



ROMANIAN ENERGY REGULATORY AUTHORITY

DEPARTMENT OF MONITORING, REMIT



**REPORT ON RESULTS OF MONITORING THE
ROMANIAN ELECTRICITY MARKET
SEPTEMBER 2017**

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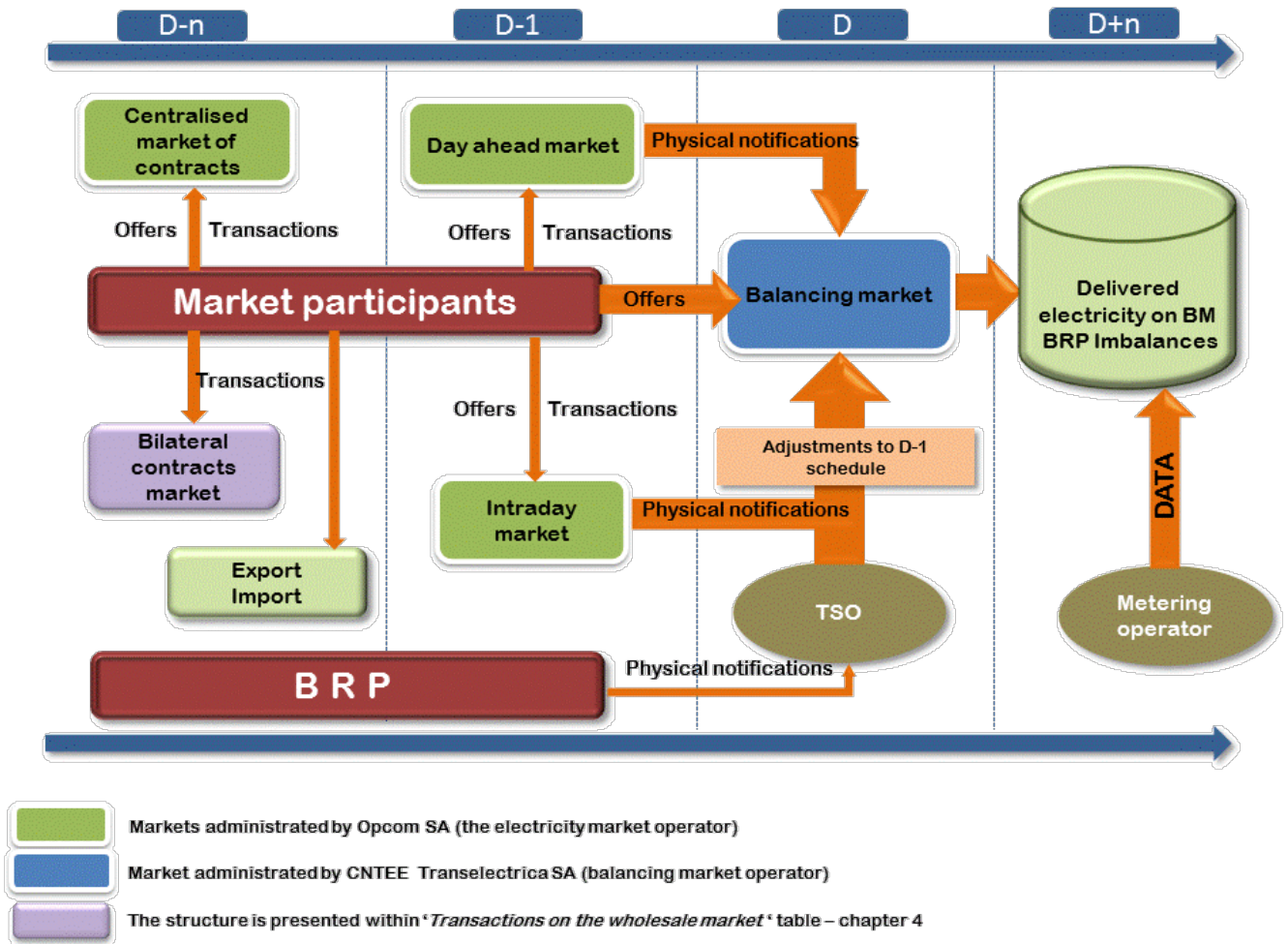
I. MAIN EVENTS IN THE DEVELOPMENT OF THE ROMANIAN ELECTRICITY MARKET

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

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

II. WHOLESALE ELECTRICITY MARKET

1. Structure of the wholesale electricity market



2. Participants on the wholesale electricity market

The market participants*¹⁾ acting on the electricity market in september 2017 are presented below split into categories:

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

No.	Category
K	Electricity Suppliers acting exclusively on the wholesale market
1	Alpiq Energy SE
2	Bit-Reen SRL
3	CEZ as
4	Cinta Energy SA
5	Danske Commodities/s Aarhus
6	EDF Trading Limited
7	Energo-Pro Trading EAD
8	Elpetra Energy E.A.D.
9	EVN Trading South East Europe
10	Ezpada SRO
11	Freepoint Commodities Europe Ltd
12	GEN I trgovanje in prodaja elektricne energije doo
13	Holding Slovenske Elektrarne
14	Interenergo Energetska, Inzeniring d.o.o.
15	JAS Energy Trading s.r.o.
16	Lord Energy SRL
17	MVM Partner Zrt
18	Nis Petrol SRL
19	OMV Gas Marketing & Trading GmbH
20	Petrol Bucharest Rom SRL
21	Ritam-4-TB ood
22	Statkraft Markets GmbH
23	Transenergo Com SA
24	Unit Energy Trade SRL
25	Verbund Trading Romania SRL
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	Axpo Energy Romania SRL
10	Apuron Energy SRL
11	C-Gaz & Energy Distributie SRL
12	Ciga Energy SA
13	Cotroceni Park SA
14	Crest Energy SRL
15	Curent Alternativ SRL
16	CYEB SRL
17	Eco2Energy Choice SRL
18	EFE Energy SRL
19	EFT Furnizare SRL

No.	Category
M	Electricity Suppliers acting also on the retail market
20	Electric Planners SRL
21	Electrificare CFR SRL
22	Elsid SA
23	Electrocarbon SA
24	Electromagnetica SA
25	Enel Trade Romania SRL
26	Energy Distribution Services SRL
27	Energy Network SRL
28	Engie Romania SA
29	Enol Grup SA
30	Entrex Services SRL
31	Eolian Project SRL
32	E.V.A. Energy SRL
33	Flavus Investitii SRL
34	GDM Logistic SRL
35	Getica 95 COM SRL
36	Grenerg SRL
37	Hermes Energy International SRL
38	ICCO Energy SRL
39	ICPE Electrocond Technologies SA
40	Imperial Development SRL
41	Industrial Energy SA
42	Luxten LC SA
43	Menarom PEC SRL
44	Midas&CO SRL
45	MET Romania Energy Marketing SRL
46	Monsson Trading SRL
47	Neptun SA
48	Next Power SRL
49	Next Energy Parteners SRL
50	Nova Power&Gas SRL
51	P.C. Management & Consulting SRL
52	Plenerg SRL
53	Photovoltaic Green Project SRL
54	Power Clouds SRL
55	QIA Energy SRL
56	QMB Energy SRL
57	RCS&RDS SA
58	Renovatio Trading SRL
59	Restart Energy One SRL
60	Romelectro SA
61	RWE Energie SRL
62	Stock Energy SRL
63	Tinmar Energy SA
64	Transformer Energy Supply SRL
65	Werk Energy SRL

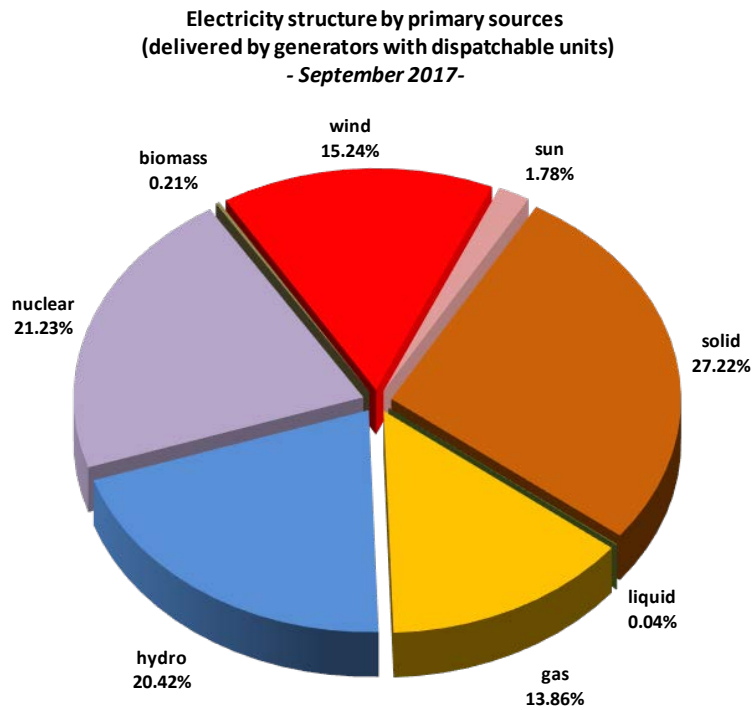
*) The electricity market participants report to ANRE technical/commercial data according to the *Methodology of wholesale electricity market monitoring for assessing the competition level on market and preventing the abuse of dominant position*, approved by ANRE Order no. 35/2006 as well as to the *Methodology of retail electricity market monitoring*, approved by ANRE Order no. 60/2008. The table does not include the Balancing Responsible Parties (BRP). The BRP updated list is published on the Balancing Market Operator website - www.transelectrica.ro.

ANRE monitors the market activity of the generators with dispatchable units. According to the Regulation of scheduling the dispatchable generation units and consumption units, the considered generation units are:

- a. hydro generation group with 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.

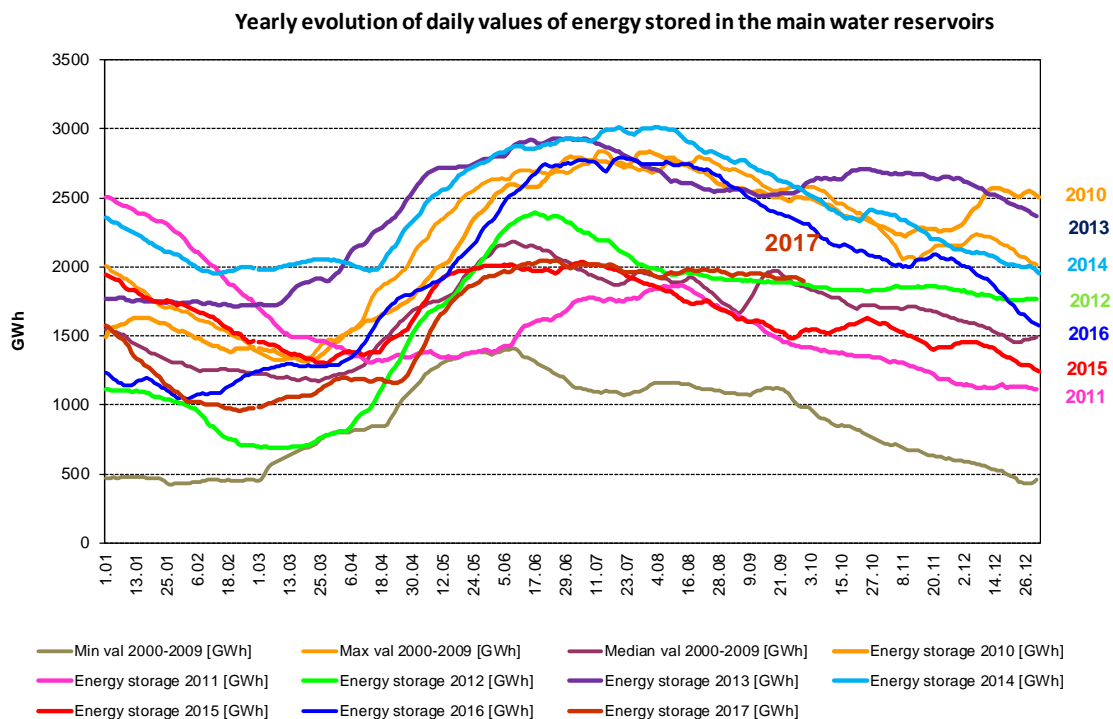
Electricity Suppliers acting exclusively on the wholesale market category include supplying license owners who act only on wholesale market and owners of a trading license issued according ANRE Order no. 13/2015 for approval the „General conditions associated to trading electricity license”.

3. Generation structure of National Energy System on resources types



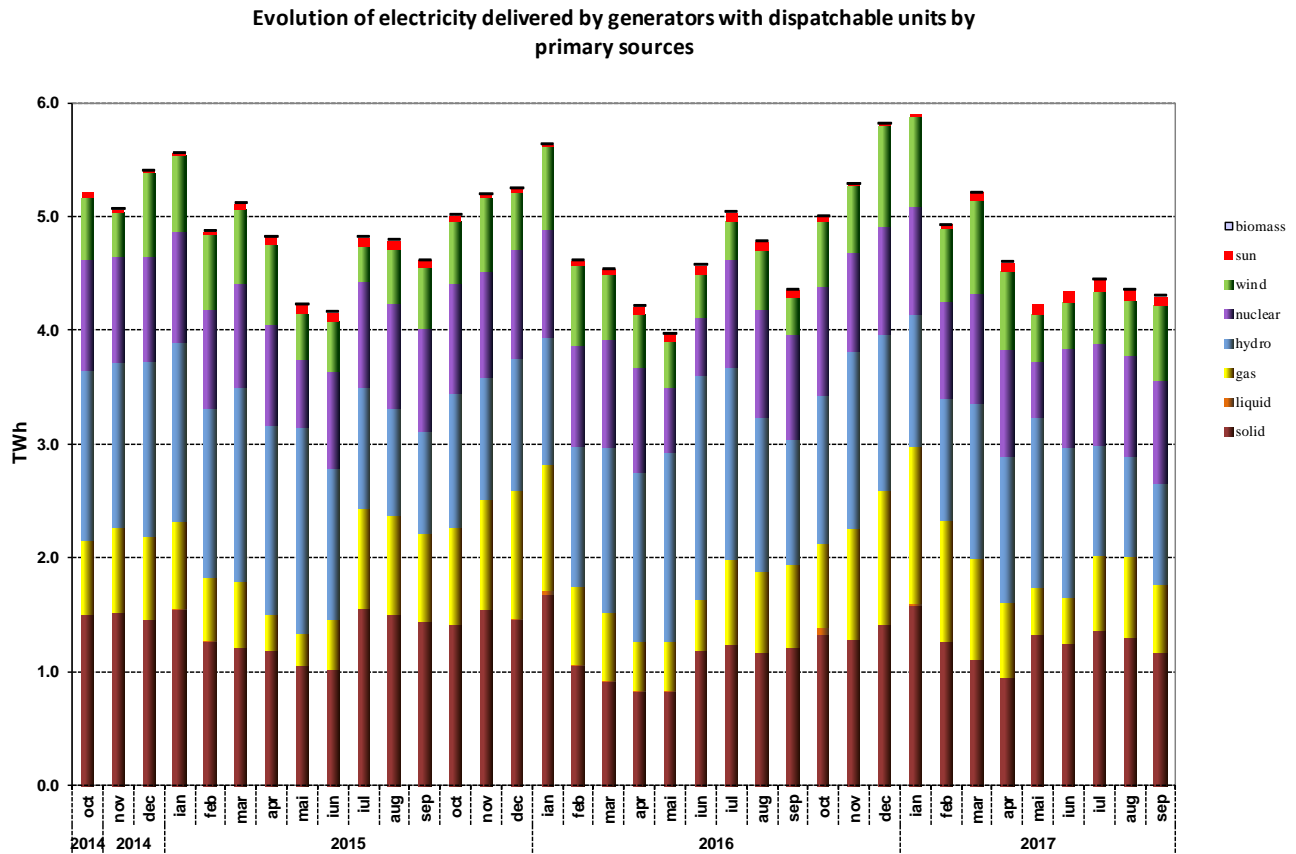
Source: Monthly reports of generators – processed by MG

The electricity generated from hydro resources and the energy stored in the main water reservoirs is directly correlated. The following graph presents the evolution of daily amounts of energy storage during September 2017, compared to the daily values of the last 7 years and compared to minimum, maximum and median values from 2000-2009.



