,028

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 December 2018, compared with the similar period of 2017:

-GWh-

Structure of trades of suppliers of last resort for universal service supply (obligated/optional supplier of last resort)	December 2017		December 2018		Year 2017		Year 2018	
	Quantity [GWh]	Average price [lei/MWh]	Quantity [GWh]	Average price [lei/MWh]	Quantity [GWh]	Average price [lei/MWh]	Quantity [GWh]	Average price [lei/MWh]
Negociated contracts with non-dispatchable producers (changes and additions to Law 220/2008)*	0.00	-	0.00	-	0.00	-	2.50	213.48
Contracts concluded on Opcom	196.50	230.37	478.79	236.25	964.33	228.29	5989.33	216.30
- *on CMBC-EA with producers*	*62.70*	245.05	*143.69*	*222.31*	*143.69*	*243.30*	*937.68*	*208.62*
- *on CMBC-CN with producers*	*16.22*	*185.77*	*28.74*	*220.08*	*60.38*	*202.55*	*852.48*	*207.53*
- *on CM-OTC with producers*	*15.48*	*249.58*	*39.24*	*247.40*	*51.08*	*256.57*	*661.58*	*205.82*
- *on CMBC-EA with other*	*0.00*	*0.00*	*14.14*	*228.68*	*16.57*	*221.47*	*183.53*	*223.74*
- *on CMBC-CN with other*	*66.94*	*217.66*	*72.17*	*237.31*	*281.75*	*216.42*	*1219.89*	*226.83*
- *on CM-OTC with other*	*35.16*	*240.48*	*180.81*	*247.64*	*410.87*	*209.79*	*2134.14*	*219.76*
Contracts concluded on CMUS:	528.61	234.13	171.11	256.52	5601.32	187.01	2208.02	238.98
- contracts on CMUS with producers	323.08	235.11	*81.83*	*243.12*	*3576.10*	*186.85*	*1707.41*	*237.80*
- contracts on CMUS with suppliers	205.53	232.58	*89.28*	*268.79*	*2025.22*	*187.29*	*500.61*	*242.99*
Trades concluded on DAM:	125.27	-	*241.07*	-	3237.58	-	1774.80	-
- buy	*146.19*	*191.14*	*262.15*	*327.08*	*3125.30*	*244.12*	*2020.63*	*253.55*
- sell	*20.92*	*134.51*	*21.08*	*261.75*	*112.28*	*169.43*	*245.83*	*178.20*
Transactions concluded on ID:	*0.00*	-	*0.00*	-	*0.00*	-	*0.42*	-
- *buy*	*0.00*	-	*0.00*	-	*0.00*	-	*0.42*	*342.61*
- *sell*	*0.00*	-	*0.00*	-	*0.00*	-	*0.00*	-
TOTAL	**850.39**	**228.32**	**890.97**	**266.26**	**9578.67**	**210.01**	**9975.07**	**229.81**

*Note: * trades with non-dispatchable producers that fall under the provisions of Law no. 184/2018 approving EGO no. 24/2017 amending and supplementing 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 December 2018 and Year 2018, compared to the similar period of 2017:

-GWh-

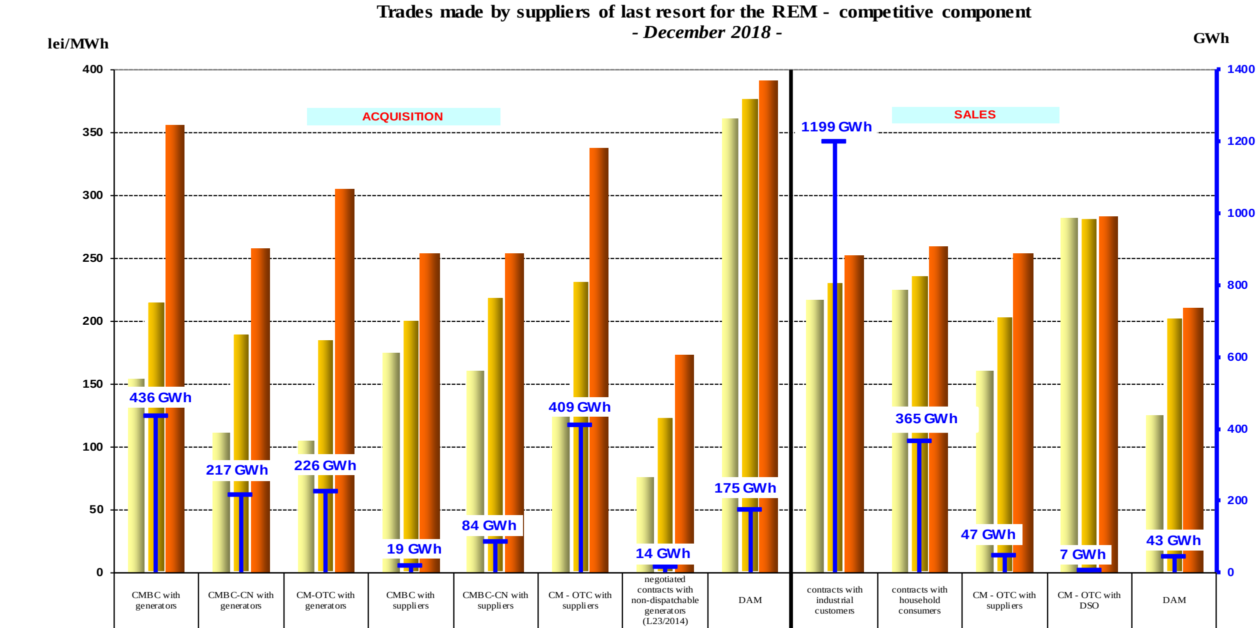
Structure of trades made by suppliers of last resort for the competitive segment of REM	December 2017	December 2018	Year 2017	Year 2018
Buy				
Contracts concluded on Opcom centralized markets:	1499.54	1391.31	12542.05	14408.44
- *on CMBC-EA with producers*	*551.86*	*436.17*	*4209.75*	*4502.96*
- *on CMBC-CN with producers*	*174.74*	*216.68*	*1193.87*	*2519.76*
- *on CM-OTC with producers*	*181.00*	*226.13*	*2184.65*	*2681.34*
- *on CMBC-EA with other suppliers*	*8.09*	*19.16*	*181.23*	*219.14*
- *on CMBC-CN with other suppliers*	*165.73*	*83.91*	*1454.39*	*877.66*
- *on CM-OTC with other suppliers*	*418.10*	*409.26*	*3318.15*	*3607.59*
Negociated contracts with non-dispatchable producers (Law 220/2008)*	*15.24*	*14.25*	*331.02*	7.86
Negociated contracts with non-dispatchable producers (Law 220/2008)**	*0.00*	*0.00*	*0.00*	359.04
Trades on DAM	94.72	175.40	3878.80	2482.24
Trades on ID	0.00	0.02	4.73	1.13
Sell				
Contracts concluded on Opcom centralized markets:	103.42	54.30	980.86	516.82
- *on CMBC-EA with producers*	*0.00*	*0.00*	*5.88*	*0.00*
- *on CMBC-CN with producers*	*0.00*	*0.00*	*0.02*	*0.00*
- *on CMBC-CN with other suppliers*	*0.00*	*0.00*	*0.01*	*0.00*
- *on CM-OTC with other suppliers*	*103.42*	*46.87*	*971.25*	*509.39*
- *on CM-OTC with DO*	*0.00*	*7.43*	*3.72*	*7.43*

Trades on DAM	90.78	43.01	251.45	288.91
Trades on ID	0.00	0.00	0.00	1.19
Household customers	171.51	364.74	1186.41	2822.36
Non-household customers	1232.47	1199.41	14501.15	13856.29

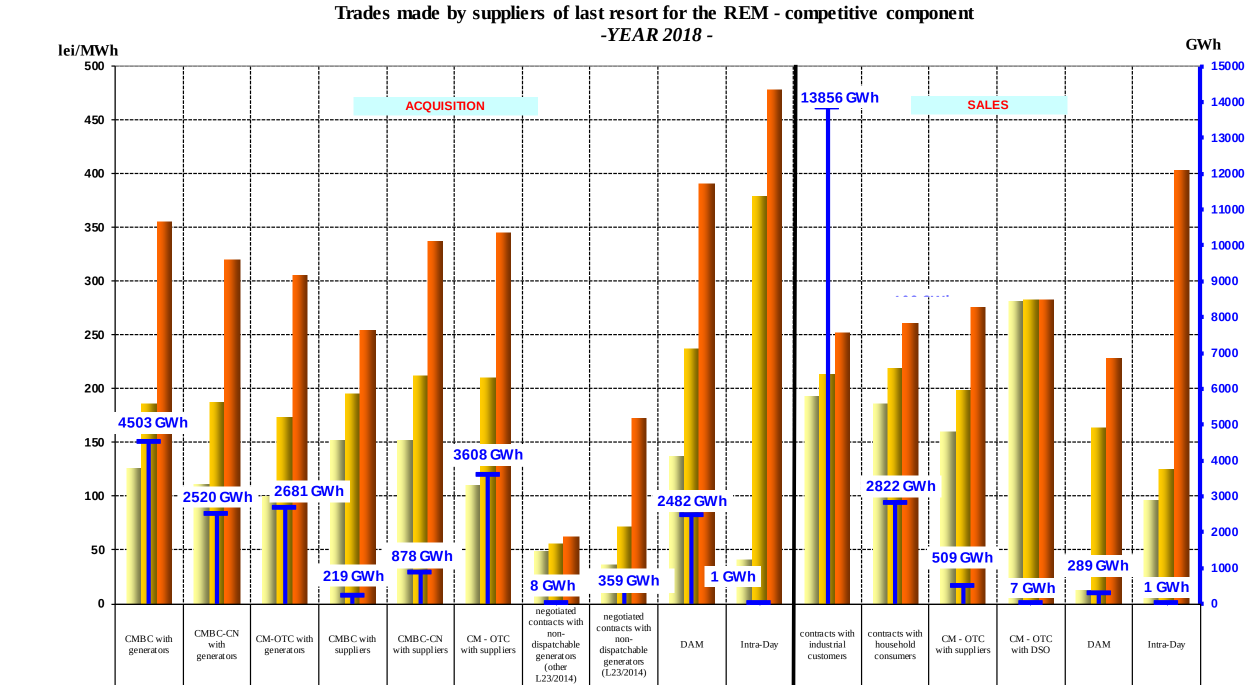
*Note: * negotiated trades with non-dispatchable producers that fall under the provisions of Law no.184/2018 for the approval of EGO no. 24/2017 regarding the amendment and supplementation of Law no. 220/2008*

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 December 2018 and Year 2018:



	CMBC with generators	CMBC-CN with generators	CM-OTC with generators	CMBC with suppliers	CMBC-CN with suppliers	CM - OTC with suppliers	negotiated contracts with non-dispatchable generators (L23/2014)	DAM	contracts with industrial customers	contracts with household consumers	CM - OTC with suppliers	CM - OTC with DSO	DAM
Min price	154.13	111.13	105.14	175.13	160.13	132.23	75.78	360.76	216.54	225.03	160.13	282.00	125.14
Weighted average price	216.04	191.01	186.16	201.96	219.77	232.39	124.18	377.59	231.83	236.89	204.20	282.50	203.53
Max price	355.31	257.13	305.00	253.82	254.13	337.00	172.84	390.83	251.73	259.19	254.13	283.00	209.80
Traded volume	436.17	216.68	226.13	19.16	83.91	409.26	14.25	175.40	1,199.41	364.74	46.87	7.43	43.01



	CMBC with generators	CMBC-CN with generators	CM-OTC with generators	CMBC with suppliers	CMBC-CN with suppliers	CM - OTC with suppliers	negotiated contracts with non-dispatchable generators (other L23/2014)	negotiated contracts with non-dispatchable generators (L23/2014)	DAM	Intra-Day	contracts with industrial customers	contracts with household consumers	CM - OTC with suppliers	CM - OTC with DSO	DAM	Intra-Day
Min price	126.53	111.00	100.00	151.98	152.48	110.00	49.25	36.22	137.61	41.01	192.58	186.75	160.00	282.00	12.96	96.06
Weighted average price	186.53	187.88	173.41	195.74	211.94	209.62	55.91	71.35	237.82	378.75	213.71	219.23	198.29	282.50	163.88	124.73
Max price	355.31	320.00	305.00	253.82	337.00	345.00	62.77	172.84	390.83	478.59	251.73	261.03	276.00	283.00	228.45	402.90
Traded volume	4,502.96	2,519.76	2,681.34	219.14	877.66	3,607.59	7.86	359.04	2,482.24	1.13	13,856.29	2,822.36	509.39	7.43	288.91	1.19

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 December 2018 and Year 2018 respectively, compared with similar previous period:

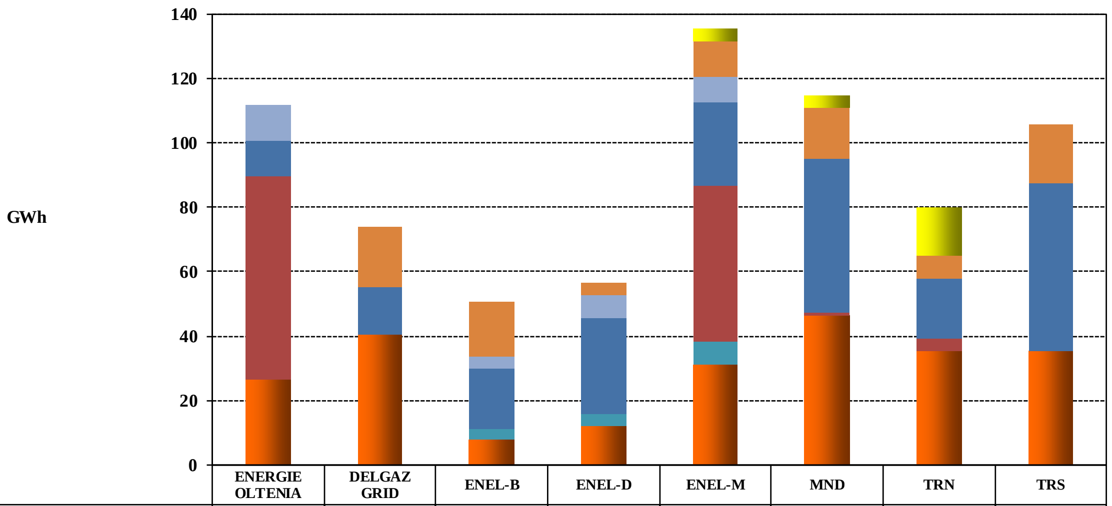
- GWh -

Structure of trades	December 2017	December 2018	Year 2017	Year 2018
Contracts concluded on Opcom centralized markets:	641.01	494.78	4195.74	4463.32
- *CMBC-EA with producers*	*257.65*	*218.23*	*1894.12*	*2395.89*
- *CMBC-CN with producers*	*81.81*	*116.12*	*329.59*	*696.74*
- *CM-OTC with producers*	*3.72*	*15.31*	*43.80*	*60.19*
- *CMBC-EA with suppliers*	*124.40*	*22.32*	*1385.95*	*347.08*
- *CMBC-CN with suppliers*	*158.55*	*92.30*	*318.77*	*798.68*
- *CM-OTC with suppliers*	*14.88*	*30.50*	*223.52*	*164.75*
Trades concluded on DAM	206.92	233.10	1802.09	1380.64
- *buy*	*212.15*	*234.54*	*1820.09*	*1413.57*
- *sell*	*5.24*	*1.44*	*18.00*	*32.93*
Trades concluded on ID:	0.11	0.08	3.73	1.17
- *buy*	*0.11*	*0.08*	*3.40*	*1.17*
- *sell*	*0.00*	*0.00*	*0.33*	*0.00*

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

The electricity bought for covering network losses is presented in detail in the following graph, for December 2018 and Year 2018:

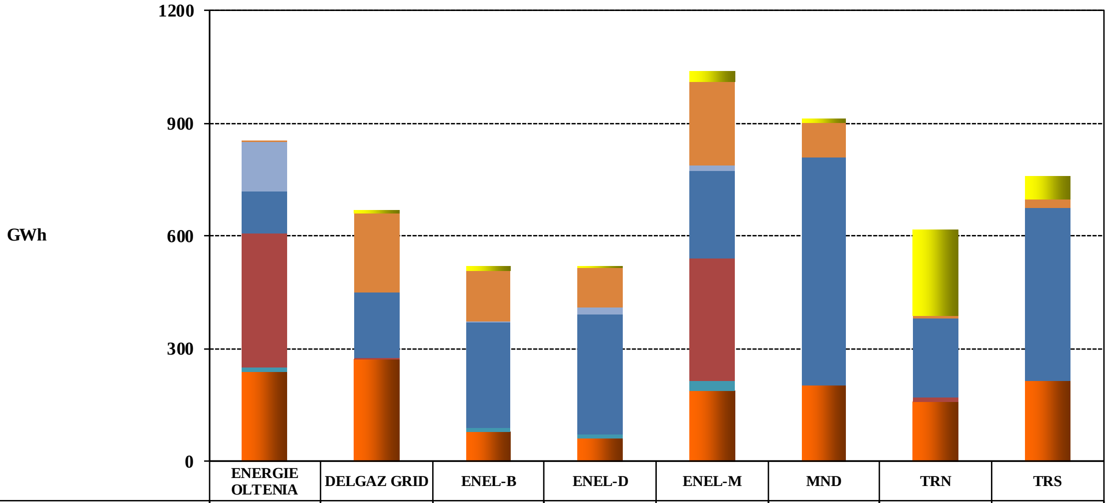
Structure of electricity trades of distribution operators to cover distribution network losses
DECEMBER 2018



	ENERGIE OLTENIA	DELGAZ GRID	ENEL-B	ENEL-D	ENEL-M	MND	TRN	TRS
Acquisition on CMBC-EA on suppliers	0	0	0	0	4	4	15	0
Acquisition on CMBC-NC on suppliers	0	19	17	4	11	16	7	19
Acquisition on CM-OTC on suppliers	11	0	4	7	8	0	0	0
Acquisition on CMBC-EA on generations	11	15	19	29	26	48	19	52
Acquisition on CMBC-NC on generations	63	0	0	0	48	1	4	0
Acquisition on CM-OTC on generations	0	0	4	4	8	0	0	0
Sales on DAM	26	41	8	12	31	46	35	35

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

Structure of electricity trades of distribution operators to cover distribution network losses
- Year 2018 -



	ENERGIE OLTENIA	DELGAZ GRID	ENEL-B	ENEL-D	ENEL-M	MND	TRN	TRS
Acquisition on CMBC-EA on suppliers	0	6	11	0	27	11	230	62
Acquisition on CMBC-NC on suppliers	4	209	134	106	224	91	7	24
Acquisition on CM-OTC on suppliers	129	0	4	18	13	0	0	0
Acquisition on CMBC-EA on generations	113	175	280	317	234	605	212	461
Acquisition on CMBC-NC on generations	355	4	0	0	326	1	11	0
Acquisition on CM-OTC on generations	11	0	13	11	25	0	0	0
Acquisition on ID	0	0	0	0	1	0	0	0
Sales on DAM	240	272	78	62	188	203	157	214

6. Concentration indicators on 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 existance 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 wholesale market (electricity market or ancillary services market) or for each of its components where direct competition takes place.

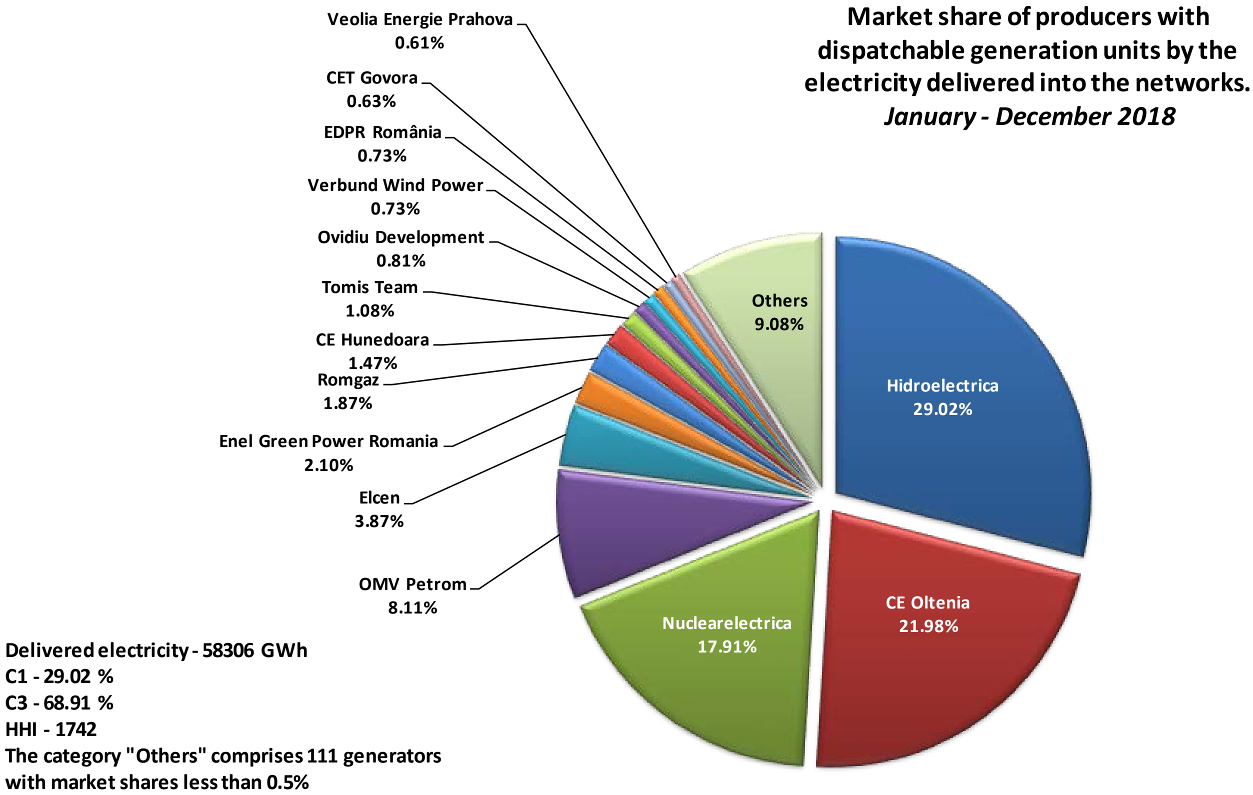
<u>Concentration indicators and market shares of electricity producers</u>

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 December 2018, and the graph presents the market shares of electricity producers with dispatchable generation units for

2018, on all the wholesale market segments and determined based on the electricity delivered into the networks.

Concentration indicators - December 2018 -	C1 (%)	C3 (%)	HHI
Value	22.76	60.08	1410



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 December 2018 and Year 2018:

Structure/concentration indicators of BM - December 2018 -	Regulation					
	Secondary		Fast tertiary		Slow tertiary	
	upward	downward	upward	downward	upward	downward
C1 - % -	73	75	47	59	53	0
C3 - % -	98	99	73	97	98	0
HHI	5771	6072	2715	4647	4335	0

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

Structure/concentration indicators of BM - Year 2018 -	Regulation					
	Secondary		Fast tertiary		Slow tertiary	
	upward	downward	upward	downward	upward	downward
C1 - % -	70	70	73	39	52	73
C3 - % -	97	97	87	94	94	97
HHI	5443	5470	5513	3265	3627	5747

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 December 2018 was done both through competitive and regulated procurement. Pursuant to the provisions of Emergency Government Ordinance No. 26/2018 on the adoption of measures for security of electricity supply, it was approved ANRE President Decision no. 655/2018 on the acquisition at a regulated price for the period from 1 May to 31 December 2018 from CE Hunedoara SA of a quantity of ancillary services representing slow tertiary reserve for a capacity of 400 MW. In addition, CNTEE Transelectrica S.A. organized auctions for the purchase of reserves on all types of regulation.

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

Concentration indicators on Ancillary Services Market - December 2018 -		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)	307300	416411	223200
	C1 (%)	77.4	79.8	51.7
	C3 (%)	99.4	91.7	100.0
	HHI	6435	6462	3922

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

Concentration indicators on Ancillary Services Market - Year 2018 -		Secondary reserve	Fast tertiary reserve	Slow tertiary reserve
regulated component	contracted quantity (h*MW)	34560	34560	3562240
	C1 (%)	100.0	100.0	88.4
	C3 (%)	100.0	100.0	100.0
competitive component	contracted quantity (h*MW)	4046228	5926251	2984720
	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 – Electricity Market Monitoring Unit assessment

Concentration Indicators for the Day Ahead Market

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, by Decision, the confirmation of the right to perform the electricity supply activity or the activity of a trader 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 - December 2018 -	C1 (%)	C3 (%)	HHI
Selling	**23.35**	**44.35**	**923**
Buying	**19.76**	**35.97**	**663**

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 Czech Republic based on the price coupling mechanism, project known as 4M MC. This coordinated corelation mechanism uses an unique 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 to 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 from 1 January 2016). After succesful finalisation of the implementation process of 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 in 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 transmission system operators from the 4 countries and the allocation model to be used is that of implict allocation on DAM of the available interconnection capacity.