Source: Monthly reports of S.C. Hidroelectrica S.A. – processed by MG

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



Source: Monthly reports of generators – processed by MG

The following table presents the main data regarding the physical balance of electricity for September 2017 compared to data for similar period of 2016:

Nr. Crt.	INDICATOR	UM	Sep 2016	Sep 2017	%	Jan-Sep 2016	Jan-Sep 2017	%
0	1	2	3	4	$5=4/3*100$	6	7	$8=7/6*100$
1	Generated electricity	TWh	4.66	4.58	98.28	44.55	45.20	101.46
2	Delivered electricity	TWh	4.37	4.30	98.40	41.78	42.36	101.39
3	Import	TWh	0.33	0.37	112.12	2.85	2.88	101.05
4	Export	TWh	0.61	0.45	73.77	6.11	5.02	82.16
5	Internal consumption (2+3-4)	TWh	4.09	4.22	103.18	38.52	40.22	104.41
6	Consumption of household customers:	TWh	0.93	0.98	105.38	8.93	9.37	104.93
6.1	on Universal Service regime	TWh	0.93	0.85	91.40	8.93	8.52	95.41
6.2	on the competitive market*	TWh	-	0.13	-	-	0.85	-
7	Consumption of non-households customers:	TWh	2.86**	2.97	103.85	25.86**	26.83	103.75
7.1	on US and last resort regime	TWh	0.10	0.08	80.00	1.14	0.89	78.07
7.2	on the competitive market	TWh	2.76**	2.89	104.71	24.72**	25.94	104.94
8	Transmission–Injection component	TWh	4.29	4.19	97.67	41.08	41.41	100.80
9	Transmission–Extraction component	TWh	4.11	4.21	102.43	39.16	40.51	103.45
10	Actual transmission grid losses	TWh	0.08	0.08	100.00	0.74	0.70	94.59
11	Heat generated for delivery	Tcal	444.83**	469.15	105.47	7981.98**	8821.06	110.51
12	Heat in co-generation	Tcal	278.61	378.28	135.77	6471.76	6814.04	105.29

Note: 1. The generated electricity and delivered electricity are presented according to the data reported by monitored generators, as they are defined as dispatchable in the Regulation of scheduling the dispatchable generation units and consumption units approved by the ANRE Order no. 32/2013;

2. Data shown in the table neither include the energy produced by the generators who do not own dispatchable units (positions 1 & 2) nor the energy delivered to the customers directly connected to the power plants (positions 6 & 7);

3. The imported/exported quantities do not comprise transits and cross-border exchange of CNTEE Tranelectrica SA with neighboring countries in order to ensuring the balance of the national energy system;

4. The electricity quantity for applying the injection tariff is the electricity delivered by the generation units with installed capacity higher than 5 MW linked to the transmission network and distribution network;

5. Households customers consumption for US regime represents electricity consumption invoiced at regulated and “Competitive Market Component” (CMC) tariff.

*Data on this category started to be collected separately in January 2017

4. Transactions’ structure on the wholesale electricity market

The size of wholesale market depends on the sum of all transactions performed by the market players, exceeding the quantities physically transmitted from generation to consumption; the total transactions include also resale transactions made in order to match the contractual obligations and to obtain financial benefit.

When entering into force, the Law no. 123/2012 on Electricity and Natural Gas has set the general principle that energy competitive market and electricity transactions should take place in a transparent, public, centralized and non-discriminatory way. Therefore, all the new transactions have to be the result of participation on the centralized markets administrated by Opcom SA, the only owner of a license issued by ANRE 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 operated by Opcom SA (which ensure the transparent, public, centralized and non-discriminatory character required by the Law) there still exist bilateral negotiated contracts concluded before the entering into force of the Law still pending, export and import contracts and regulated contracts with regulated quantities and prices, based on ANRE decisions concluded between a number of generators and the suppliers of last resort.

Following the entering into force of the Law no. 23/2014 subsequent to Law no. 220/2008 for establishing the system for promoting producing electricity from renewable energy sources, modified and completed by Law no. 122/2015, a specific range of RES generators may conclude negotiated bilateral contracts as follows:

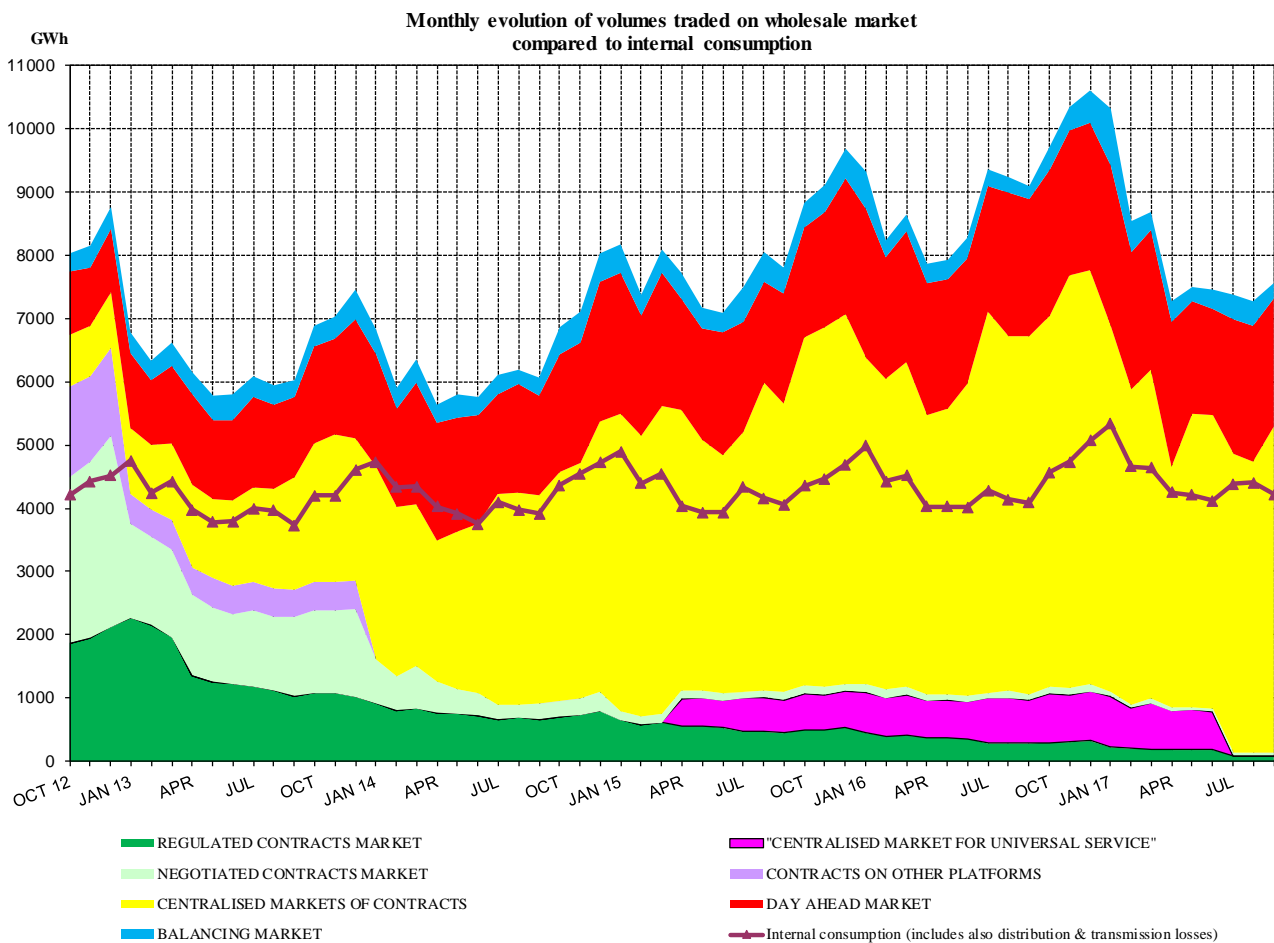
- those owning power plants that benefit from the promotion system and having installed capacity less than 1 MW/generator and less than 2 MW/generator for biomass high efficiency cogeneration, but only with suppliers for final customers;
- those owning power plants that benefit from the promotion system and having installed capacity between 1 and 3 MW/generator and between 2 and 3 MW/generator for biomass high efficiency cogeneration, but only if they are considered small or medium enterprises, according to the Law no. 346/2004.

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. The aggregated volumes and the average prices on negotiated contracts are reported by market participants on their own responsibility and except the concluded contracts based on provisions of Law no. 23/2014 they should reflect only the ongoing contracts which had been concluded before Law no. 123/2012 entered into force.

TRANSACTIONS ON THE WHOLESALE MARKET	August 2017	September 2017	September 2016
1. BILATERAL CONTRACTS' MARKET			
traded volume (GWh)	133	142	361
average price (lei/MWh)	138.05	135.63	138.99
% from internal consumption (%)	3.0	3.4	8.8
1.1. Sales on regulated contracts			
traded volume (GWh)	93	91	283
average price (lei/MWh)	124.23	124.02	133.10
% from internal consumption (%)	2.1	2.1	6.9
1.2. Sales on negotiated contracts¹⁾			
traded volume (GWh)	40	51	78
average price (lei/MWh)	170.63	156.17	160.38
% from internal consumption (%)	0.9	1.2	1.9
2. EXPORT			
traded volume (GWh) ²⁾	406	454	614
average price (lei/MWh)	212.32	178.43	157.21
% from internal consumption (%)	9.2	10.7	15.0
3. CENTRALIZED MARKETS OF CONTRACTS			
traded volume (GWh)	4606	5150	5678
average price (lei/MWh)	171.43	177.85	158.03
% from internal consumption (%)	104.5	121.9	138.8
3.1. Extended auction mechanism CMBC-EA³⁾			
traded volume (GWh)	1939	1922	1385
average price (lei/MWh)	165.74	165.51	158.23
% from internal consumption (%)	44.0	45.5	33.9
3.2. Continuous negotiation mechanism CMBC-CN³⁾			
traded volume (GWh)	924	967	1321
average price (lei/MWh)	176.73	181.91	155.28
% from internal consumption (%)	21.0	22.9	32.3
3.3. CM-OTC mechanism³⁾			
traded volume (GWh)	1742	2261	2972
average price (lei/MWh)	174.94	186.60	159.16
% from internal consumption (%)	39.5	53.5	72.7
4. CENTRALIZED MARKET FOR UNIVERSAL SERVICE - CMUS			
traded volume (GWh)	-	-	691
average price (lei/MWh)	-	-	166.83
% from internal consumption (%)	-	-	16.9
5. DAY AHEAD MARKET			
traded volume (GWh)	2145	2028	2165
average price (lei/MWh) ⁵⁾	260.42	197.66	159.21
% from internal consumption (%)	48.6	48.0	52.9
6. INTRADAY MARKET			
traded volume (GWh)	14.7	8.5	7.4
average price (lei/MWh) ⁵⁾	257.12	153.16	128.62
% from internal consumption (%)	0.3	0.2	0.2
7. BALANCING MARKET			
traded volume (GWh)	385	231	208
% from internal consumption (%)	8.7	5.5	5.1
upward volume (GWh)	274	125	132
average negative imbalance price(lei/MWh)	384	290.71	283.33
downward volume (GWh)	110	106	77
average positive imbalance price (lei/MWh)	88.13	35.21	11.25
INTERNAL CONSUMPTION (GWh) (distribution and transmission losses included)	4408	4224	4090

- Note:
- 1) Supply contracts to final customers and export contracts are not included as they are separately identified;
 - 2) Export volumes and price information correspond to those reported monthly by market participants and include the volumes exported by CNTEE Tranelectrica as shipper for coupled DAM; in some cases those volumes are different from those notified in DAMAS platform;
 - 3) The monthly data are presented as reported by the participants for the electricity delivered in the respective month. These information refer both to transactions concluded previously on CMBC and CMBC-NC (ANRE Order 6/2011) and to transactions concluded on CMBC-EA and CMBC-NC (ANRE Order 78/2014) with delivery within the reported month;
 - 4) Price table price is calculated as the average of the hourly market closing price and it is published by Opcom SA. The average monthly price, published by Opcom SA, calculated as weighted average of the hourly market closing price with traded volumes was in September 2017, 203.17 lei/MWh; .
 - 5) The average monthly price is calculated based on monthly traded volume and transaction value published by Opcom SA.