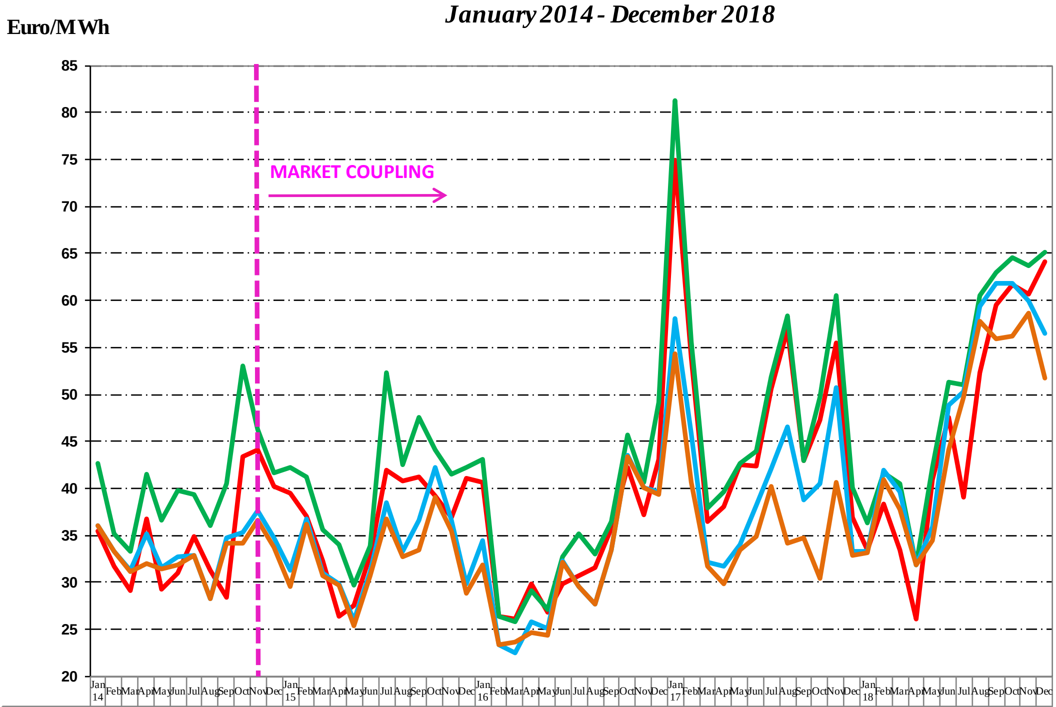
To better meet the purpose of DAM coupling mechanism - electricity transfer at a level and direction determined by the known conditions of generation and consumption and based on the coupled markets prices - starting with 1 January 2016, TSO operators from Romania and Hungary (CNTEE Transelectrica SA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

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

Next graph presents the monthly spot prices of the 4 markets involved in the coupling mechanism starting with 1 January 2014, before and after the start of the operational phase.

Hourly spot prices on the 4 markets functioning in market coupling framework
January 2014 - December 2018



	Jan 14	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
OPCOM	36	32	29	37	29	31	35	31	28	43	44	40
HUPX	43	35	33	42	37	40	39	36	41	53	46	42
OKTE	36	33	31	35	32	33	33	28	35	35	38	35
OTE	36	33	31	32	31	32	33	28	34	34	37	34

	Jan 15	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
OPCOM	40	37	32	26	28	33	42	41	41	39	37	41
HUPX	42	41	36	34	30	34	52	42	48	44	42	42
OKTE	31	37	31	30	26	31	39	33	37	42	37	30
OTE	29	36	31	30	25	31	37	33	33	39	35	29

	Jan 16	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
OPCOM	41	26	26	30	27	30	31	32	36	42	37	43
HUPX	43	26	26	29	27	33	35	33	36	46	41	49
OKTE	34	23	22	26	25	32	29	28	33	44	40	40
OTE	32	23	24	25	24	32	29	28	33	43	40	39

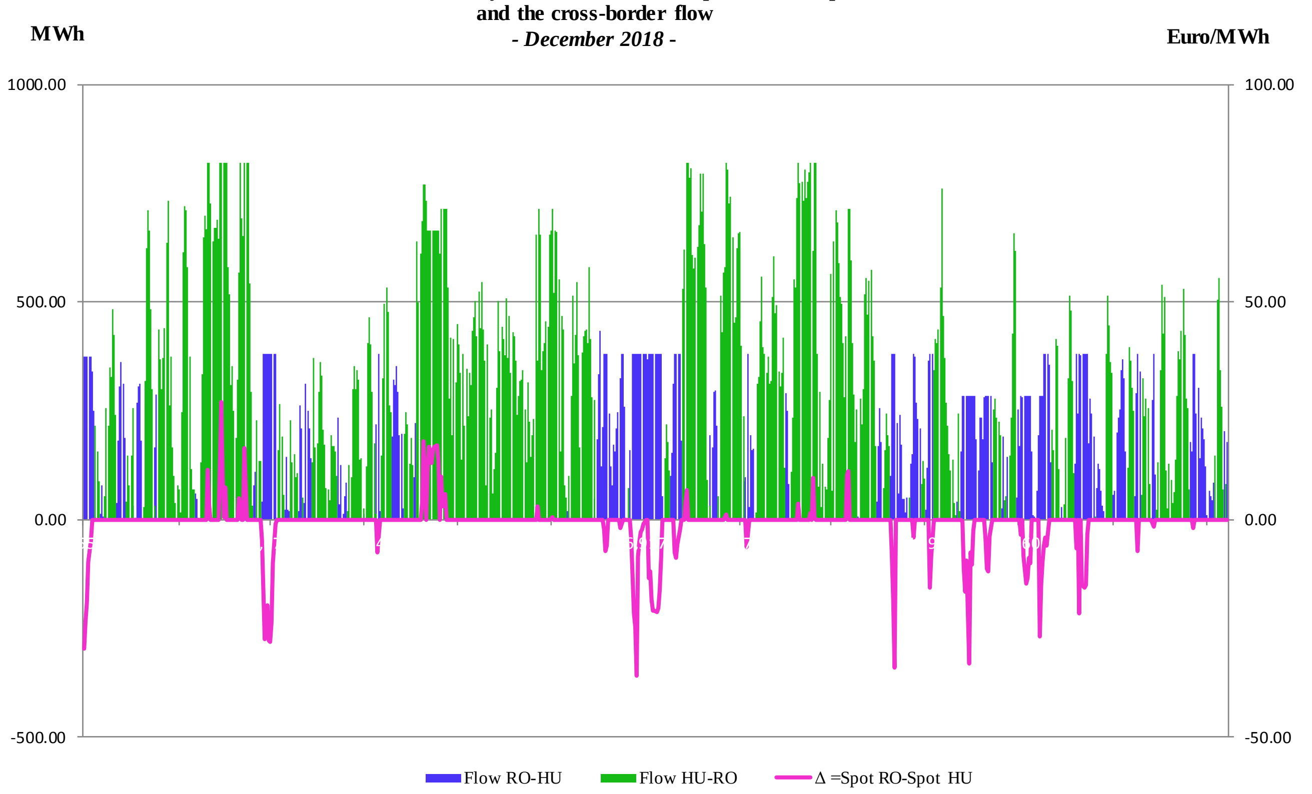
	Jan 17	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
OPCOM	75	54	36	38	43	42	51	57	43	47	55	37
HUPX	81	56	38	40	43	44	52	58	43	50	60	40
OKTE	58	46	32	32	34	38	42	47	39	41	51	33
OTE	54	41	32	30	33	35	40	34	35	30	41	33

	Jan 18	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
OPCOM	33	38	33	26	41	48	39	52	59	62	61	64
HUPX	36	42	40	32	42	51	51	60	63	64	64	65
OKTE	33	42	40	32	36	49	50	59	62	62	60	56
OTE	33	41	38	32	34	44	50	58	56	56	59	52

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

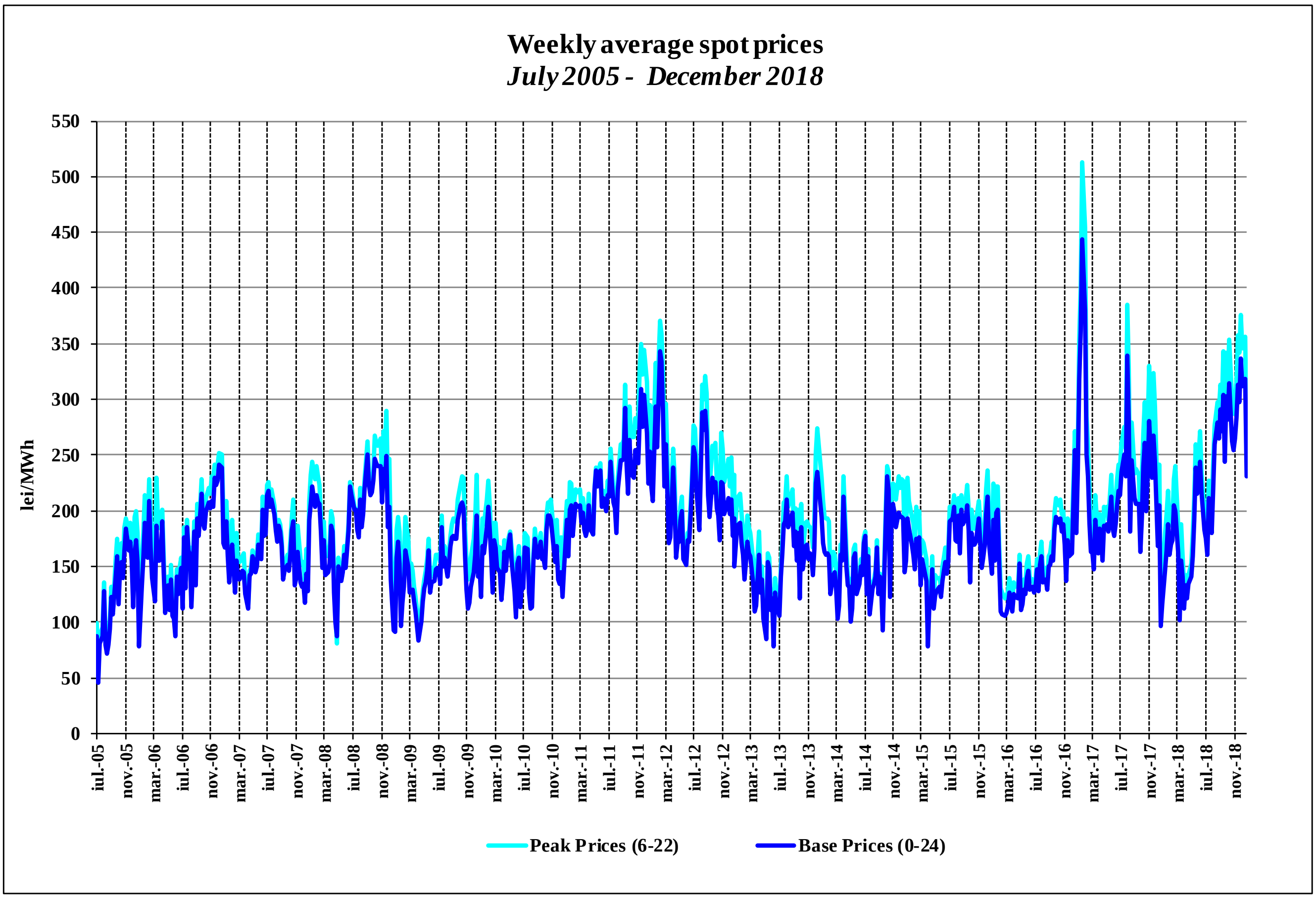
Next, the following graph presents the hourly evolution of the difference between the closing prices of the coupled DAM on the Romanian and Hungarian area, correlated with the cross border flows on the Romanian – Hungarian border, on both directions, for the month of December 2018:

Evolution of the hourly difference between Spot RO and Spot HU
and the cross-border flow
- December 2018 -



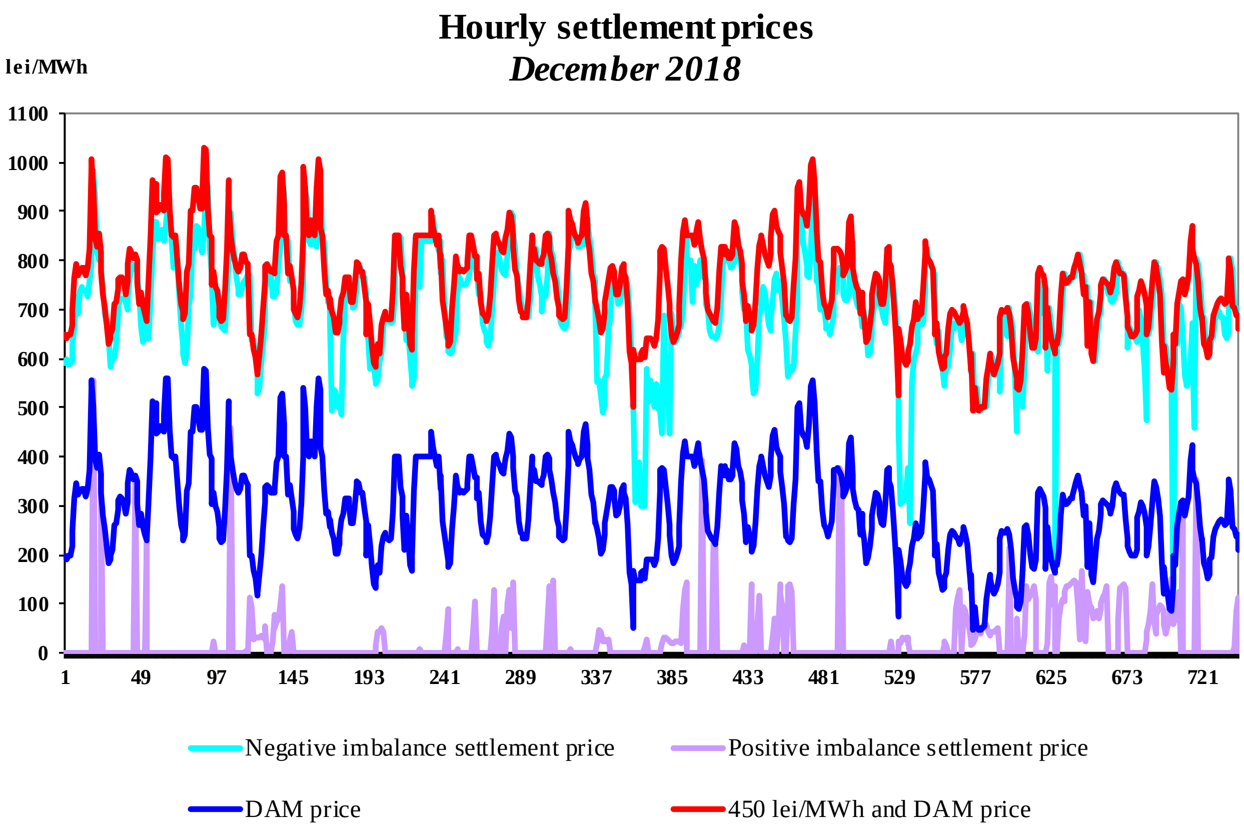
Source: Data published by Opcom SA – Electricity Market Monitoring Unit assessment

The following graph presents the evolution of weekly average spot prices starting with July 2005:



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

In order to cover the differences between planned/contracted amounts of consumption/ generation and their values in real time, the system operator (CNTEE Transelectrica 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.



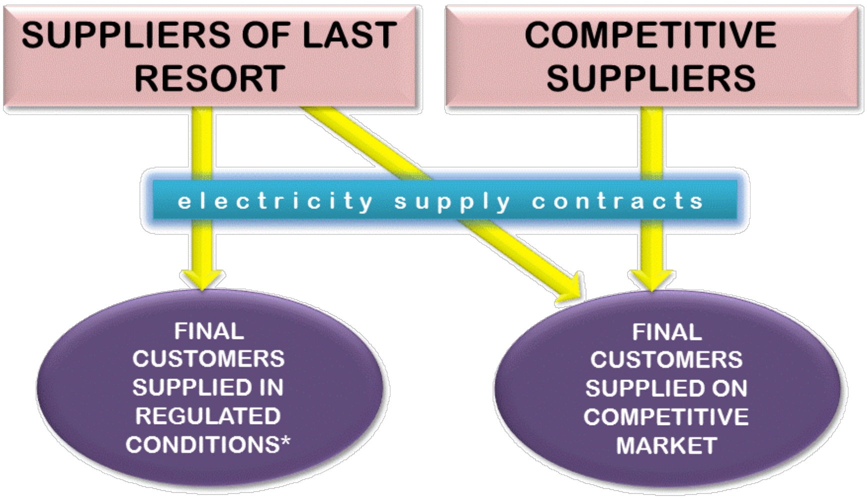
Source: Daily/monthly reports of Opcom SA – Electricity Market Monitoring Unit assessment

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

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

III. RETAIL ELECTRICITY MARKET

1. Structure of the retail electricity market

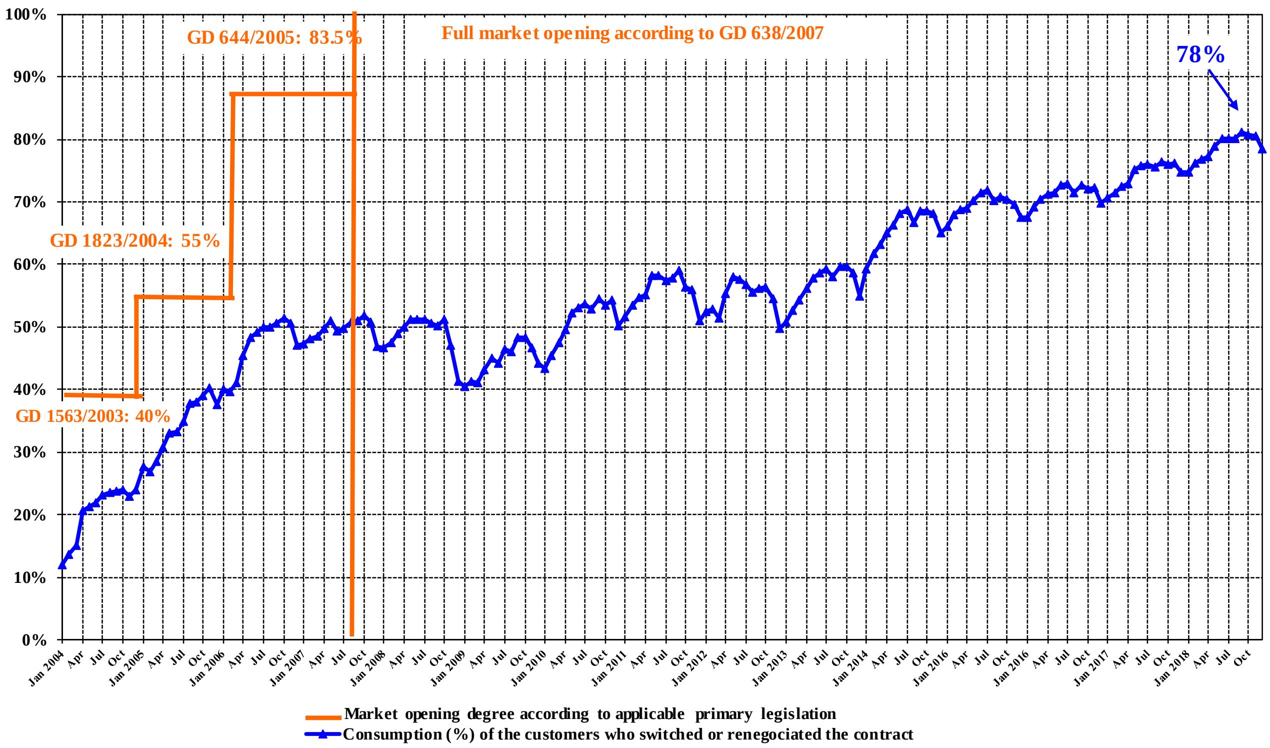


* according to art. 53 (2) and art. 55 (1) from Electricity and Gas Law no. 123/2012

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 – December 2018. 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 - December 2018

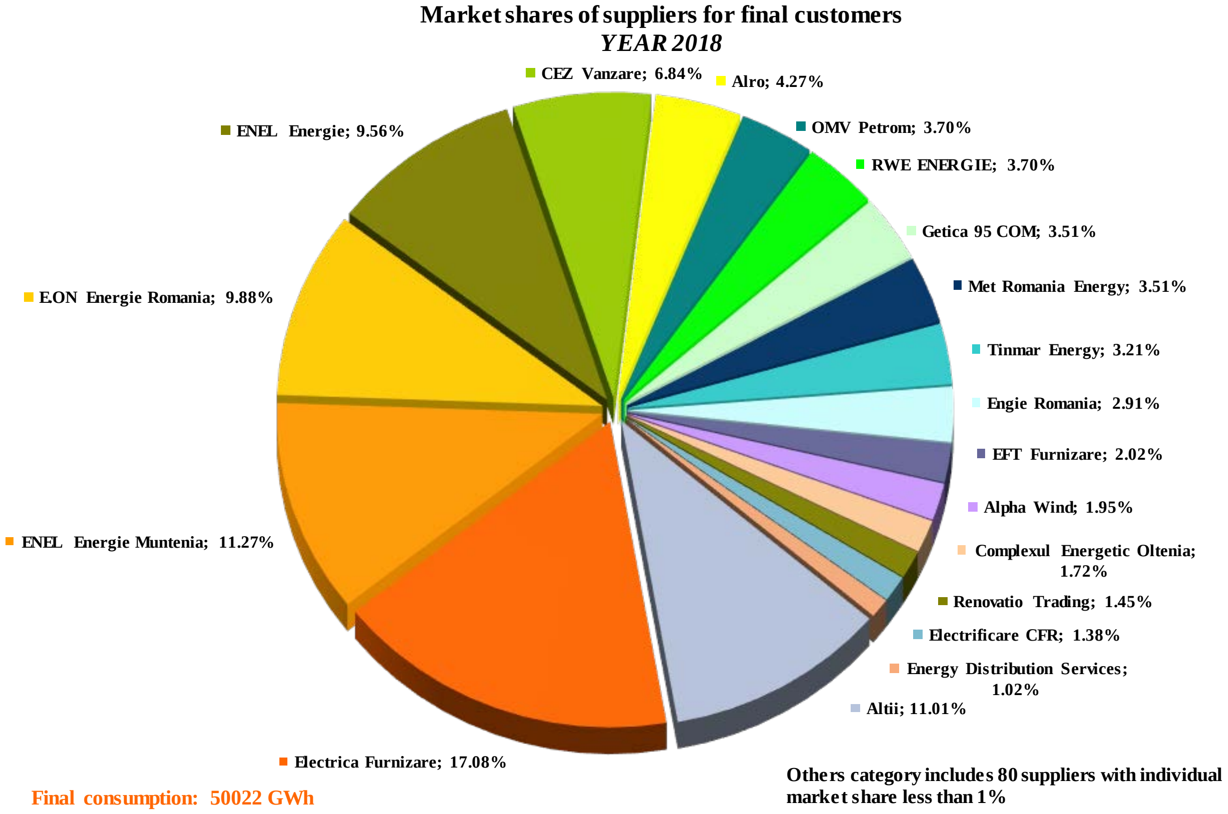


Source: Monthly reports of the final customers suppliers – Electricity Market Monitoring Unit assessment

3. Market shares of the electricity suppliers

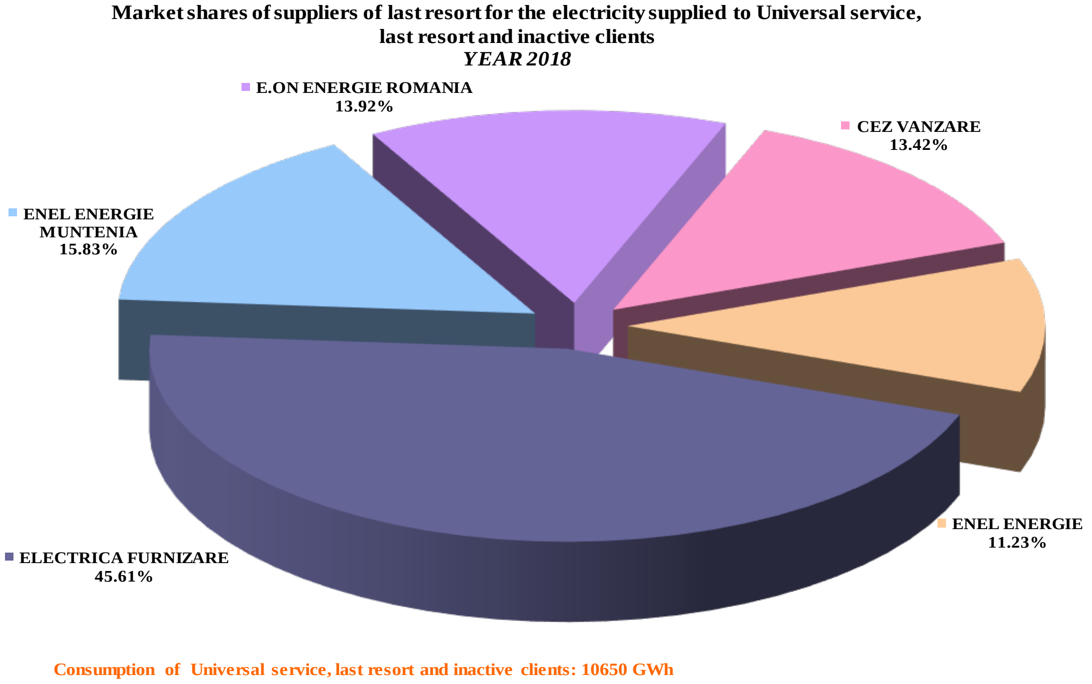
In the following three graphs are presented the market shares of electricity suppliers on the retail market, calculated:

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, last resort regime and inactive clients and to consumers who have switched their supplier or have negotiated the contract;



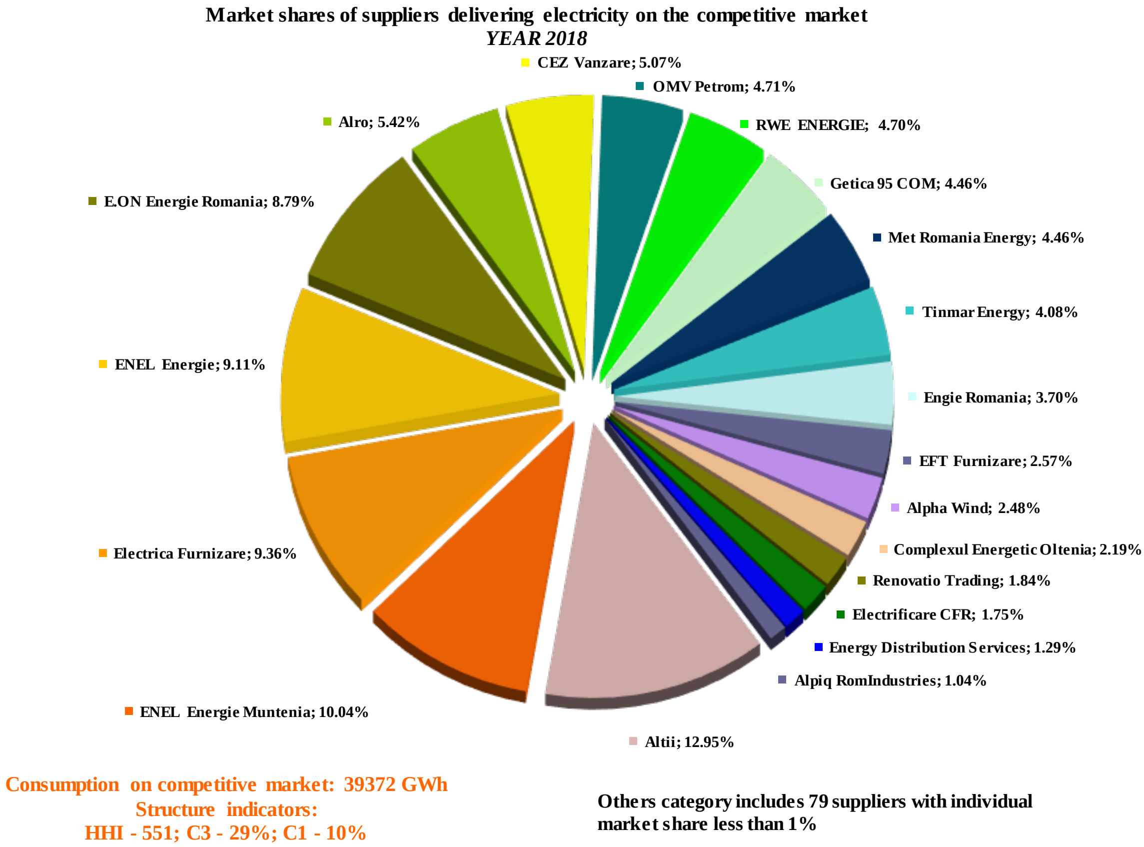
Source: Monthly reports of suppliers for final customers – Electricity Market Monitoring Unit assessment

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



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.