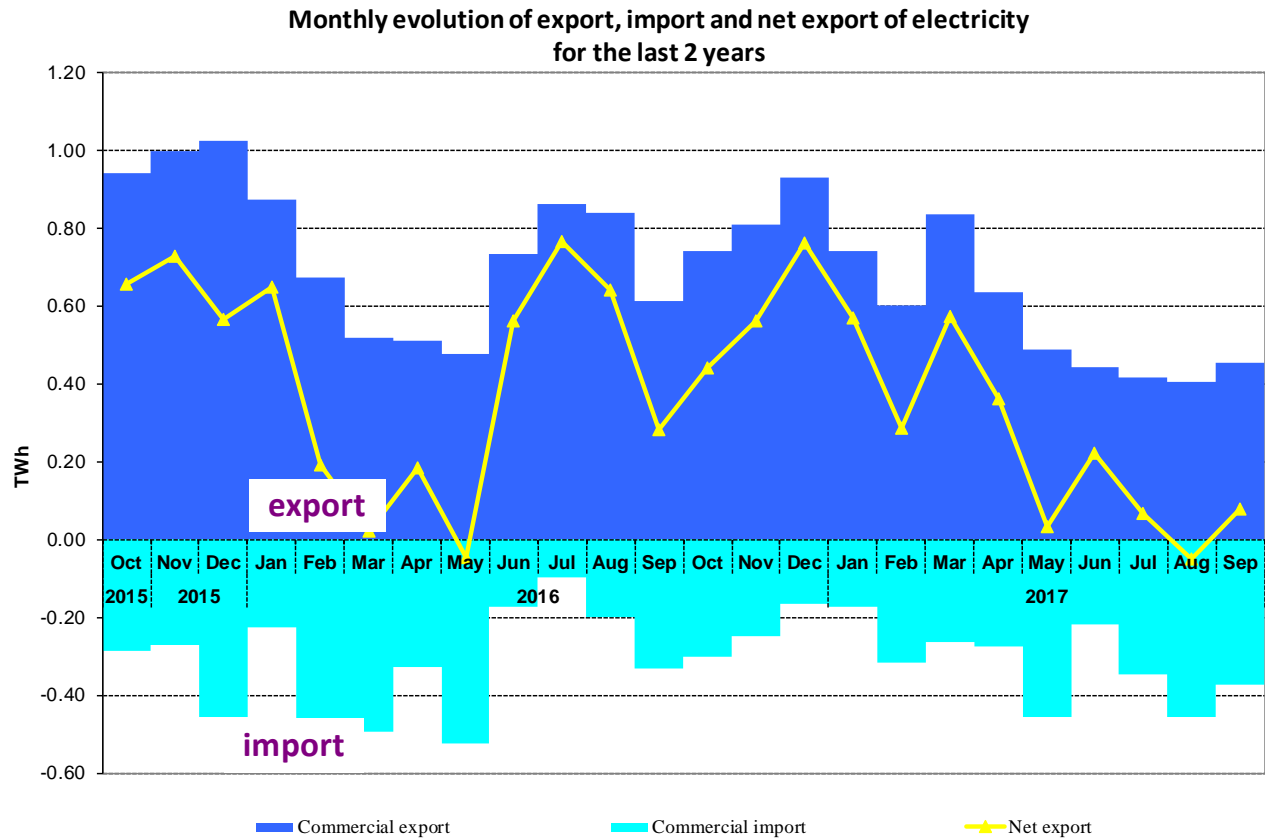
The percentage of electricity quantities from the internal consumption (see table from above) offers a dimensional reference for each of the specified markets. Prices include only the injection component of the transmission tariff, in this way being comparable within a month and making possible the comparison with the previous month. The following graph presents the evolution of the relation between the volumes sold on each market and the estimated internal consumption, since October 2012.



Source: Monthly reports of wholesale market participants. Opcom SA and CNTEE Tranelectrica SA – processed by MG

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

The following graph presents the monthly values of commercial export (quantities for which the extraction component of transmission tariff was applied), commercial import (quantities for which the injection component of transmission tariff was applied) and the net export (export minus import) during the last 24 months:

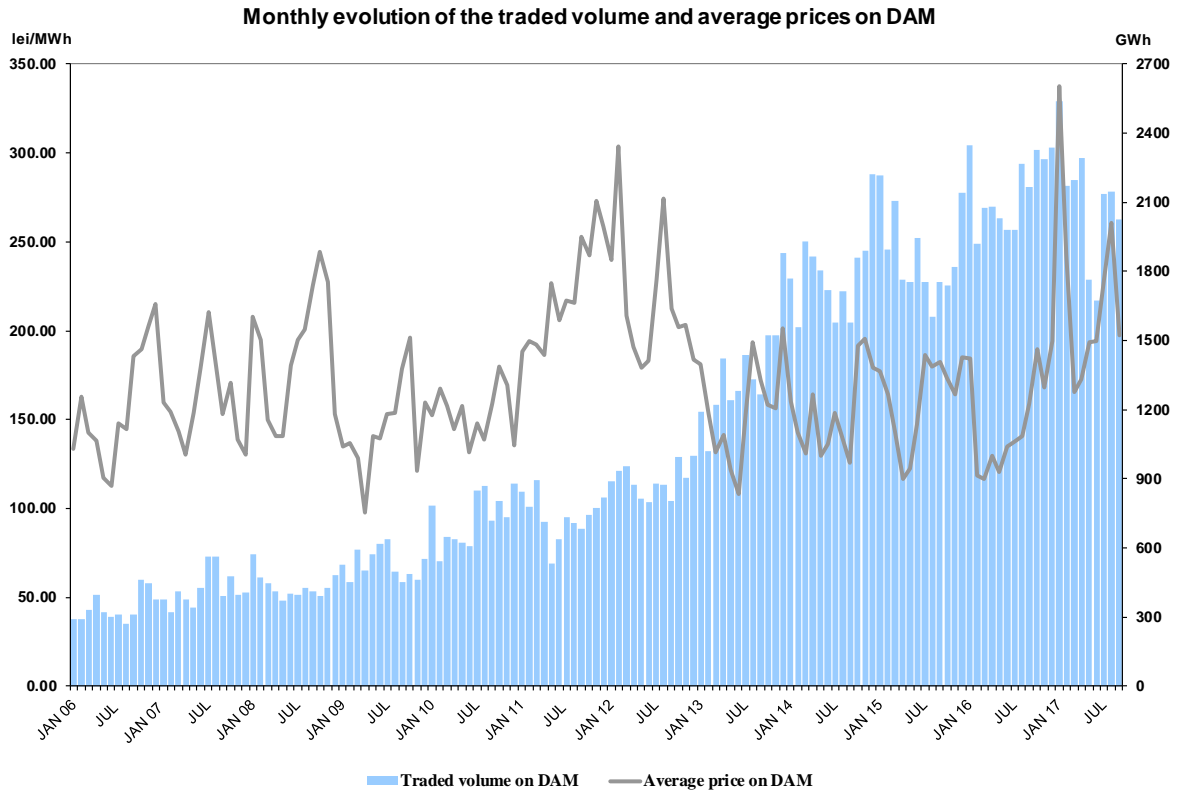


Source: Monthly reports of CNTEE Transelectrica SA – processed by MG

The following table presents commercial export and import transactions for electricity extracted/introduced from/in transmission network. These include transaction of CNTEE Transelectrica SA as shipper agent in the price coupling mechanism of DAM, known as 4M MC. Shipper agent role is reflected in physical and commercial transfer of electricity for import/export on the interconnections between Romania and Hungary.

Import/Export Transactions	August 2017	September 2017	September 2016
Export			
traded volume (GWh)	406	454	614
average price (lei/MWh)	212.32	178.43	157.21
% from internal consumption	9.2	10.7	15.0
in which, for coupled DAM			
traded volume (GWh)	31	31	30
average price (lei/MWh)	201.97	155.16	157.20
% from internal consumption	0.7	0.7	0.7
Import			
traded volume (GWh)	455	375	332
average price (lei/MWh)	287.01	215.31	159.35
% from internal consumption	10.3	8.9	8.1
in which, for coupled DAM			
traded volume (GWh)	291	248	232
average price (lei/MWh)	298.59	221.00	156.17
% from internal consumption	6.6	5.9	5.7

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



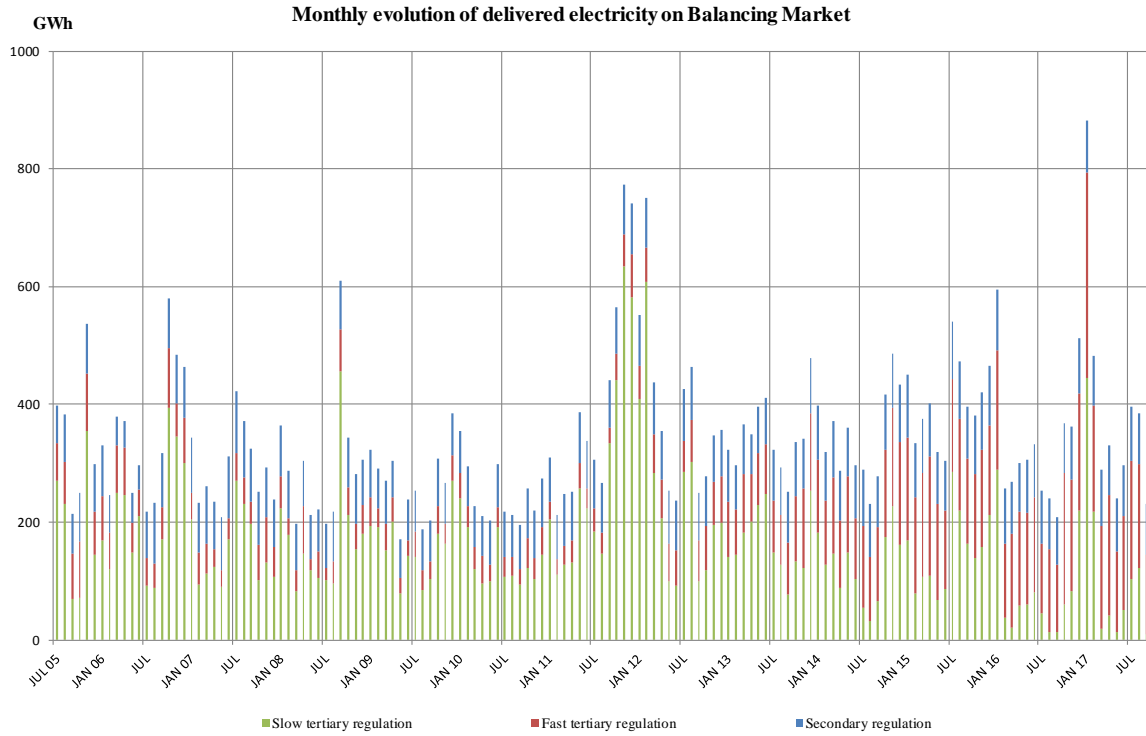
Source: Monthly reports of Opcom SA and CNTEE Tranelectrica SA – processed by MG

Balancing electricity is determined by the dispatch orders (accepted offers) received by generators. After settlement, the actual electricity delivered by generators on balancing market is determined based on the measured (approved) values; the relation between the accepted and delivered electricity in September 2017 is presented in the following table:

September 2017	Dispatch order (GWh)	Delivered electricity (GWh)	Deviation (%)
Secondary regulation	86	86	
<i>upward</i>	39	39	
<i>downward</i>	46	46	
Fast tertiary regulation	144	136	6
<i>upward</i>	80	77	4
<i>downward</i>	64	59	8
Slow tertiary regulation	10	9	3
<i>upward</i>	8	8	3
<i>downward</i>	1	1	4
TOTAL	239	231	
<i>upward</i>	128	125	
<i>downward</i>	111	106	
INTERNAL CONSUMPTION		4224	
% share of traded volumes from internal consumption		5.5%	

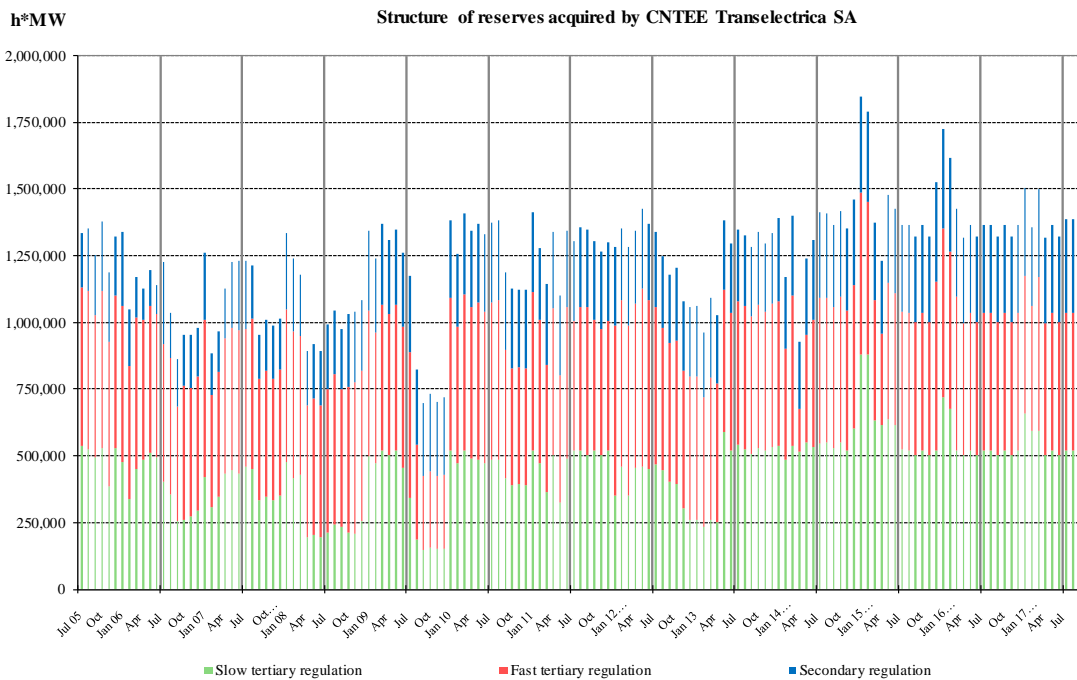
Source: Monthly reports of CNTEE Tranelectrica SA – processed by MG

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



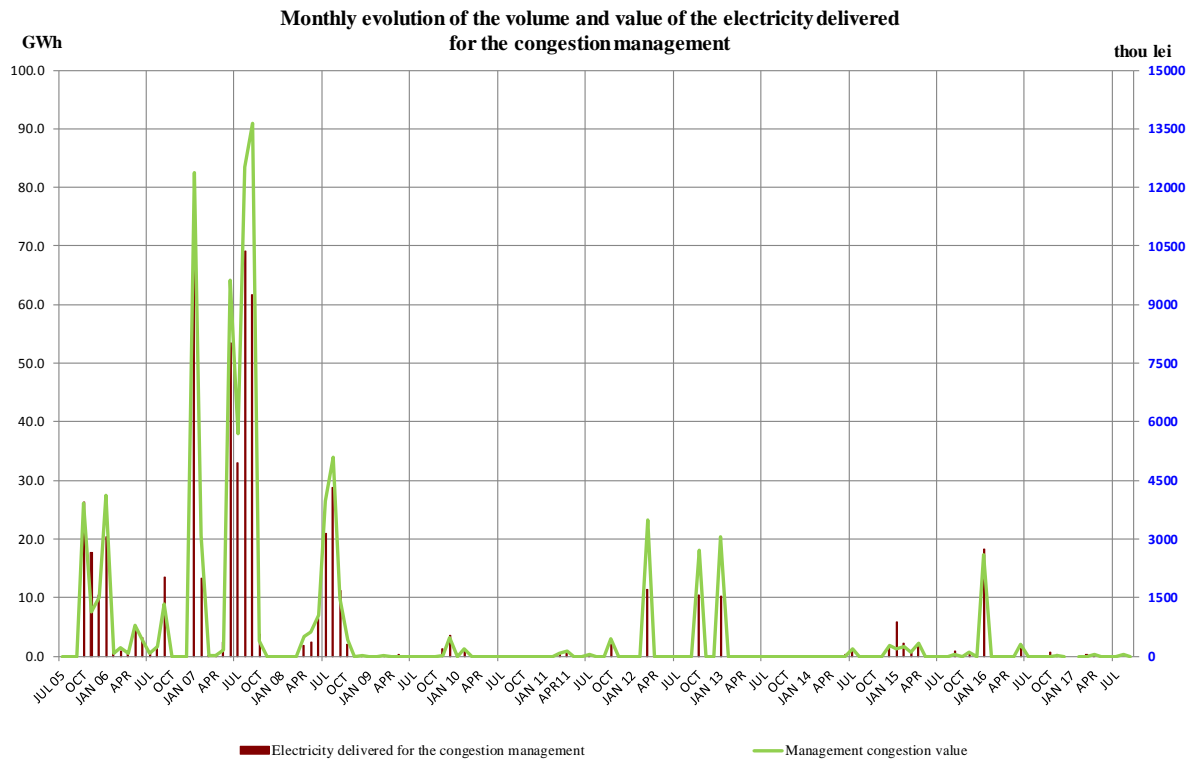
Source: Monthly reports of CNTEE Tranelectrica SA – processed by MG

For comparison, the following graph presents the evolution of reserves (ancillary services, i.e. obligations of generators to maintain their contracted capacities available for dispatching/offering on BM) acquired/paid by CNTEE Tranelectrica SA since July 2005 is showed in the graph below:



Source: Monthly reports of CNTEE Tranelectrica SA – processed by MG

The following graph presents the evolution of electricity traded by CNTEE Tranelectrica SA on the Balancing Market for covering the electricity used for congestion management (in order to solve the congestions occurred within the transmission grid) and the evolution of the values of these transactions starting from July 2005.



Source: Monthly reports of CNTEE Tranelectrica SA – processed by MG

5. Trading structure on the wholesale electricity market of different participant categories

Generators

In September 2017 compared with similar period of 2016, the structure of electricity sales obligations contracted before delivery interval by the electricity generators with dispatchable units was the following:

Transaction type	-GWh-	
	September 2016	September 2017
0	1	2
Regulated contracts to suppliers of last resort - hydro generator	203.50	53.05
Regulated contracts to suppliers of last resort - nuclear generator	79.55	37.71
Negotiated contracts to suppliers	77.96	51.32
Contracts concluded on Opcom centralized markets:	2448.21	3022.32
<i>CMBC-EA</i>	838.57	1756.83
<i>CMBC-CN</i>	913.73	556.19
<i>CM-OTC</i>	695.90	709.30
Centralized market for universal service	356.76	-
DAM	1588.41	1182.62
Intraday	4.71	2.81
Supply contracts to final customers. from which:	282.12	457.68
<i>Households*</i>	-	0.30
<i>Non-households</i>	282.12	457.38
Total	5041.21	4807.51

Source: Monthly reports of generators – processed by MG
 * data on this category started to be collected separately in January 2017

Suppliers

In September 2017, 95 companies with main activity the supply of electricity, concluded transactions on the electricity market; from those, 25 suppliers traded exclusively on the wholesale market and 70 suppliers on both retail and wholesale markets (in this category there are also included the 5 suppliers of last resort which act on both retail and wholesale markets).

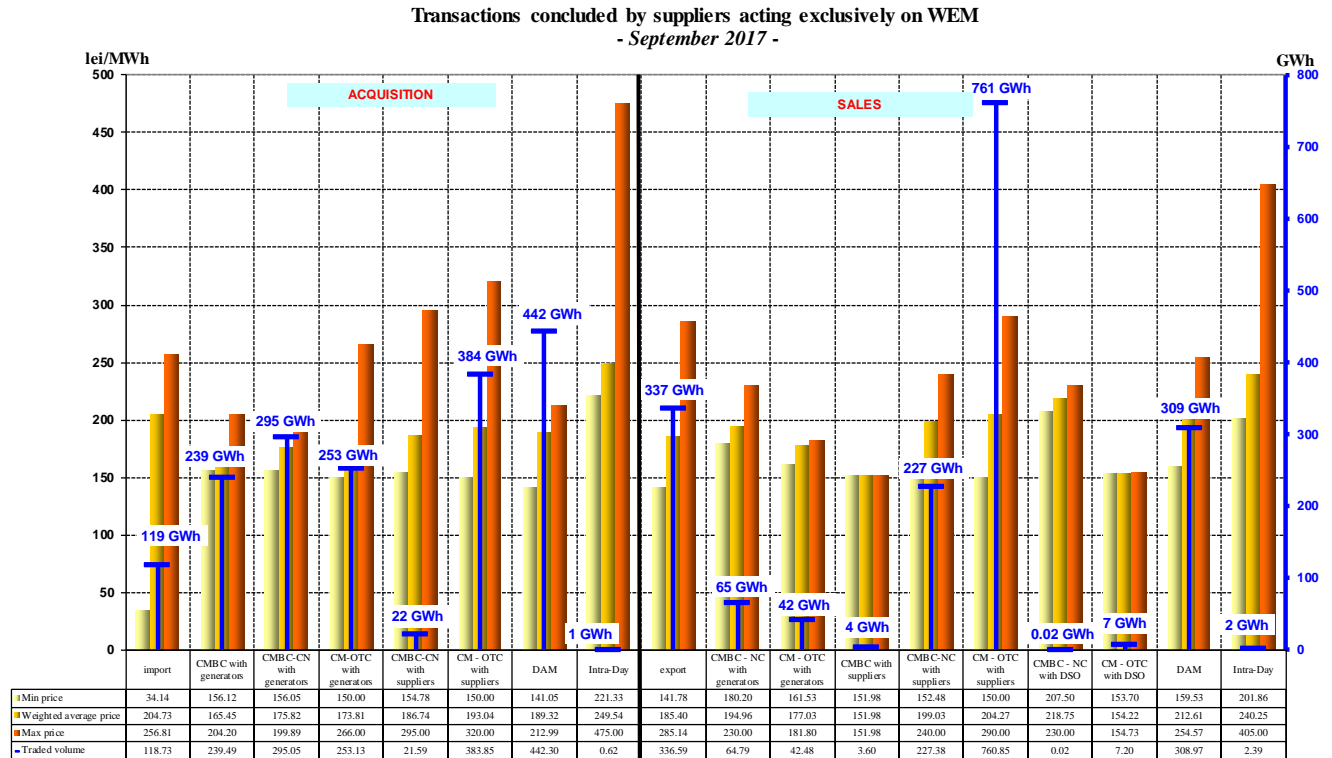
Suppliers acting exclusively on WEM

The following table shows the activity for September 2017 of the suppliers acting exclusively on WEM, acquisitions and sales being split by categories of markets participants, compared with similar period of 2016:

Transactions structure of suppliers acting exclusively on WEM	-GWh-	
	September 2016	September 2017
Purchase		
Import	94.92	118.73
Negotiated contracts with generators	13.06	0.00
Contracts concluded on Opcom centralized markets:	1351.43	1193.10
- on CMBC-EA with generators	174.47	239.49
- on CMBC-CN with generators	365.74	295.05
- on CM-OTC with generators	151.06	253.13
- on CMBC-EA with other suppliers	18.14	0.00
- on CMBC-CN with other suppliers	99.62	21.59
- on CM-OTC with other suppliers	542.42	383.85
DAM	308.48	442.30
Intraday market	1.05	0.62
Sales		
Export	451.53	336.59
Contracts concluded on Opcom centralized markets:	1115.10	1106.31
- on CMBC-CN with generators	8.69	64.79
- on CM-OTC with generators	32.78	42.48
- on CMBC-EA with other suppliers	84.18	3.60
- on CMBC-CN with other suppliers	150.22	227.38
- on CM-OTC with other suppliers	808.67	760.85
- on CMBC-EA with DO	8.96	0.00
- on CMBC-CN with DO	0.00	0.02
- on CM-OTC with DO	14.40	7.20
- on CMBC-EA with TSO	7.20	0.00
CMUS with last resort suppliers	67.86	-
DAM	130.14	308.97
Intraday market	2.21	2.39

Source: Monthly reports of suppliers – processed by MG

In addition to the data from the table above, the following graph presents the minimum, average and maximum actual prices by categories of transactions completed by the suppliers acting exclusively on WEM (traders) in September 2017.



Source: Monthly reports of the competitive suppliers – processed by MG

Active suppliers on REM (the suppliers of last resort are not included)

The following table presents aggregated information on transactions volume and structure for suppliers providing electricity to final customers, on the competitive market, for September 2017 compared with similar period of 2016:

Transactions' structure of suppliers acting on REM (suppliers of last resort excluded)	-GWh -	
	September 2016	September 2017
Purchase		
Import	1.50	8.13
Negotiated contracts with generators	65.45	52.60
Contracts concluded on Opcom centralized markets:	3152.00	2038.92
- on CMBC-EA with generators	454.20	981.66
- on CMBC-CN with generators	258.92	170.38
- on CM-OTC with generators	465.07	222.46
- on CMBC-EA with other suppliers	336.87	42.77
- on CMBC-CN with other suppliers	116.07	101.22
- on CM-OTC with other suppliers	1520.86	520.42
Negotiated contracts with undispachable generators (others than L23/2014 and L122/2015)*	6.79	7.72
Negotiated contracts with undispachable generators (L23/2014 and L122/2015)**	25.02	27.08
DAM	801.40	294.72
Intraday market	3.62	3.65

Sales		
Export	128.80	85.87
Contracts concluded on Opcom centralized markets:	2022.59	910.15
- on CMBC-EA with generators	11.95	31.49
- on CMBC-NC with generators	13.78	2.58
- on CM-OTC with generators	23.24	10.80
- on CMBC-EA with other suppliers	277.07	47.81
- on CMBC-NC with other suppliers	212.99	112.76
- on CM-OTC with other suppliers	1364.37	620.14
- on CMBC-EA with DO	97.22	70.42
- on CMBC-NC with DO	0.37	10.80
- on CMBC-EA with TSO	21.60	3.36
CMUS with last resort suppliers	266.70	-
DAM	149.58	217.41
Intraday market	0.06	1.03
Household customers***	-	16.31
Non-household customers	1495.85	1186.72

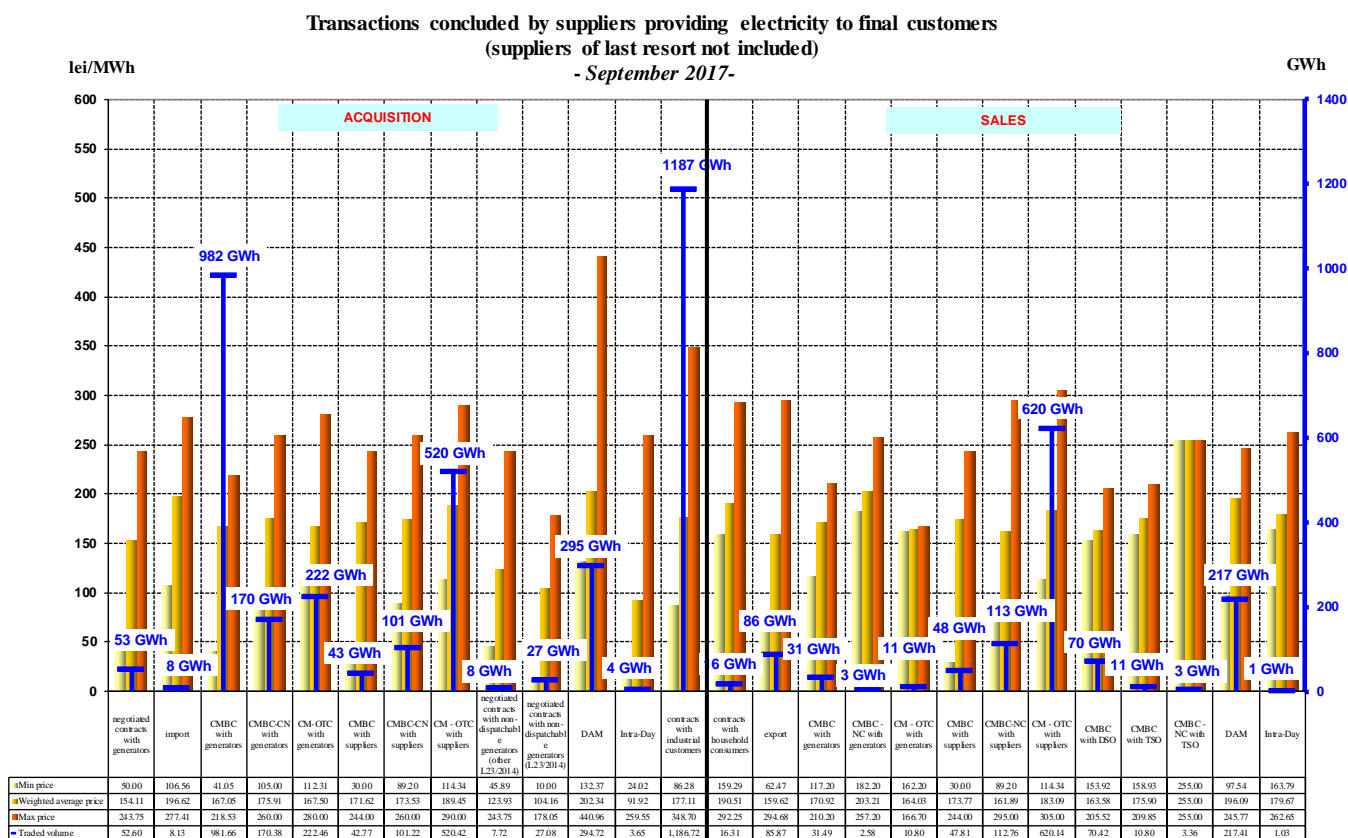
Source: Monthly reports of the competitive suppliers– processed by MG