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

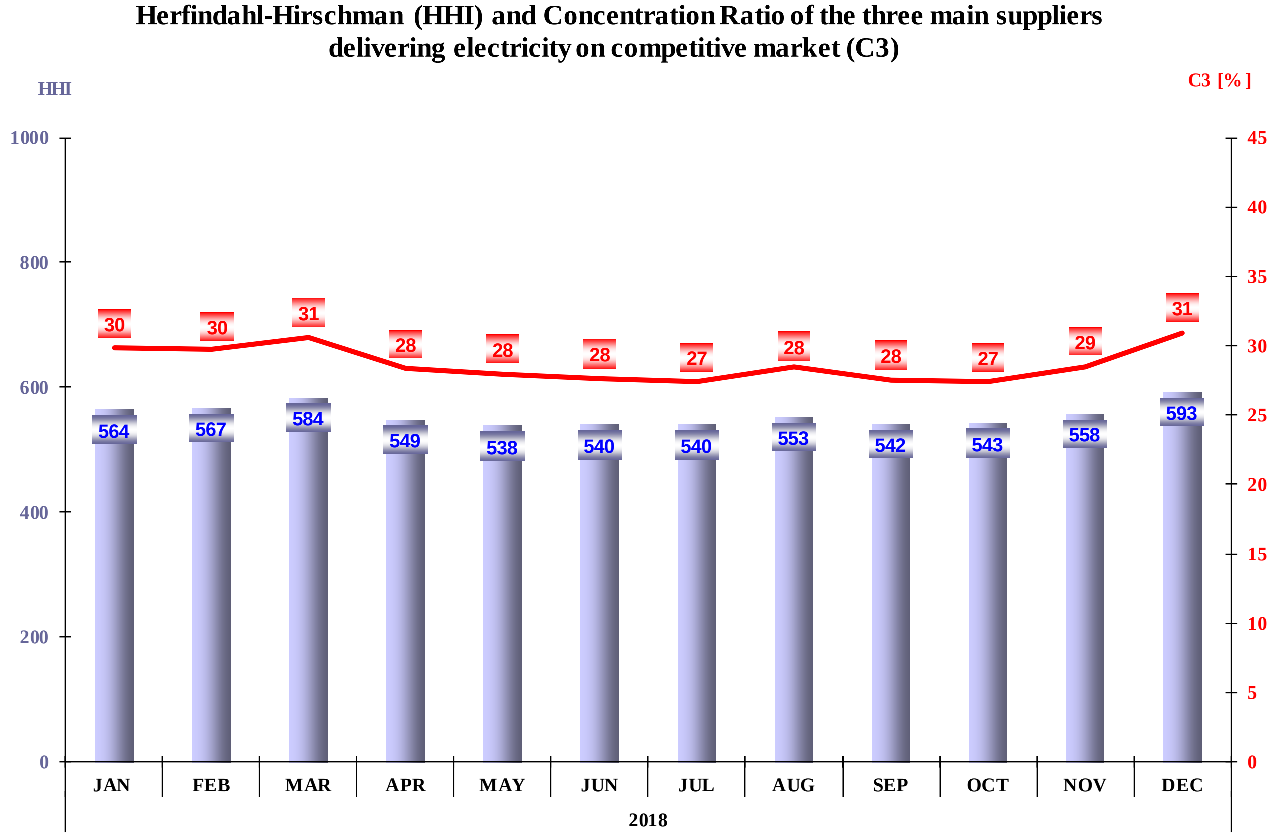
It is noted that in the calculation of the market indicator values the principle of dominance was not taken into account and the electricity supplied on the basis of which each supplier's market share was established includes the self-consumption of the large industrial consumers who also hold a supply 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. Thus, the following table shows the number of suppliers active on the REM, structured according to the size of the activity on this market in December 2018.

Number of suppliers	Share of sales to final customers from total sales transactions			
	100%	75% - 100%	50% - 75%	<50%
Competitive	13	19	10	21
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 December 2018 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 December 2018, Year 2018 respectively, calculated for each consumption band defined by the Regulation (EU) 2016/1952, for household customers and non-household customers:

Indicators - Dec 2018	Consumption bands - Non-household customers							
	IA	IB	IC	ID	IE	IF	IG	Total
C1 - % -	38	21	16	11	17	11	21	**10**
C3 - % -	74	49	39	30	44	30	47	**27**
HHI	2385	1200	829	629	911	683	1059	**534**
Consumption - GWh -	150	446	325	689	401	226	824	**3061**
No. of SUPPLIERS	64	77	70	61	25	19	18	**89**
No. of suppliers of last resort	5	5	5	5	5	4	3	**5**
No. of competitive suppliers	44	55	50	43	14	12	8	**62**
No. of producers	15	17	15	13	6	3	7	**22**

Indicators - Year - 2018	Consumption bands - Non-household customers							
	IA	IB	IC	ID	IE	IF	IG	Total
C1 - % -	38	23	16	10	16	13	20	**9**
C3 - % -	73	48	39	29	44	31	44	**27**
HHI	2241	1212	803	589	877	666	987	**517**
Consumption - GWh -	1431	4581	3601	8279	4936	3130	10299	**36256**
No. of SUPPLIERS	73	82	75	66	31	21	18	**95**
No. of suppliers of last resort	5	5	5	5	5	5	3	**5**
No. of competitive suppliers	51	59	54	48	19	13	8	**67**
No. of producers	17	18	16	13	7	3	7	**23**

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

Indicators -December 2018	Consumption bands - Household customers					
	DA	DB	DC	DD	DE	Total
C1 - % -	50	35	31	30	32	**38**
C3 - % -	90	80	75	73	68	**80**
HHI	3659	2319	2131	2174	2003	**2533**
Consumption - GWh -	137	125	69	48	18	**396**
No. of SUPPLIERS	39	38	38	41	38	50
No. of suppliers of last resort	5	5	5	5	5	**5**
No. of competitive suppliers	30	30	29	33	29	**39**
No. of producers	4	3	4	3	4	**6**

Indicators - Year 2018	Consumption bands - Household customers					
	DA	DB	DC	DD	DE	Total
C1 - % -	54	37	33	31	31	**40**
C3 - % -	91	77	72	74	72	**79**
HHI	3976	2331	2116	2153	2020	**2592**
Consumption - GWh -	1002	967	566	417	163	**3116**
No. of SUPPLIERS	47	44	43	45	40	56
No. of suppliers of last resort	5	5	5	5	5	**5**
No. of competitive suppliers	38	36	34	37	31	**45**
No. of producers	4	3	4	3	4	**6**

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

5. Evolution of number of clients and electricity delivered

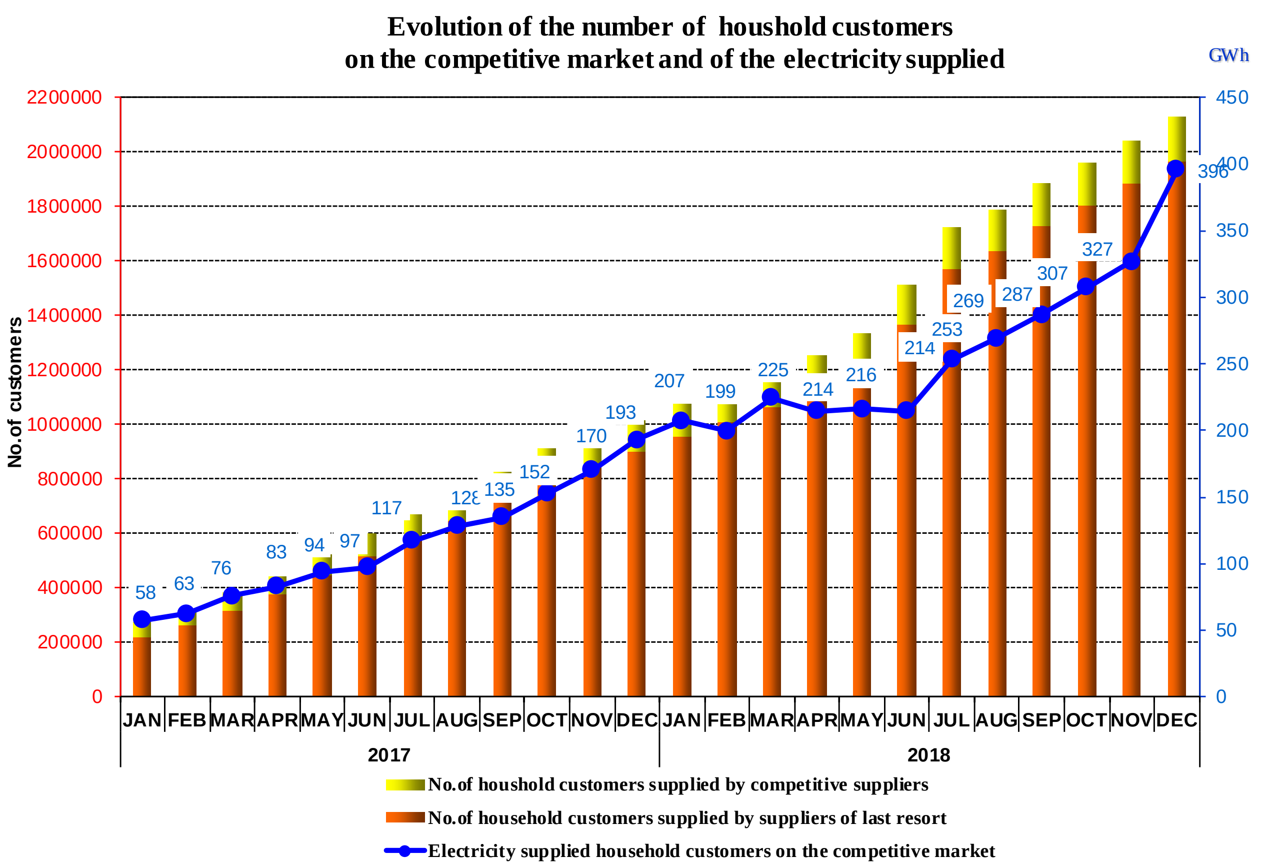
The number of final customers supplied under competitive conditions is shown on a monthly basis over the last 12 months. Also, for December 2018 and the Year 2018 this number is split into customers categories, according to the provisions of Regulation (EU) no. 2016/1952. The tables below present the consumption bands for each category of non-household and household customers:

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	

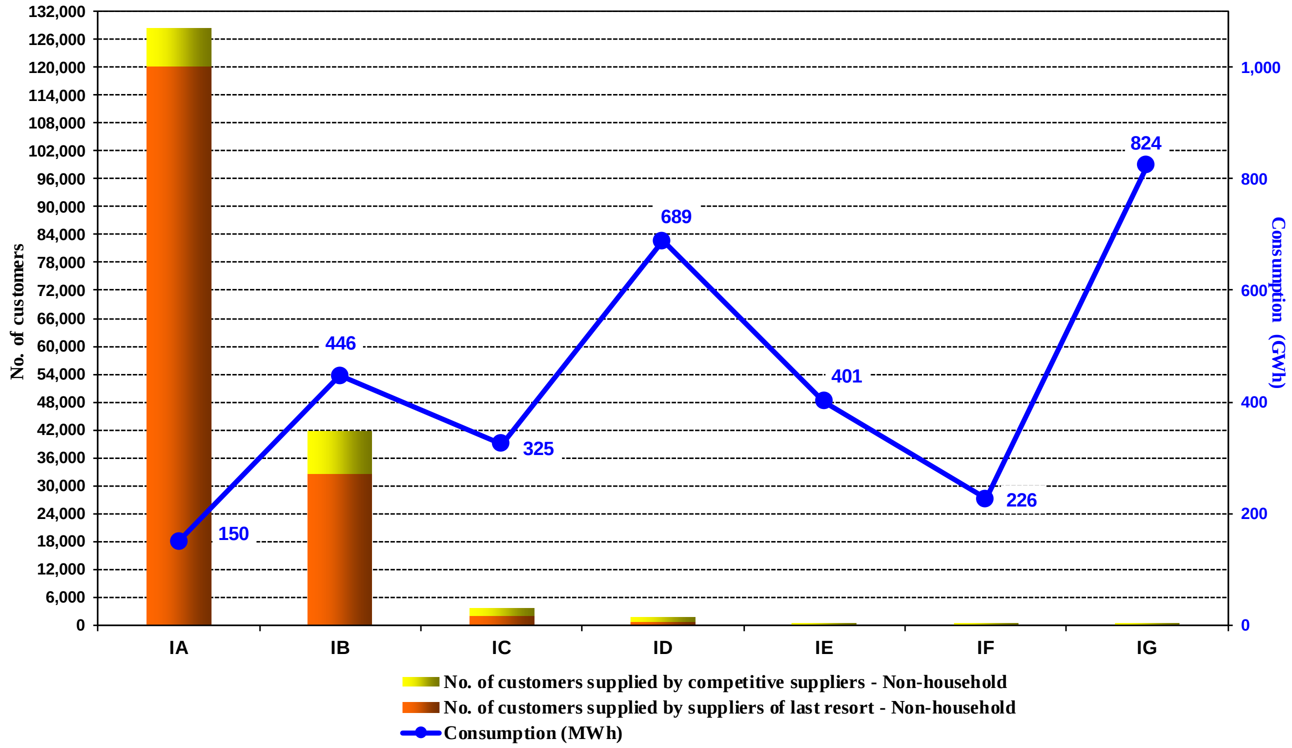
Source: Monthly reports of the competitive suppliers – Electricity Market Monitoring Unit assessment

Electricity sales under competitive conditions to household customers between January 2017 and December 2018 are shown in the following graph:



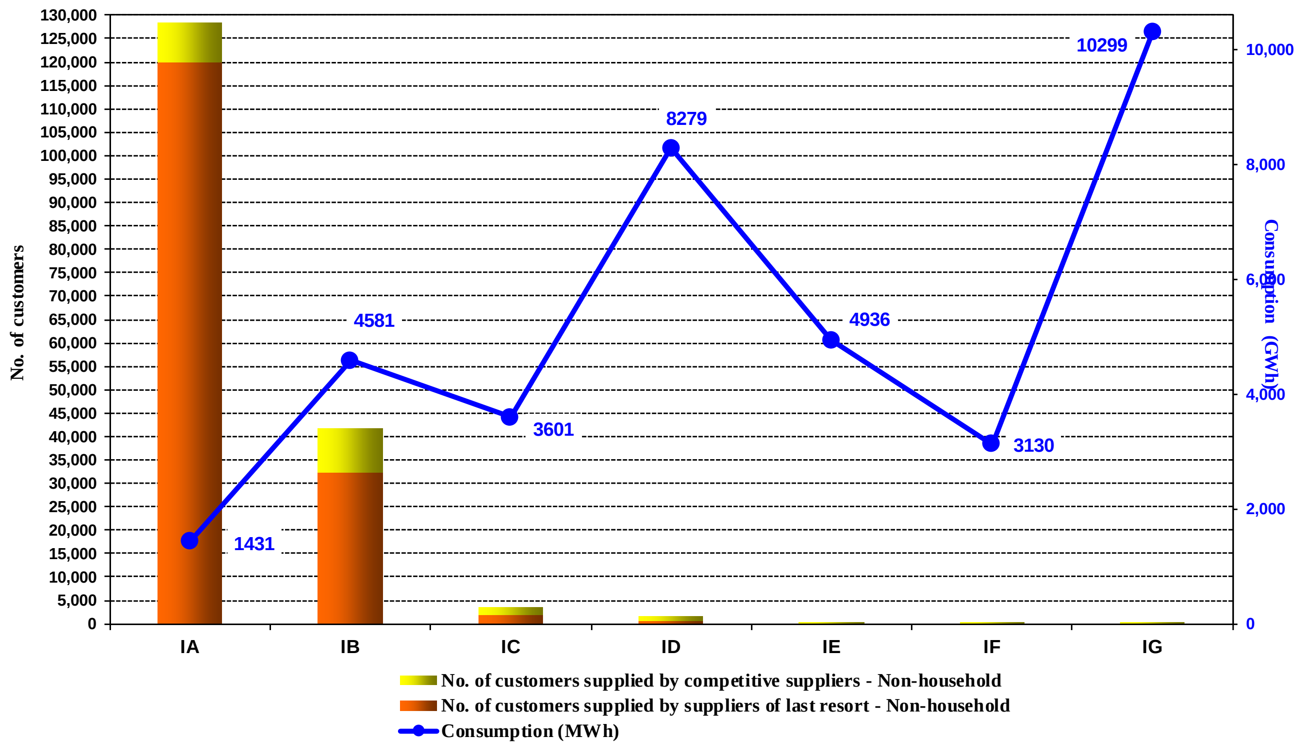
Source: Monthly reports of the suppliers – Electricity Market Monitoring Unit assessment

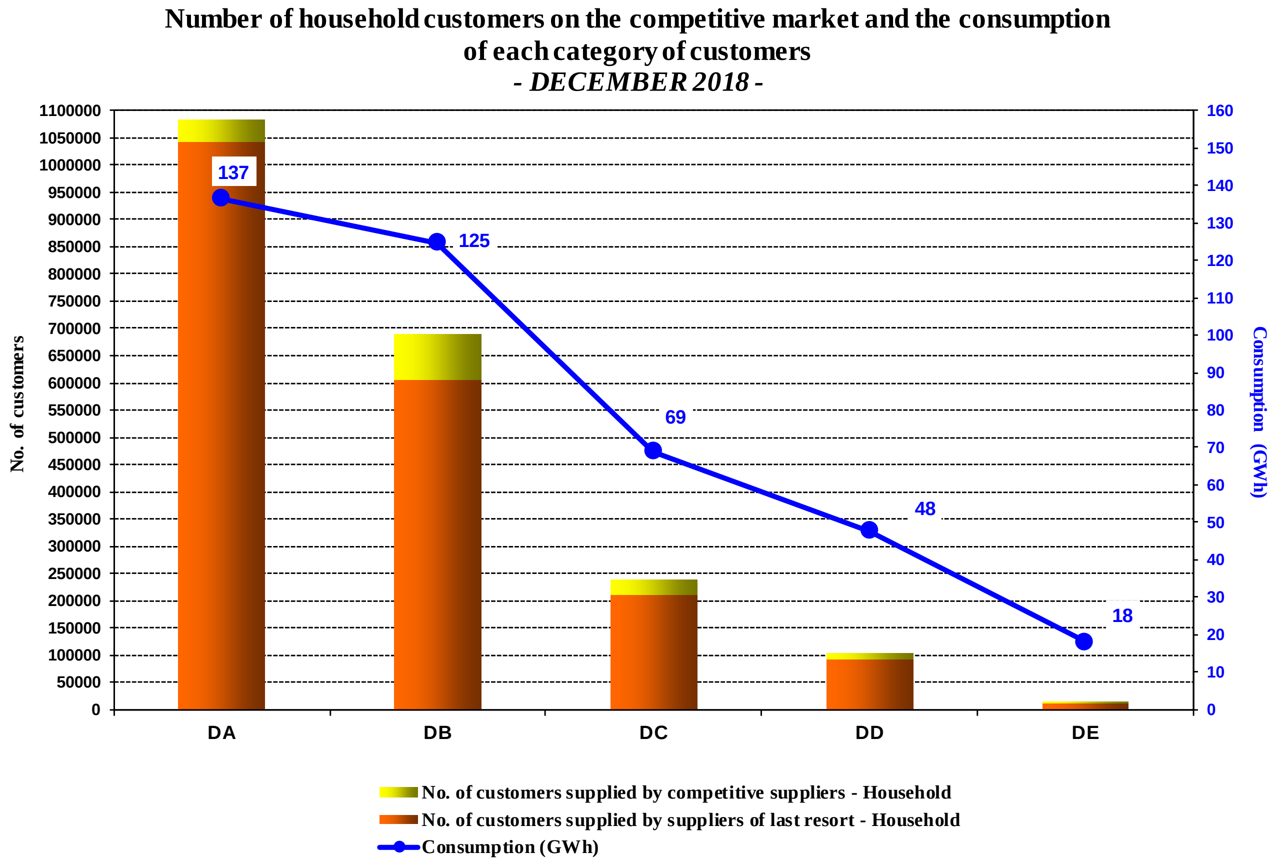
Number of non-household customers on the competitive market and the consumption of each category of customers
- DECEMBER 2018 -



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
- YEAR 2018 -

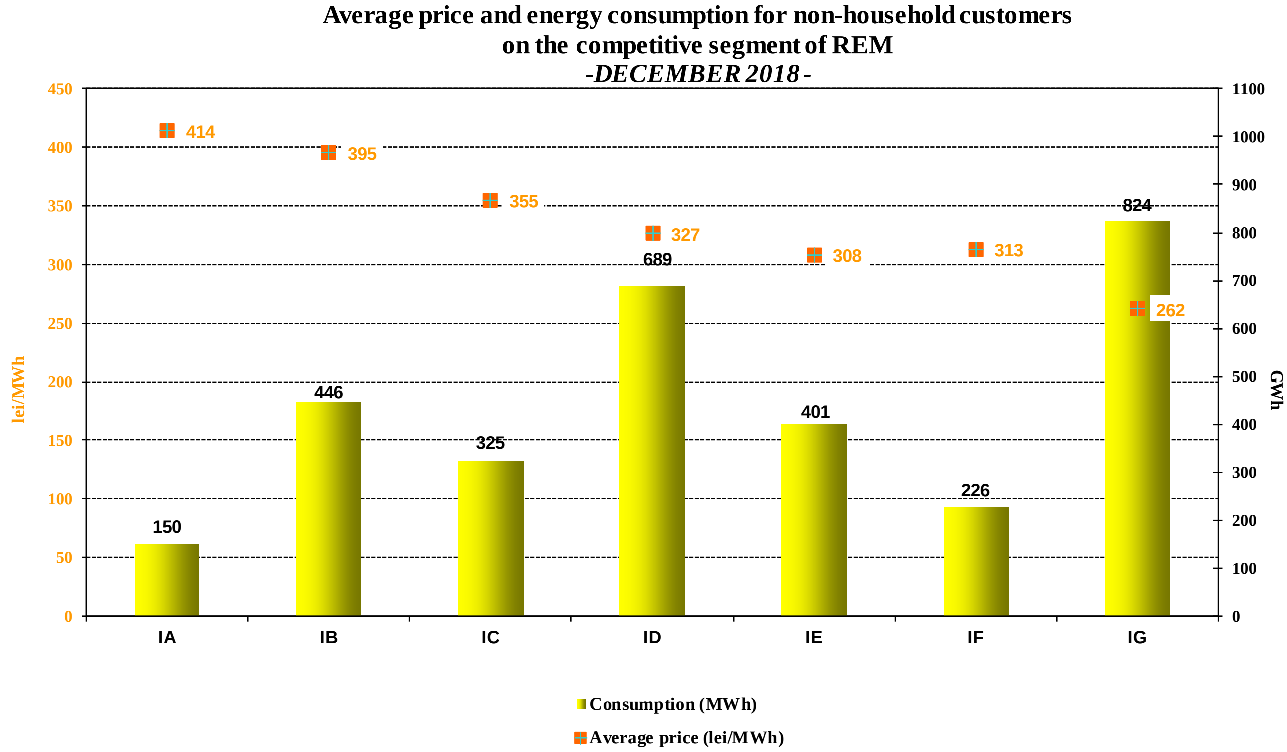


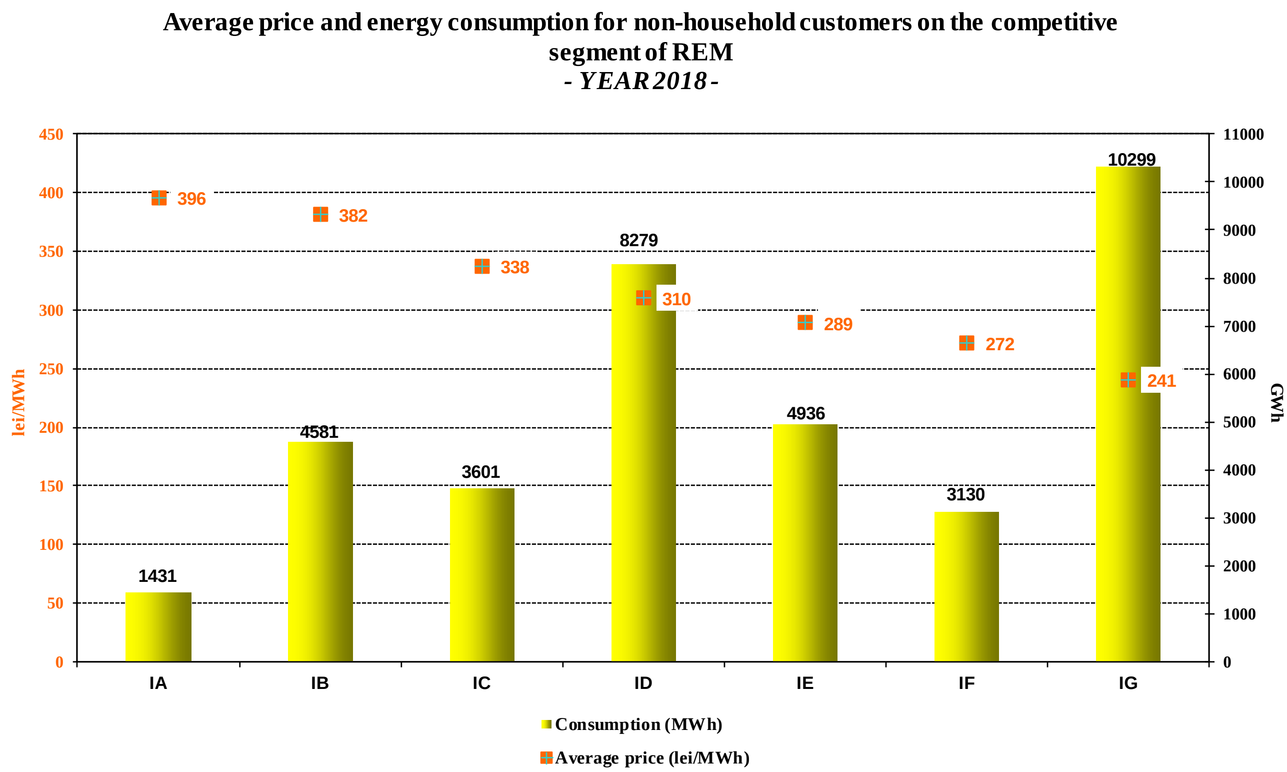


Source: Monthly reports of the suppliers – Electricity Market Monitoring Unit assessment