*negotiated trades concluded with undispachable generators which are not able to conclude contracts according to Law 23/2014 provisions. with subsequent changes and additions of Law no. 122/2015. both Laws subsequent to Law no. 220/2008

**negotiated trades concluded with undispachable generators which may conclude contracts according to Law 23/2014 provisions. with subsequent changes and additions of Law no. 122/2015. both Laws subsequent to Law no. 220/2008

*** separate data collection on this category started with January 2017

In addition to the data from the table above, the following graph presents the sales structure and the minimum, average and maximum actual prices by categories of transactions completed by suppliers providing electricity to final customers September 2017:



Source: Monthly reports of the competitive suppliers– processed by MG

Suppliers of last resort

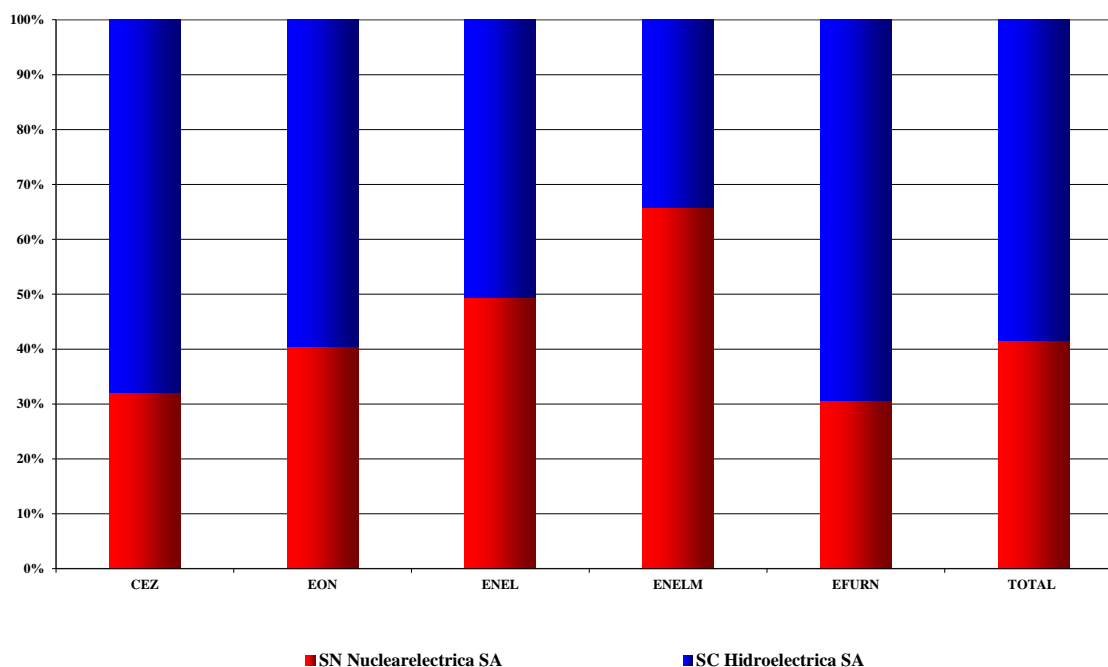
Electricity transactions structure of suppliers of last resort (before the delivery interval) for supplying the customers under SU and UI regime is presented in the table below, for September 2017 compared to similar period of 2016:

- GWh -		
Transactions structure of suppliers of last resort for supplying the customers in SU and UI regime	September 2016	September 2017
Regulated contracts with generators	283.05	90.76
Negotiated contracts with undispachable generators (L23/2014 and L122/2015)*	0.03	0.03
Contracts concluded on Opcom centralized markets:	80.32	288.01
- contracts on CMBC-EA with generators	5.31	15.05
- contracts on CMBC-CN with generators	21.76	14.40
- contracts on CM-OTC with generators	28.64	24.80
- contracts on CMBC-EA with other suppliers	7.39	0.81
- contracts on CMBC-CN with other suppliers	10.88	21.70
- contracts on CM-OTC with other suppliers	6.34	211.25
Centralized market for universal service:	691.32	-
- contracts on CMUS with generators	356.76	-
- contracts on CMUS with suppliers	334.56	-
Transactions concluded on DAM:	-6.50	539.72
- purchase	48.78	550.70
- sales	55.27	10.98
Transactions concluded on Intraday market:	0.00	0.22
- purchase	0.00	0.22
- sales	0.00	0.00

*negotiated trades concluded with undispachable generators which may conclude contracts according to Law 23/2014 provisions with subsequent changes and additions of Law no. 122/2015 both Laws subsequent to Law no. 220/2008

The structure of the electricity purchased by the suppliers of last resort from the main generators on regulated contracts is presented in the following graph for September 2017:

**Electricity aquisition from main generators, on regulated contracts, of the suppliers of the last resort for delivering electricity to final consumers on regulated market
SEPTEMBER 2017**



Source: Monthly reports of the suppliers of last resort – processed by MG

The suppliers of last resort separately display in the bills of their customers the “Competitive Market Component” (CMC). This tariff component was proposed by each supplier of last resort and finally approved by ANRE. In accordance with the provisions of ANRE Order no. 83/2013 for approving the Methodology to set up prices and tariffs to the final customers who choose not to exercise their eligibility rights. Since July 01 2013, CMC is separately highlighted within the household invoice. In order to reduce the gap between acquisition prices of electricity bought for covering the consumption at CMC tariffs. ANRE approved in July 2014 the regulatory framework for the Centralised Market for Universal Service (CMUS). This centralised market operated by OPCOM became operational in April 2015 by implementing the trading mechanism. Consequently, the acquisition process of the forecasted demand to be invoiced with CMC tariffs is made in a centralised manner on CMUS and the difference between invoiced and forecasted demand is to be covered from DAM. The demand of final customers who are delivered in last resort regime is to be covered from the centralised markets – CMBC-EA, CMBC-CN, CM-OTC, DAM and ID.

The following table presents the electricity acquisition structure of suppliers of last resort for US (before the delivery interval) for September 2017 compared to similar previous period:

-GWh-

Transactions' structure of suppliers of last resort for universal service	September 2016		September 2017	
	Quantity [GWh]	Average price [lei/MWh]	Quantity [GWh]	Average price [lei/MWh]
Contracts concluded on Opcom centralized markets:	0.00	0.00	258.59	238.63
- on CMBC-CN with generators	0.00	0.00	14.40	208.71
- on CM-OTC with generators	0.00	0.00	21.36	273.42
- on CMBC-EA with other suppliers	0.00	0.00	0.72	203.17
- on CMBC-CN with other suppliers	0.00	0.00	21.59	216.79
- on CM-OTC with other suppliers	0.00	0.00	200.52	239.55
Contracts concluded on CMUS:	691.32	166.83	-	-
- contracts on CMUS with generators	356.76	168.08	-	-
- contracts on CMUS with suppliers	334.56	165.49	-	-
Transactions concluded on DAM:	-12.63	-	516.46	-
- purchase	24.94	184.88	517.20	212.74
- sales	37.57	147.51	0.74	123.18
TOTAL	678.69	168.56	775.05	221.46

The following table presents the electricity acquisition structure of suppliers of last resort (before the delivery interval) corresponding to the competitive REM (energy supplied at negotiated prices to the customers who renounced to regulated tariffs) for September 2017 compared to similar previous period:

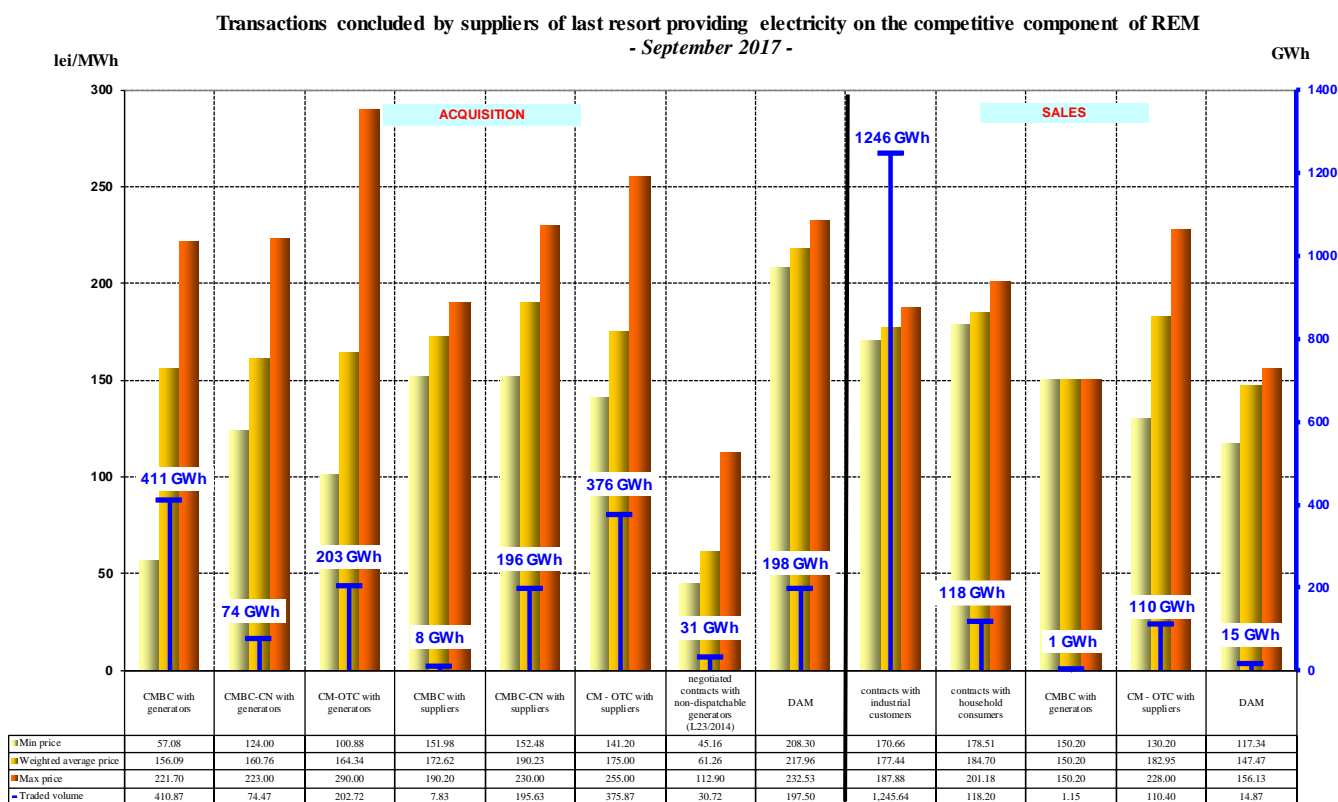
Transactions' structure of suppliers of last resort for the competitive segment of REM	September 2016	September 2017
Purchase		
Contracts concluded on Opcom centralized markets:	790.25	1267.39
- on CMBC-EA with generators	161.42	410.87
- on CMBC-CN with generators	264.38	74.47
- on CM-OTC with generators	47.87	202.72
- on CMBC-EA with other suppliers	36.92	7.83
- on CMBC-CN with other suppliers	143.85	195.63
- on CM-OTC with other suppliers	135.82	375.87
Negotiated contracts with undispachable generators (L23/2014 and L122/2015)*	17.57	30.72
DAM	273.73	197.50
ID	0.00	2.14

Transactions' structure of suppliers of last resort for the competitive segment of REM	September 2016	September 2017
Sales		
Contracts concluded on Opcom centralized markets:	92.06	111.55
- on CMBC-EA with other generators	0.00	1.15
- on CMBC-CN with other generators	14.40	0.00
- on CMBC-EA with other suppliers	38.06	0.00
- on CMBC-CN with other suppliers	7.20	0.00
- on CM-OTC with other suppliers	32.40	110.40
DAM	6.16	14.87
Household customers**	-	118.20
Non-household customers	976.93	1245.64

*negotiated trades concluded with undispatchable generators which may conclude contracts according to Law 23/2014 provisions with subsequent changes and additions of Law no. 122/2015 both Laws subsequent to Law no. 220/2008

* data on this category started to be collected separately in January 2017

The structure by types of sources/destinations of the traded volumes combined with the actual average prices of the suppliers of last resort corresponding to the competitive segment of REM is presented in the following graph for September 2017:



Source: Monthly reports of the suppliers of last resort – processed by MG

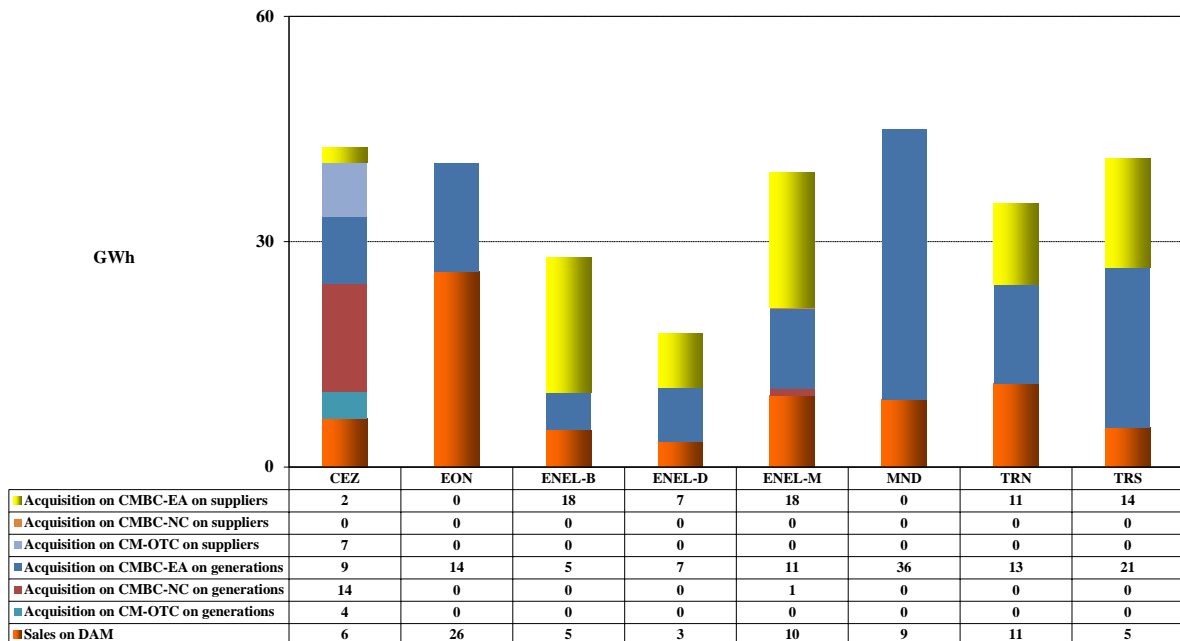
Main distribution operators

The following table shows the electricity acquisition structure of main distribution operators (before the delivery interval), for covering the distribution network losses, for September 2017 compared with similar previous period:

Transactions' structure	September 2016	September 2017
Contracts concluded on Opcom centralized markets:	204.28	213.30
- CMBC-EA with generators	68.93	116.87
- CMBC-CN with generators	7.20	15.20
- CM-OTC with generators	7.20	3.60
- CMBC-EA with suppliers	106.18	70.42
- CMBC-CN with suppliers	0.37	0.02
- CM-OTC with suppliers	14.40	7.20
Transactions concluded on Intraday market	0.27	0.11
- purchase	0.27	0.11
- sales	0.00	0.00
Transactions concluded on DAM:	71.39	75.15
- purchase	75.75	75.67
- sales	4.36	0.52

The electricity purchased for covering their network losses is presented in detail in the following graph, for September 2017:

Electricity acquisition of distribution operators for covering the distribution losses
September 2017



Source: Monthly reports of the distribution operators – processed by MG

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

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

- HHI. Herfindahl-Hirschman Index = sum of square market shares (%) of participants:
The indicator values signify:

HHI < 1000	non-concentrated market;
1000 < HHI < 1800	moderately concentrated market;
HHI > 1800	highly concentrated market.
- C1 = market share of the main market participant (%)
The indicator values signify:

C1 > 20%	alarming concentrated market;
C1 > 40%	suggests the existence of a dominant position;
C1 > 50%	clearly indicates a dominant position.
- C3 = sum of market shares of the main three participants in the market (%):
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.

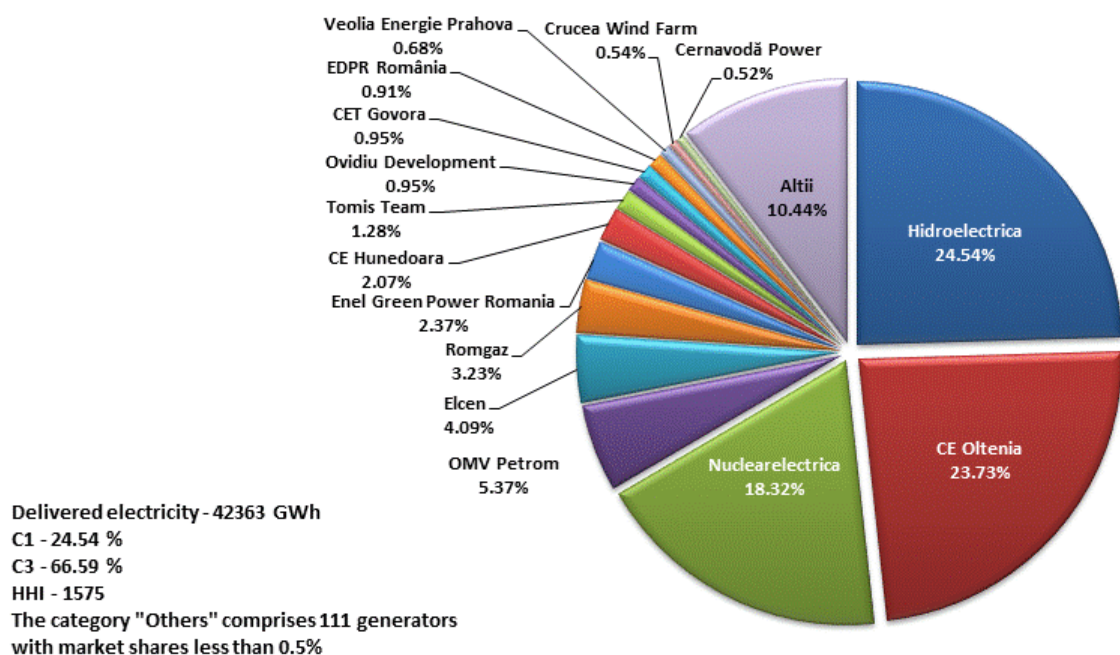
Concentration indicators and market shares of the electricity generators

The market structure regarding the electricity generation offers an initial basis for analyzing the possible competitiveness level of the electricity market.

The following table presents the concentration indicators of generation for September 2017 calculated based on electricity delivered into the networks by the generators with dispatchable units while the graph shows the dispatchable generators market shares for the first eight-month period.

Concentration indicators - September 2017 -	C1 (%)	C3 (%)	HHI
Value	25.24	66,89	1591

**Market share of generators
with dispatchable units by
delivered electricity
January - September 2017**



Source: Monthly reports of generators – processed by MG

A component of the WEM on which direct competition between generators exists 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 September 2017:

Structure/concentration indicators of BM September 2017	Regulation					
	Secondary		Fast tertiary		Slow tertiary	
	upward	downward	upward	downward	upward	downward
C1 - % -	58	57	81	52	80	70
C3 - % -	100	100	95	100	98	100
HHI	4761	4826	6713	3864	6589	5386

Source: Monthly reports of CNTEE Transelectrica SA – processed by MG

In order to maintain the level of security in the NES functioning, due to significant increase of the number of RES generators, Ancillary Services are ensured both on market mechanisms and regulated contracts. Based on GD no. 941/2014 provisions for modifying art. no. 4 of GD no. 138/2013 regarding approving some measures for electricity supplying security and for extension of a term they were established regulated quantities for fast tertiary and slow tertiary reserves.

Besides that, CNTEE Transelectrica SA has organised auctions for acquiring reserves on the competitive component for secondary reserve, fast tertiary and slow tertiary reserve.

The relationship between regulated and competitive components on the Ancillary Services Market (ASM) as well as the main concentration indicators on each type of reserve (secondary, fast tertiary and slow tertiary) are presented in the following table, for September 2017.

Concentration indicators on ASM - September 2017 -		Secondary reserve	Fast tertiary reserve	Slow tertiary reserve
regulated component	contracted quantity (h*MW)	-	14400	345600
	C1 (%)	-	100.00	100.0
	C3 (%)	-	100.0	100.0
competitive component	contracted quantity (h*MW)	329900	483600	158400
	C1 (%)	58.7	82.5	52.3
	C3 (%)	100.0	94.0	100.0
	HHI	4829	6898	5010

Source: Monthly reports of CNTEE Transelectrica SA – processed by MG

Concentration Indexes for the Day Ahead Market

Day Ahead Market (DAM) is a voluntary market. opened both for buying and selling for all types of market participants: generators, suppliers, grid operators, under applicable regulations.

The concentration indicators on DAM reflects 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 buying and for selling side of DAM based on quantities traded by participants on this market.

Concentration indicators on DAM - September 2017 -	C1 (%)	C3 (%)	HHI
Selling	14.87	36.72	586
Buying	14.01	34.97	656

Source: Monthly reports of Opcom SA – processed by MG

7. Price evolution on wholesale electricity market

Starting with November 2014 the Romanian DAM is working coupled with the spot markets from Hungary, Slovakia and Czech Republic based on the price coupling mechanism, project known as 4M MC. This coordinated correlation 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 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 accomplished through the operators OTE-Czech Republic, EPEX Spot (operating as services supplier for OKTE-Slovakia and HUPX-Hungary) and from 17th of January 2017 OPCOM-Romania (who became PCR member from 1st January 2016). After successfully 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 performed was carried out in safety conditions of coupled functioning 4M MC day-ahead markets. Coupling operators are acting as Coordinators on a monthly rotation basis.

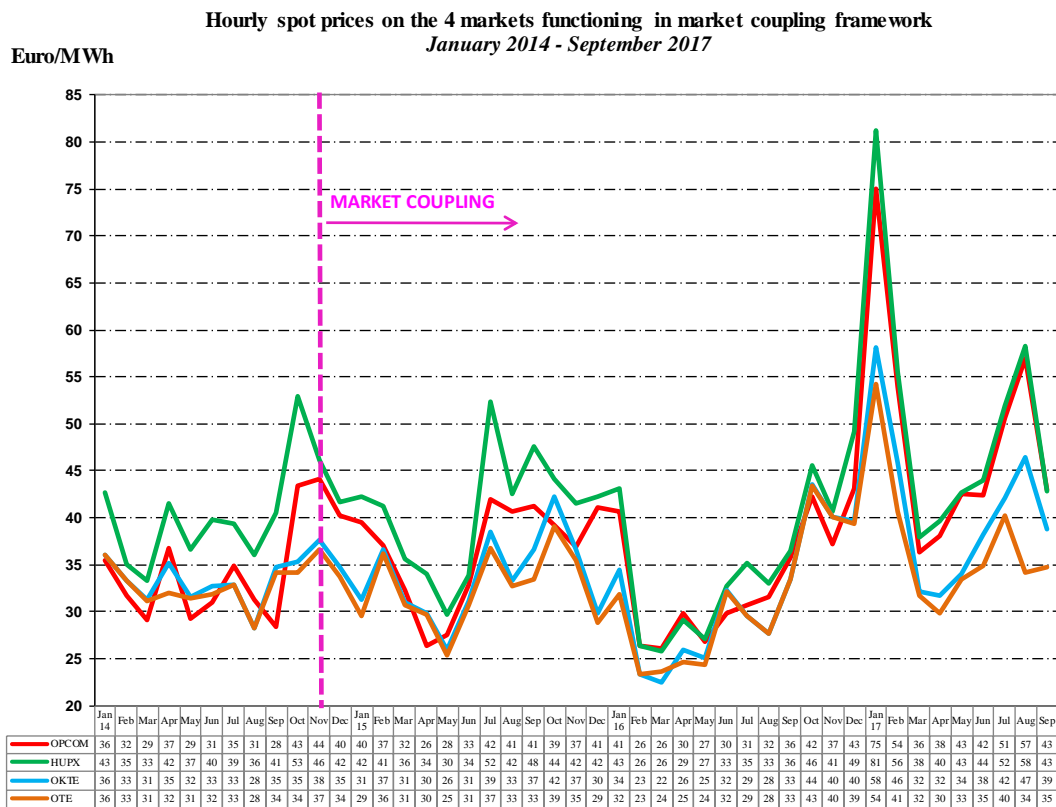
According to EU legislation, coordinated cross border capacity allocation is under the governance of the transmission system operators from the 4 countries and the allocation model to be used is the default allocation on DAM of the available interconnection capacity.

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

Thus, for each month of the year, reserved capacity for DAM allocation is determined as a difference between monthly ATC for each subperiod and 80% from the lowest value between the ATC resulted for subperiods of the month, incremented with the already allocated capacity at the yearly auction but which has been returned to TSO.

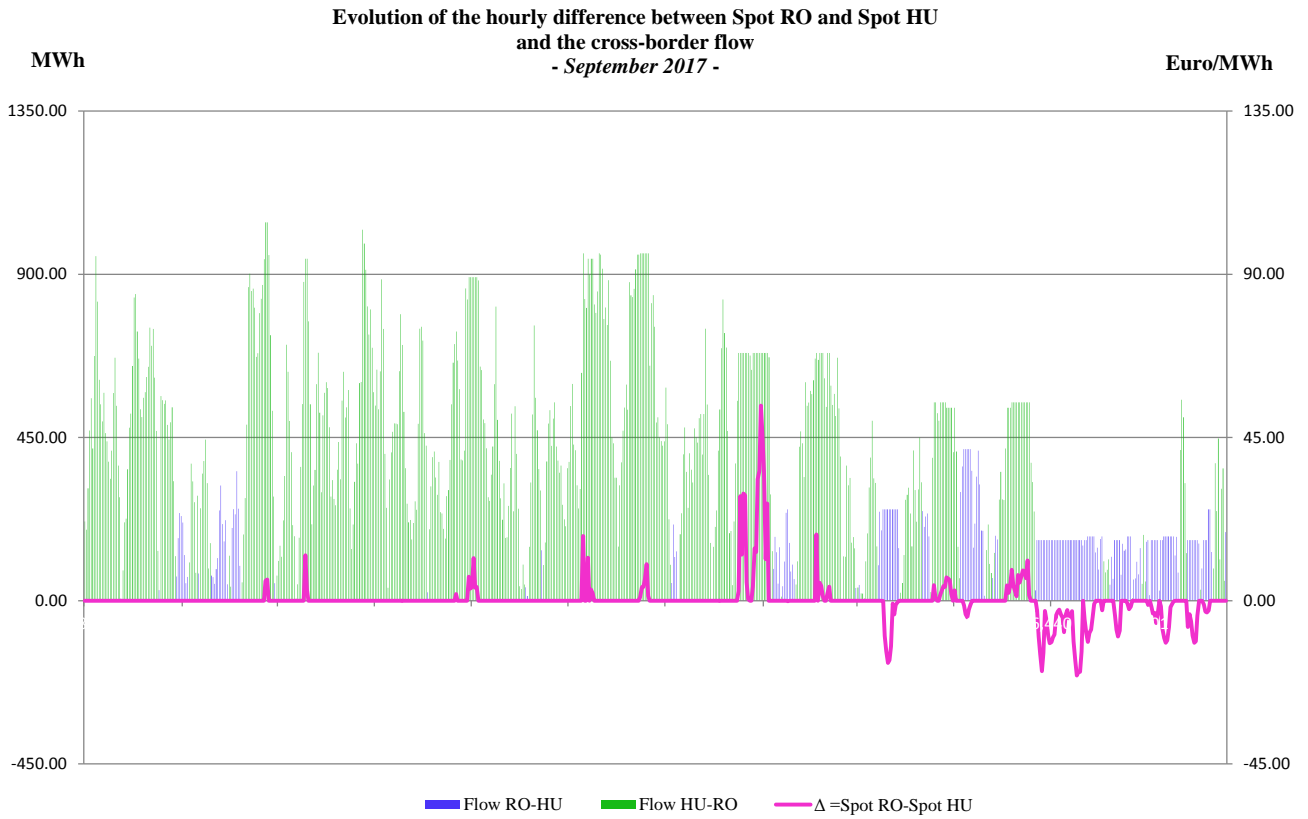
Particularly, for Hungarian border, if 80% from the lowest value of the ATC resulted for monthly subperiods is lower than 80 MW. ATC for monthly allocation will be 80% from the ATC calculated for each subperiod incremented with the already allocated capacity at the yearly auction but which has been returned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