6. Average selling prices to customers on the competitive market

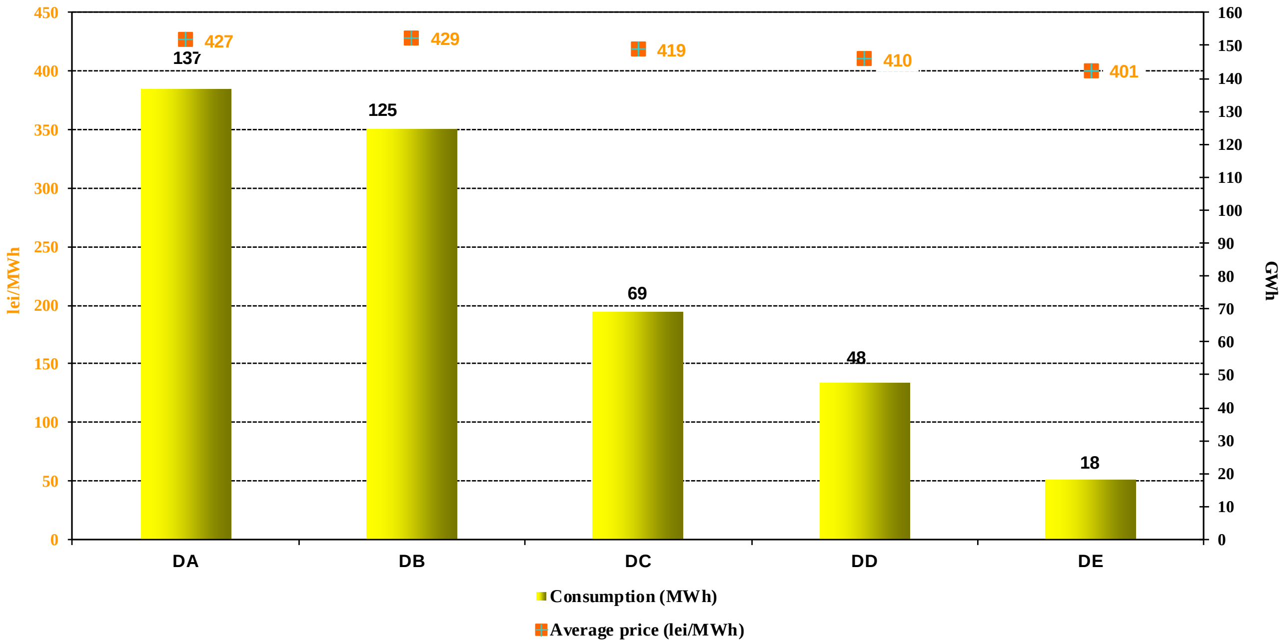
The following graphs present the average selling prices to household and non-household customers supplied on the competitive market, based on the structure defined according to the Regulation (EU) no. 2016/1952, for December 2018 and Year 2018.



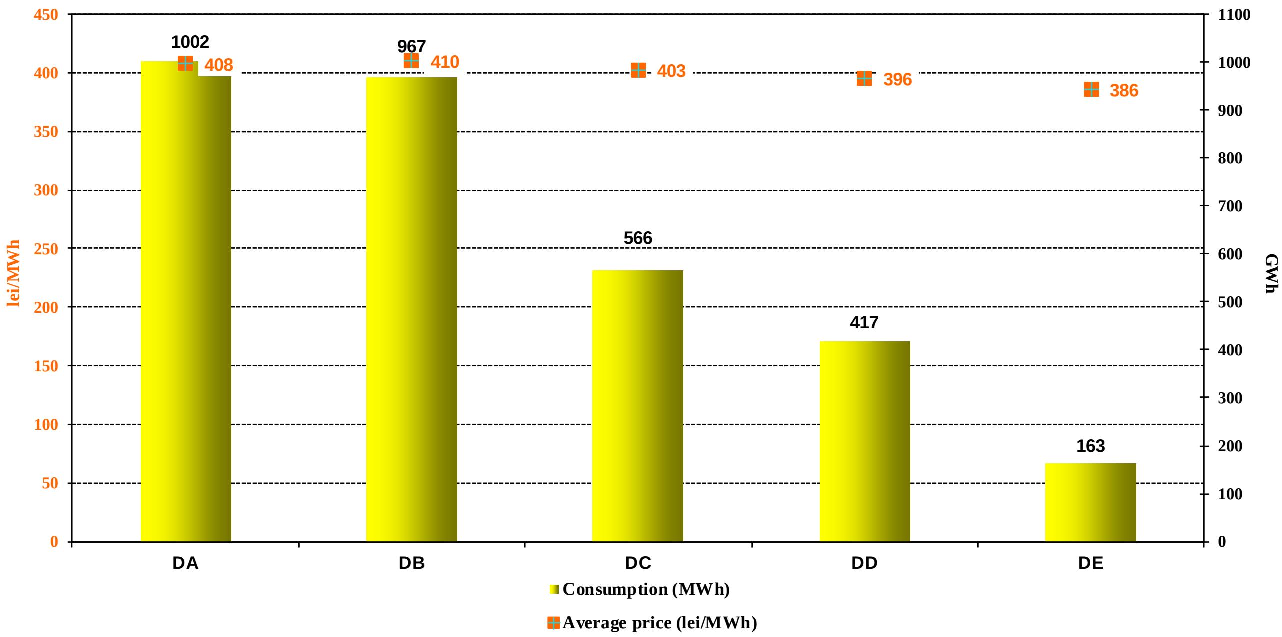


Source: Monthly reports of the competitive suppliers – Electricity Market Monitoring Unit assessment

Average price and energy consumption for household customers on the competitive segment of REM
- DECEMBER 2018-



Average price and energy consumption for household customers on the competitive segment of REM
-YEAR 2018-



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.*

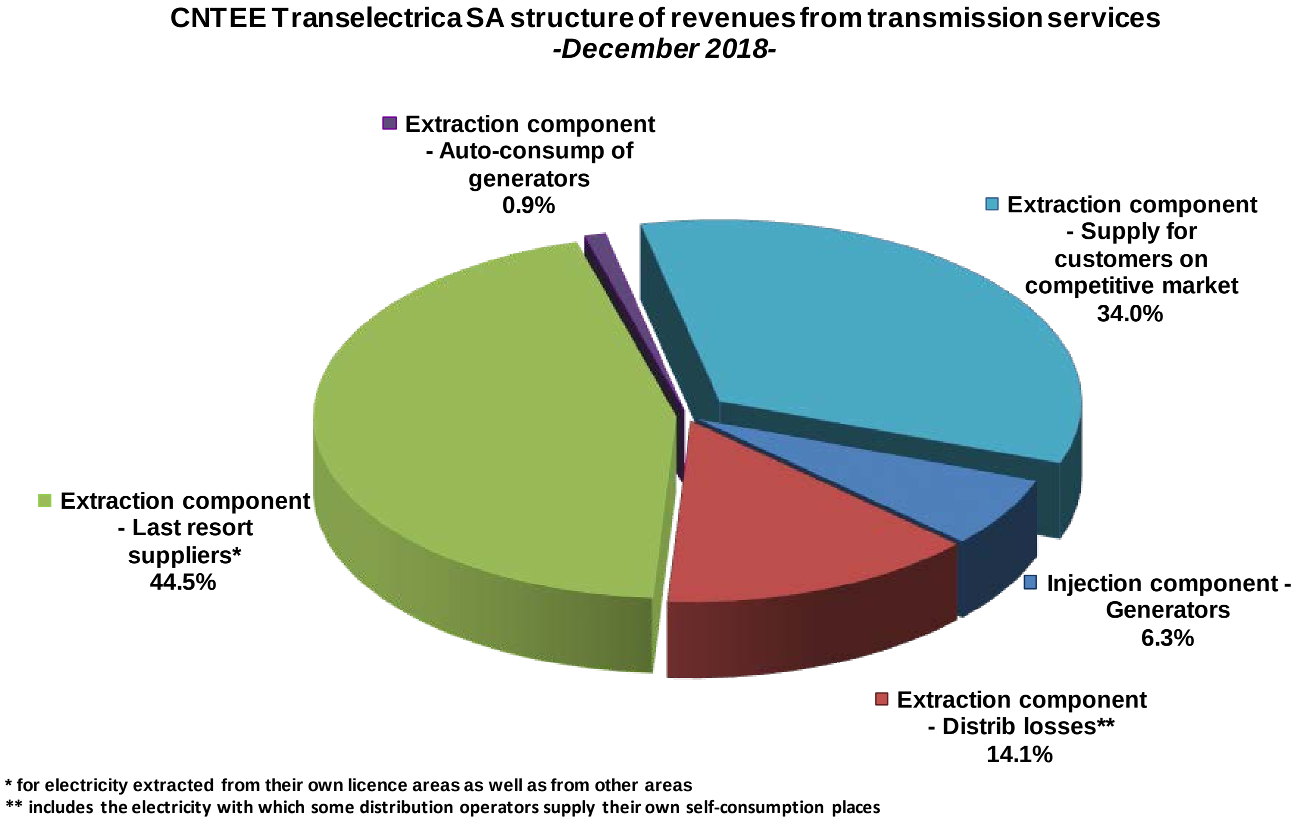
IV. TRANSMISSION AND SYSTEM OPERATOR CNTEE TRANSELECTRICA SA

TSO performs the electricity transmission service at regulated tariffs differentiated by separate tariff regions, depending on the impact of injection or extraction of electricity in/from transmission grid on the NPS functioning regime.

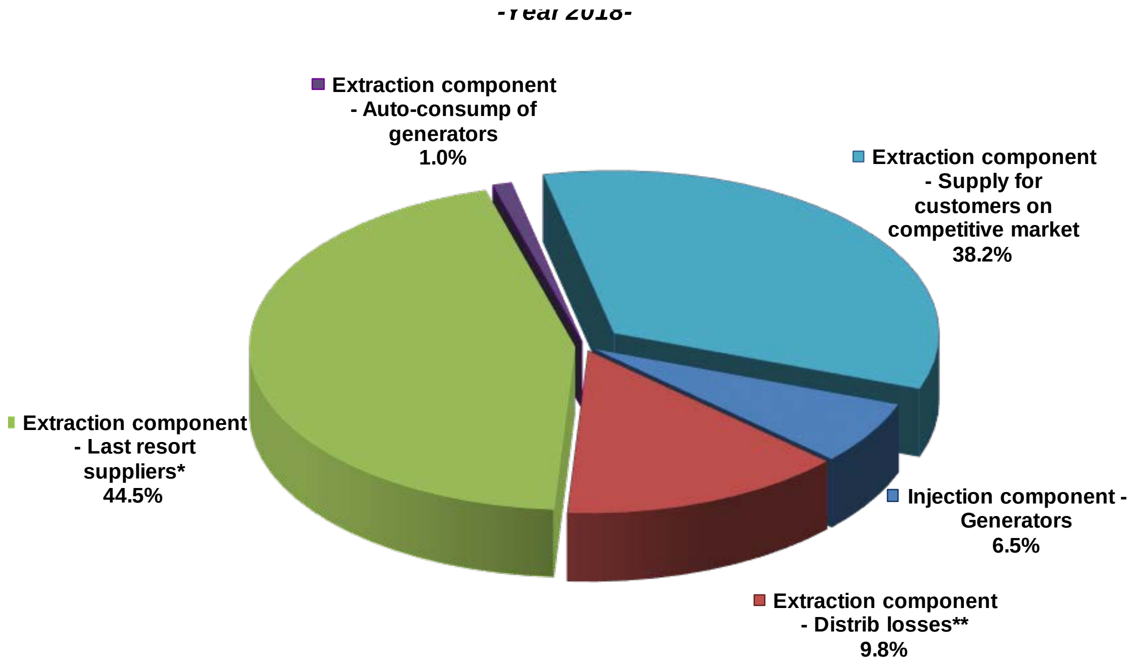
Compared to the previous method of establishing the regional transmission tariffs, which aimed to offer signals for the location of energy sources and consumption areas respectively, starting with July 2015 the transmission service tariff methodological principles were modified in order to comply with EU regulations and ACER recommendations.

Therefore, the injection tariff covers only the network losses costs, differentiated by tariff regions, while the extraction tariff covers the average cost of the transmission service.

The following graph presents the structure of CNTEE Transelectrica SA revenues, in December 2018 and Year 2018 respectively, following the provision of the transmission service, determined also by the successive changes of the regulated regional transmission tariffs.



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

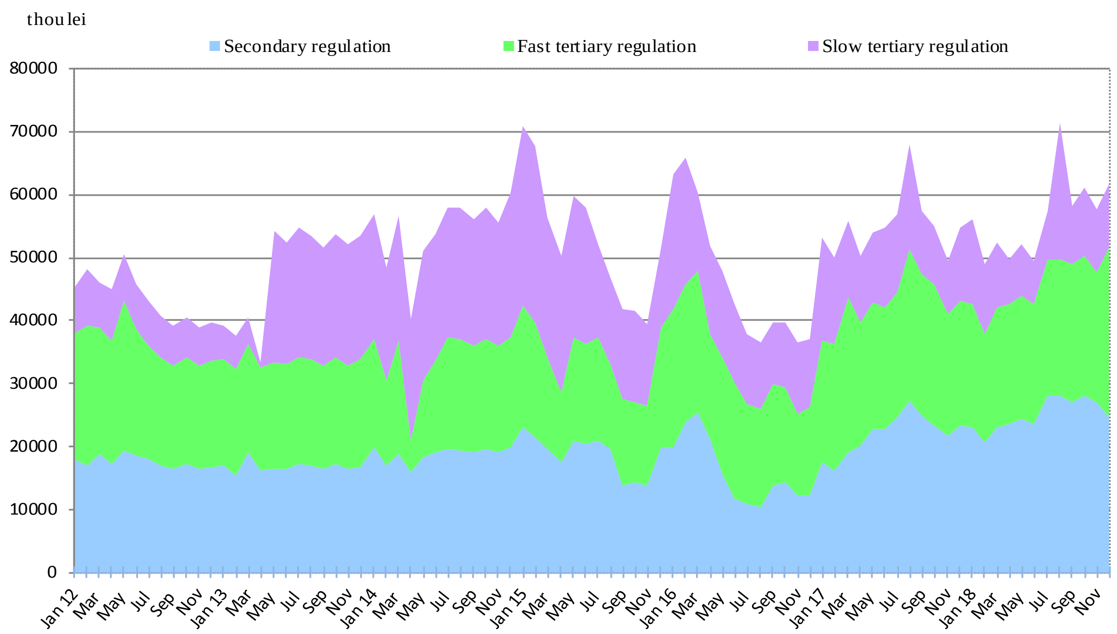


electricity extracted from their own licence areas as well as from other areas
cludes the electricity with which some distribution operators supply their own self-consumption places

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

In order to perform the system operator tasks, CNTEE Transelectrica 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 aquisition (regulated and/or through market mechanisms) of ancillary services. In order to cover these 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 Transelectrica SA costs with ancillary services acquired from qualified generators

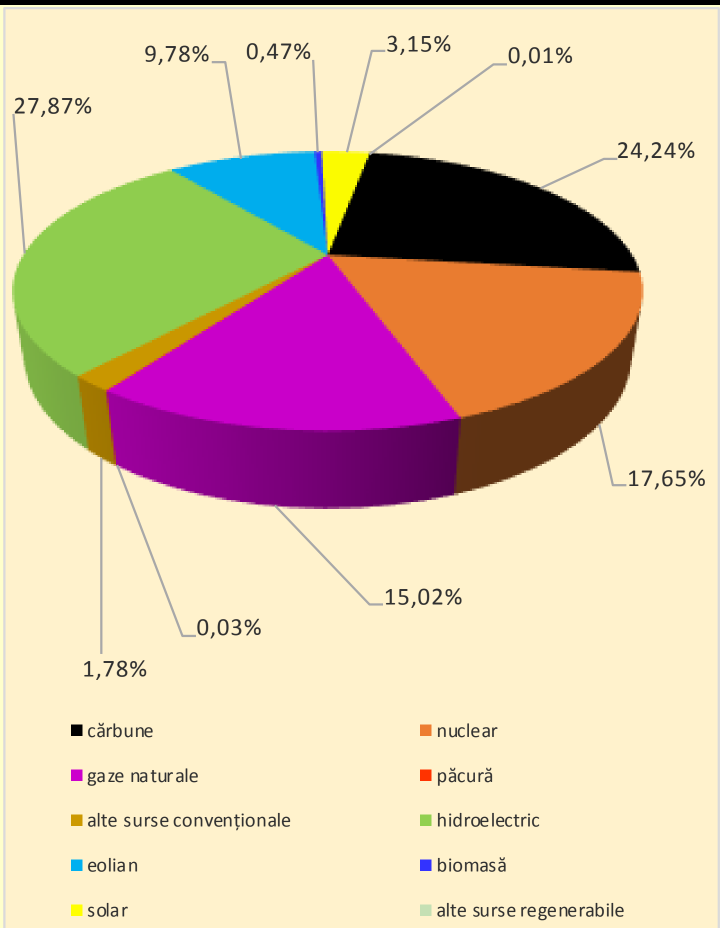


Source: Monthly reports of CNTEE Transelectrica SA – Electricity Market Monitoring Unit assessment

V. THE STRUCTURE OF ELECTRICITY GENERATION IN ROMANIA BY TYPES OF PRIMARY ENERGY SOURCES AND THE VALUES OF ENVIRONMENTAL INDICATORS ASSOCIATED WITH THE ELECTRICITY GENERATED ON NATIONAL LEVEL, ON EACH TYPE OF PRIMARY SOURCE

According to the provisions of the *Electricity Labeling Regulation*, approved by ANRE President Order no. 61/2016, on the basis of the reports of electricity producers regarding the total amount of electricity produced, the structure of electricity generation in Romania by types of primary sources was calculated and is presented below.

In 2018, the values of specific national average CO_2 emissions and radioactive waste resulting from electricity generation were of 289.85 g/kWh, respectively of 0.003 g/kWh. By referring to these values, electricity suppliers will specify in the labels they will develop if the electricity they delivered to final customers in 2018 had an impact on the environment *below/above* the national average.



Structura pe tipuri de surse primare de energie a producției de energie electrică		Producția de energie electrică în România în anul 2018 (%)
A.	***Surse convenționale:***	***58,72%***
a1	cărbune	24,24%
a2	nuclear	17,65%
a3	gaze naturale	15,02%
a4	păcură	0,03%
a5	alte surse convenționale	1,78%
B.	***Surse regenerabile:***	***41,28%***
b1	hidroelectric	27,87%
b2	eolian	9,78%
b3	biomasă	0,47%
b4	solar	3,15%
b5	alte surse regenerabile	0,01%

Impact asupra mediului la nivelul României:

Emisii specifice de CO2: 289,85 g/kWh

Deşeuri radioactive: 0,003 g/kWh

Conform Ordinului președintelui ANRE nr. 61/2016 - Regulament de etichetare a energiei electrice (www.anre.ro)

Average specific CO2 emissions values by primary energy source types, presented in the following table, are determined as a weighted average of the specific emissions and electricity generated by each producer per each type of primary source:

Primary energy source	***Specific* CO_2 emissions [g/kWh]**
Coal	915.60
Natural gas	386.35
Fuel oil	609.15
Other conventional sources	546.28
Renewable sources	0
Sectorial average	***289.85***

V. MARKET RULES EVOLUTION IN DECEMBER 2018

In December 2018, ANRE issued the following regulations with an impact on the wholesale and retail markets:

- ANRE President Order no. 193/14 December 2018 approving the modification and completion of the tariff setting methodology for electricity distribution service, approved by the ANRE President Order no. 169/2018;
- ANRE President Order no. 194/14 December 2018 approving the specific tariffs for the electricity distribution service and the price for reactive electricity for E-Distributie Banat S.A., valid from the 1st of January 2019;
- ANRE President Order no. 195/14 December 2018 approving the specific tariffs for the electricity distribution service and the price for the reactive electricity for E-Distributie Dobrogea S.A., valid from the 1st of January 2019;
- ANRE President Order no. 196/14 December 2018 approving the specific tariffs for the electricity distribution service and the price for the reactive electricity for E-Distributie Muntenia S.A., valid from the 1st of January 2019;
- ANRE President Order no. 197/14 December 2018 approving the specific tariffs for the electricity distribution service and the price for the reactive electricity for Societatea de Distribuţie a Energiei Electrice Muntenia Nord, valid from the 1st of January 2019;
- ANRE President Order no. 198/14 December 2018 approving the specific tariffs for the electricity distribution service and the price for the reactive electricity for Societatea de Distribuţie a Energiei Electrice Transilvania Nord, valid from the 1st of January 2019;
- ANRE President Order no. 199/14 December 2018 approving the specific tariffs for the electricity distribution service and the price for the reactive electricity for Societatea de Distributie Transilvania Sud S.A., valid from the 1st of January 2019;
- ANRE President Order no. 200/14 December 2018 approving the specific tariffs for the electricity distribution service and the price for the reactive electricity for Distributie Energie Oltenia S.A., valid from the 1st of January 2019;
- ANRE President Order no. 201/14 December 2018 approving the specific tariffs for the electricity distribution service and the price for the reactive electricity for Delgaz Grid S.A., valid from the 1st of January 2019;
- ANRE President Order no. 202/14 December 2018 approving the regulated tariff of the electricity market operator for 2019;

- ANRE President Order no. 205/14 December 2018 approving the Methodology for monitoring the electricity market for final customers supplied by last resort suppliers;
- ANRE President Order no. 206/14 December 2018 approving the amendment of ANRE President Order no. 123/2017 on the approval of the contribution for high efficiency cogeneration and some provisions on how to invoice it;
- ANRE President Order no. 207/14 December 2018 on the establishment of the estimated mandatory quota for the acquisition of green certificates for the year 2019;
- ANRE President Order no. 211/19 December 2018 on the modification and completion of the Regulation for the granting of licenses and authorizations in the electricity sector, approved by ANRE President Order no. 12/2015;
- ANRE President Order no. 218/19 December 2018 approving the amendment of Annex no. 3 and Annex no. 4 to ANRE President Order no. 88/2015 for the approval of framework contracts for the supply of electricity to household and non-household customers of the last resort suppliers, the general conditions for the supply of electricity to the final customers of the last resort suppliers, the electricity invoice model and the model of the electricity consumption convention, used by suppliers of last resort;
- ANRE President Order no. 224/20 December 2018 approving the tariffs and contributions charged by the National Regulatory Authority for Energy in 2019;
- ANRE President Order no. 226/28 December 2018 for the approval of the rules for the selling of the electricity produced in renewable power generating units with installed electric power up to 27 kW belonging to prosumers;
- ANRE President Order no. 227/28 December 2018 for the approval of the Framework contract for the sale-purchase of the electricity produced by prosumers that have renewable power generation units with an installed power of no more than 27 kW per consumption place and for the amendment of some regulations in the electricity sector;
- ANRE President Order no. 228/28 December 2018 for the approval of the Technical Norms Technical conditions for connection to the public interest electrical networks for the prosumers with injection of active power in the system.
- ANRE President Decision no. 1956/14 December 2018 on the approval of the quantities produced in high efficiency cogeneration units that benefit from the bonus scheme for the month of November 2018;
- ANRE President Decision no. 2046/19 December 2018 approving the document "Proposal of all Transmission and System Operators that perform the reserve replacement process for the implementation framework of the European Platform for the exchange of balancing energy from replacement reserves, according to Article 19 of Commission Regulation (EU) 201/2195 of 23 November 2017 establishing a guideline on electricity balancing"
- ANRE President Decision no. 2047/19 December 2018 approving the regulated price for the acquisition of the ancillary service – slow tertiary reserve, provided by the Complexul Energetic Hunedoara S.A., for the period 1 January - 31 December 2019.

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 negociated 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); CNTEE Transelectrica SA charges for only a part of the respective electricity, given that in four of the grids the regional tariffs are zero (according to ANRE President Order No. 27/2016).

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
- MCP – Market Clearing Price
- 4M MC – Price coupling mechanism for spot markets from Romania. Hungary. Slovakia and Czech Republic
- MU – Monitoring Unit
- OU-NPD – Operational Unit-National Power Dispatch
- PCSU – Centralised Market of Universal Service (Romanian abbreviation)
- REM – Retail Electricty Market
- SLR – Supplier of last resort
- TG/TL – injection / extraction component of the transmission tariff
- US – Universal Service
- WEM – Wholesale Electricity Market