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



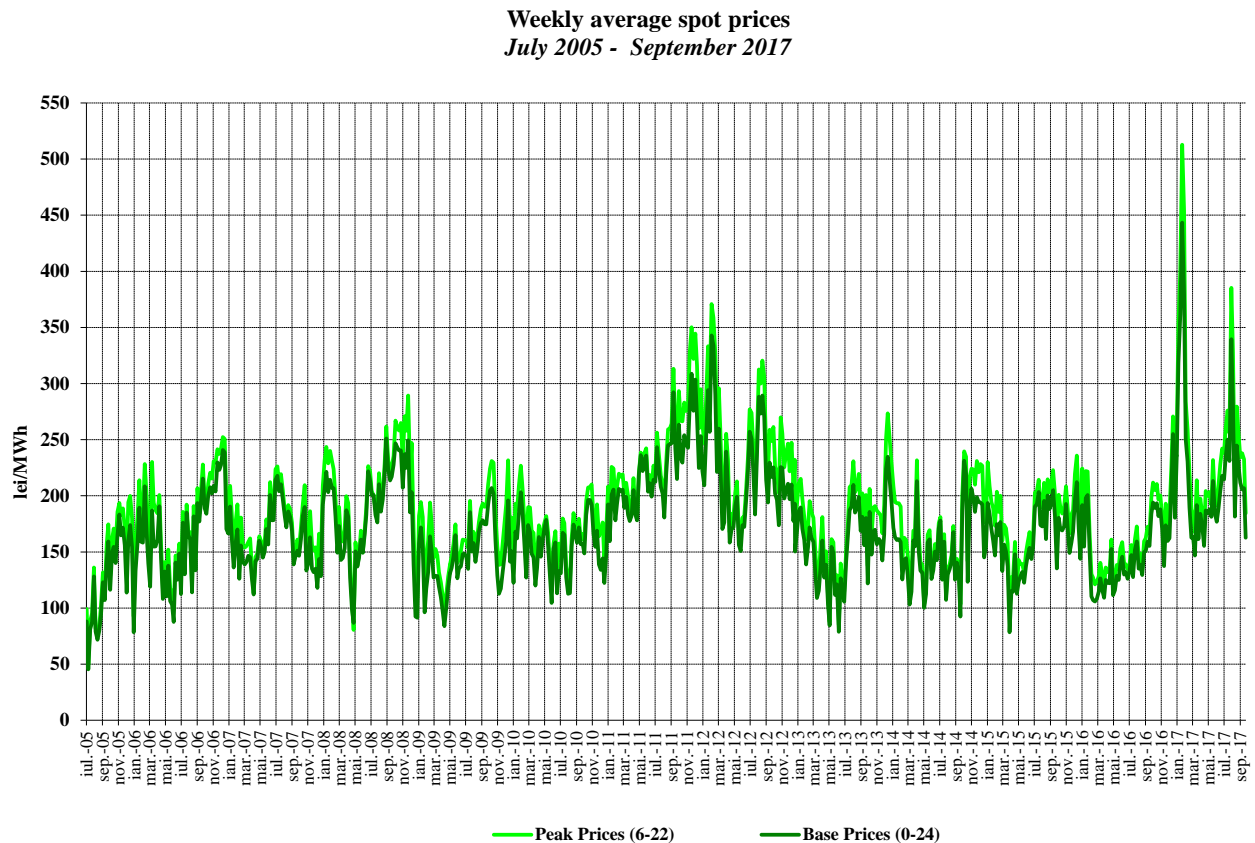
Source: Monthly reports of Opcom SA – processed by MG

The following graph presents the evolution of September 2017 hourly gap between DAM prices in Romania and Hungary as a result of the functioning of coupled markets, correlated with the cross border flows RO-HU for both directions.



Source: Data published by Opcom SA – processed by MG

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



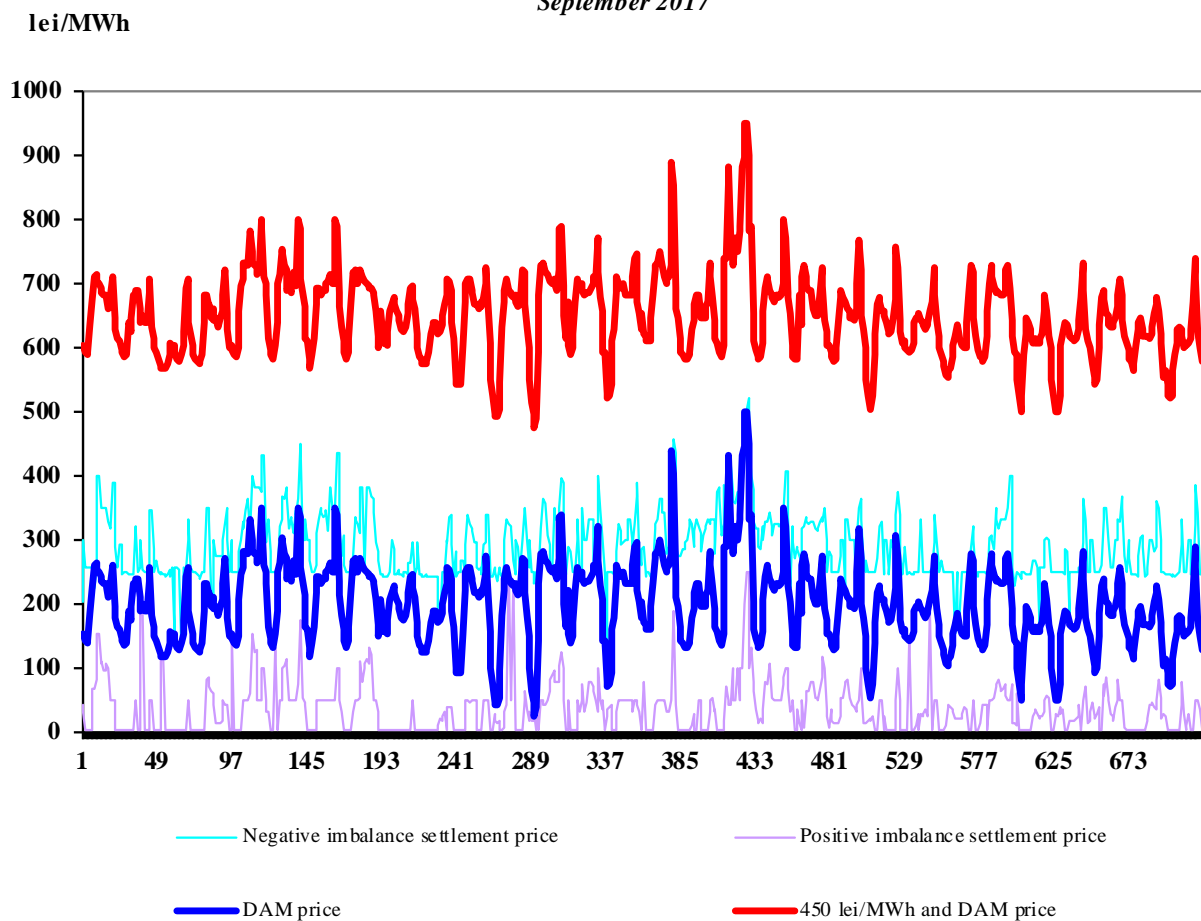
Source: Daily reports of Opcom SA – processed by MG

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

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

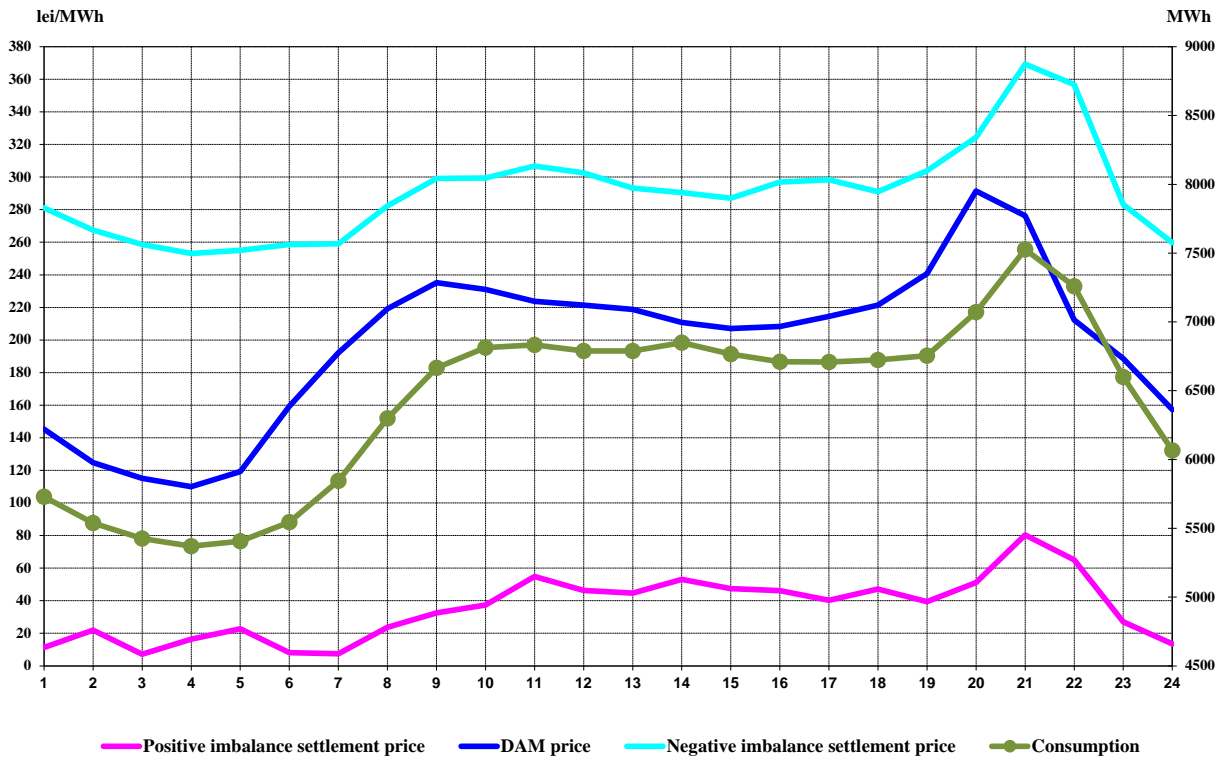
Hourly settlement prices

September 2017



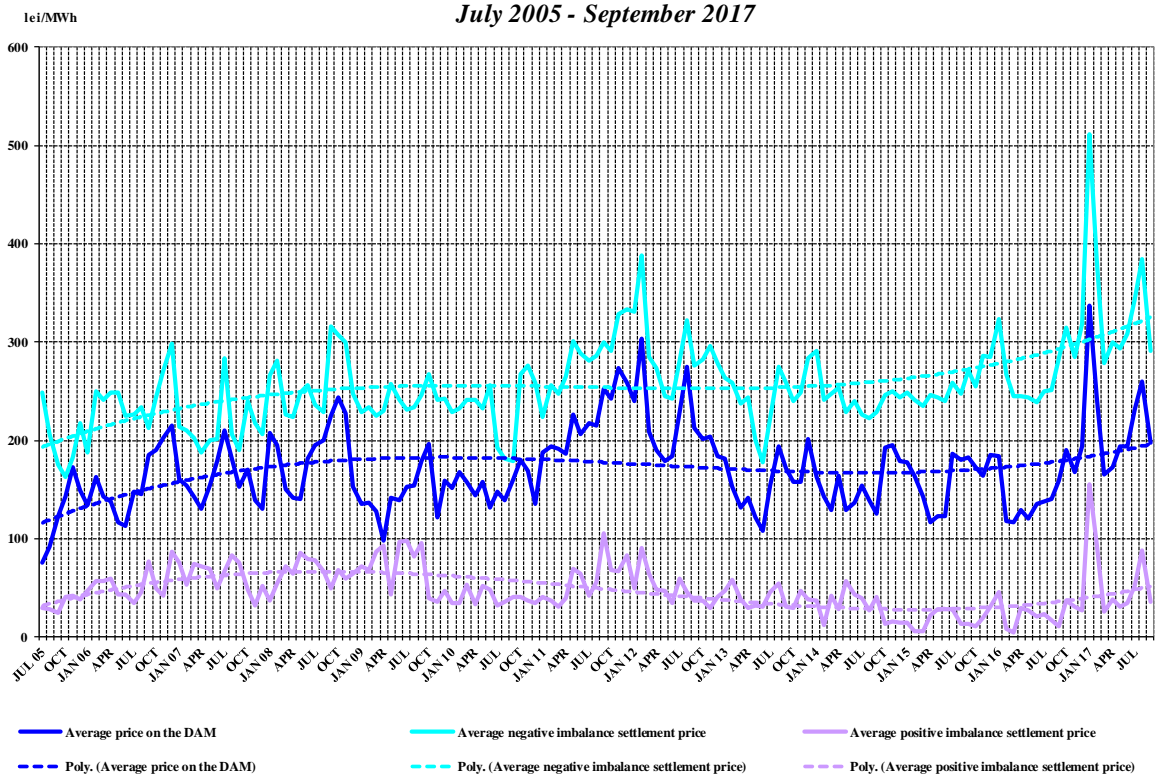
Source: Daily/monthly reports of Opcom SA – processed by MG

Hourly average settlement prices and internal consumption
September 2017



Source: Monthly reports of Opcom SA and CNTEE Tranelectrica SA – processed by MG

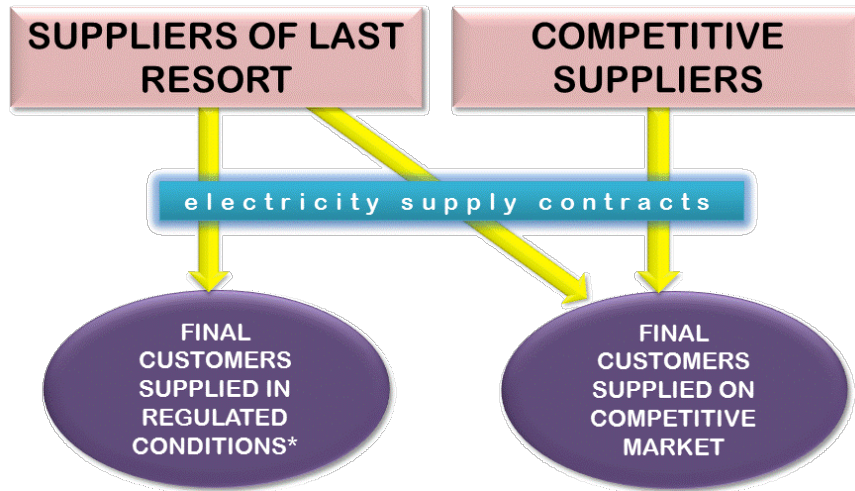
Monthly average prices on DAM and BM
July 2005 - September 2017



Source: Monthly/daily reports of Opcom SA – processed by MG

III. RETAIL ELECTRICITY MARKET

1. Structure of the retail electricity market

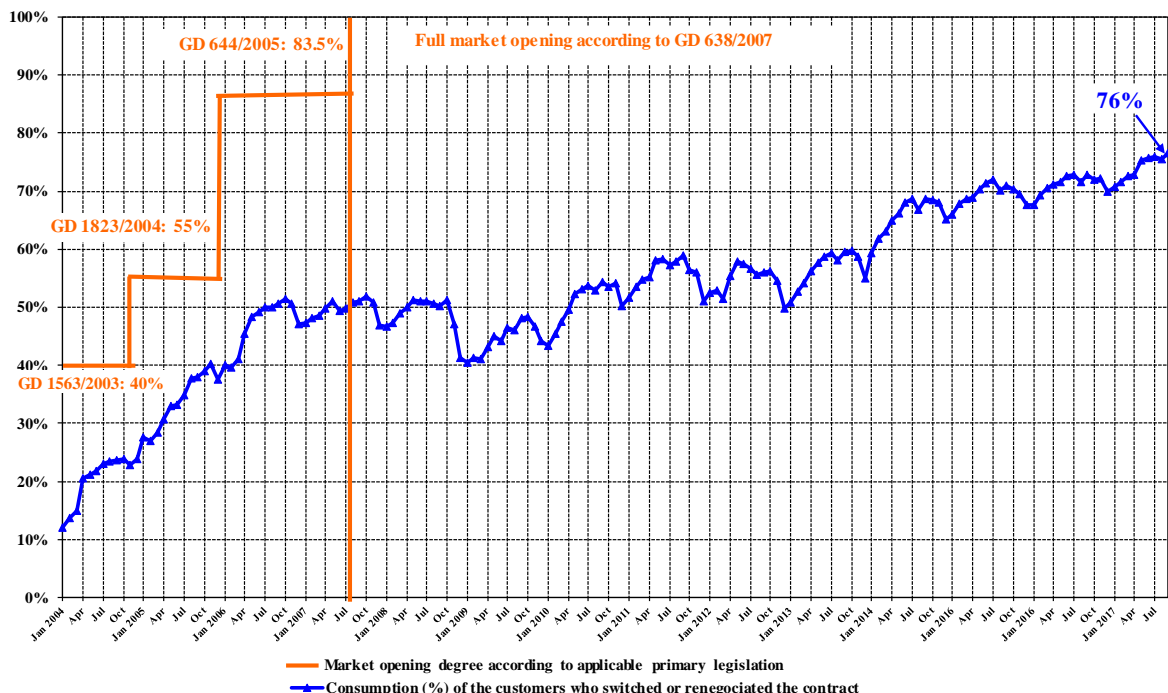


* according to art. 53 (2) and art. 55 (1) from Electricity and Gas Law no. 123/2012

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 – September 2017. The values presented are cumulated from the beginning of the opening process and are presented monthly:

Opening degree evolution of electricity market
January 2004 - September 2017

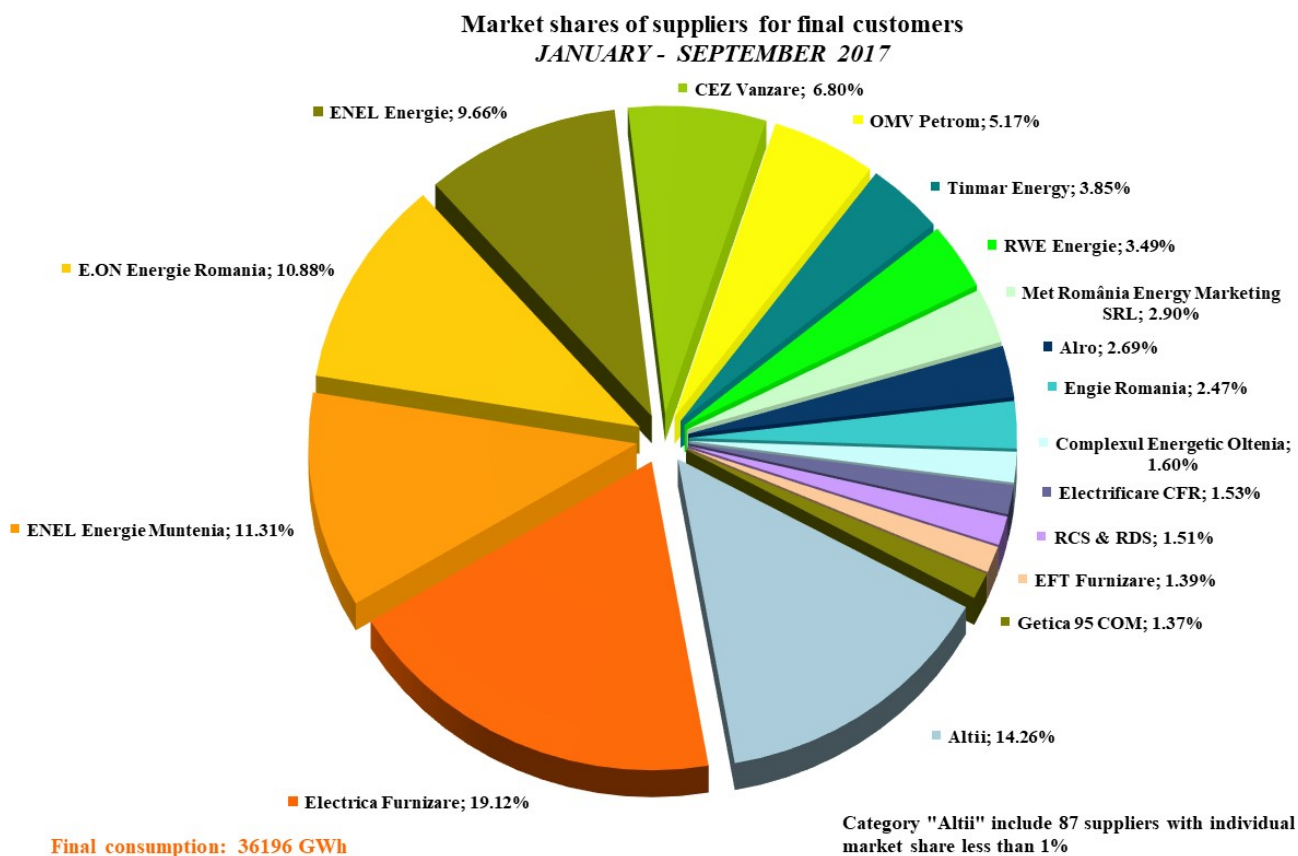


Source: Monthly reports of the final customers' suppliers – processed by MG

3. Market shares of the electricity suppliers

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

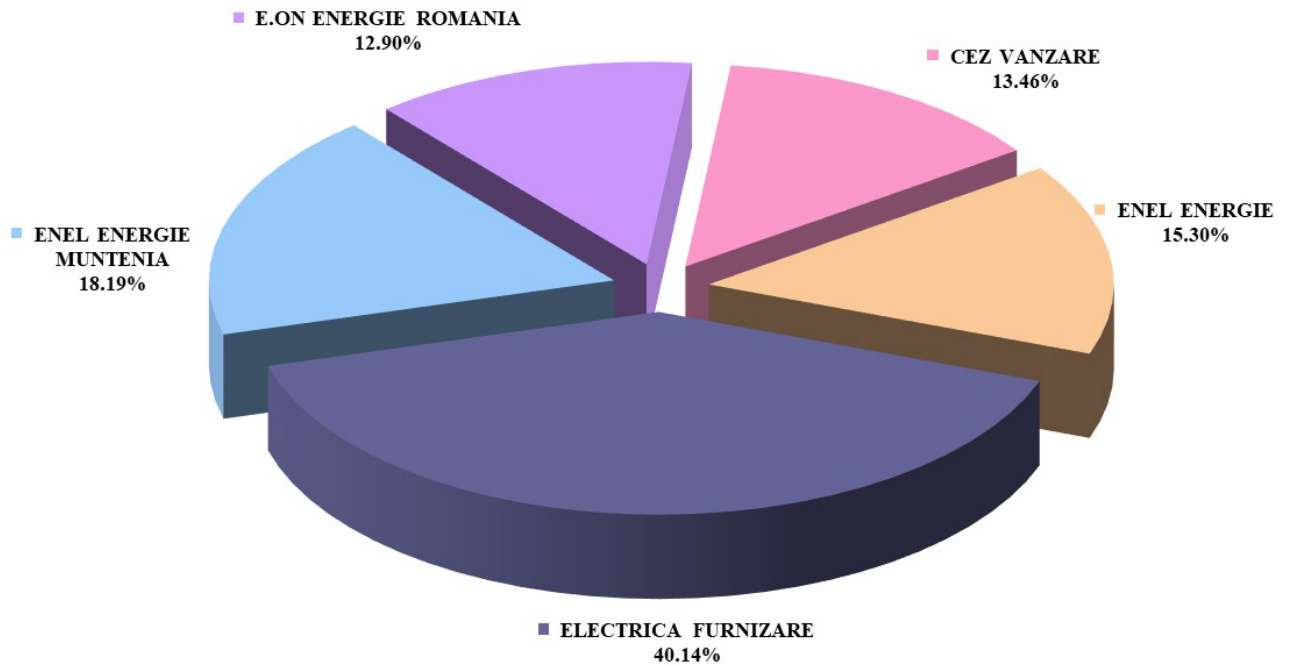
- a) for all suppliers acting on REM including the suppliers of last resort based on the electricity supplied to the final customers (on regulated tariffs, CMC and last resort tariffs) in US and last resort regime, as well as to the customers who switched their supplier or renegotiated their contract;



Source: Monthly reports of suppliers for final customers– processed by MG

- b) for suppliers of last resort - based on the electricity supplied to the final customers in US and last resort regime;

**Market shares of suppliers of last resort on US and last resort regime
JANUARY - SEPTEMBER 2017**

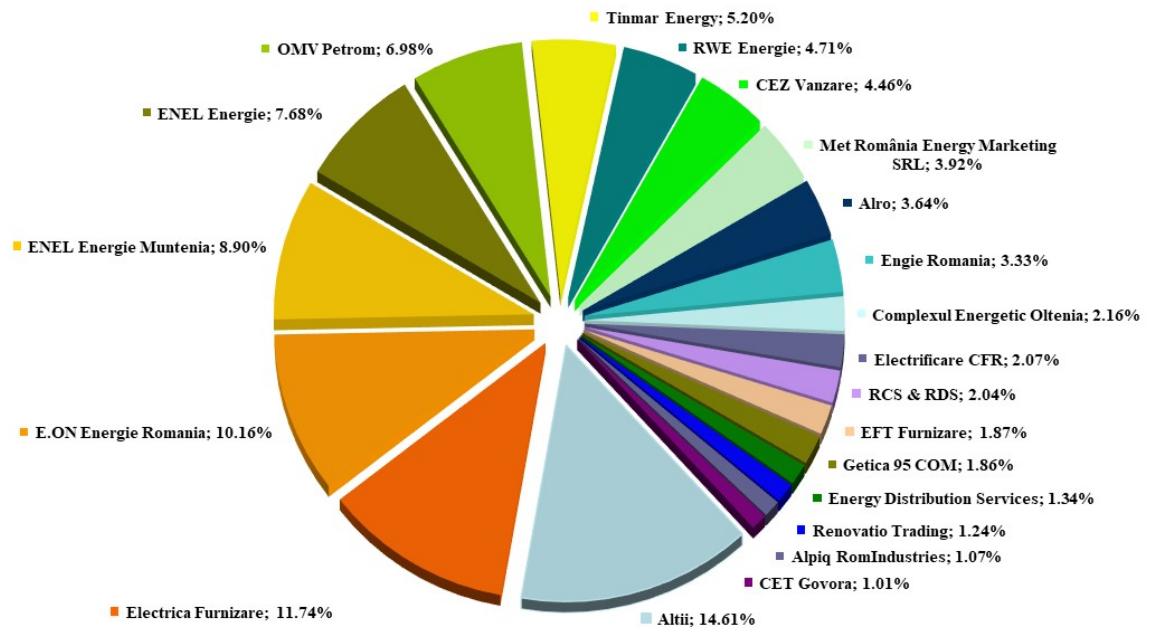


Consumption of customers supplied at regulated, CMC and last resort tariffs: 9405 GWh

Source: Monthly reports of the suppliers of last resort – processed by MG

- c) for all suppliers (including the suppliers of last resort) based on the electricity supplied for the customers at negotiated prices on competitive component of REM:

Market shares of suppliers delivering electricity on the competitive market
JANUARY - SEPTEMBER 2017



Consumption on competitive market: 26790 GWh
Structure indicators:
HHI - 569; C3 - 31%; C1 - 12%

Category "Altii" includes 83 suppliers with individual market share less than 1%

Source: Monthly reports of the competitive suppliers – processed by MG

The values of market indicators were calculated without taking into consideration the dominance principle. The delivered electricity used for determining the market share of each supplier comprises the self-consumption of the largest industrial customer which owns a supply license and based on it acquired its electricity from the WEM as a competitive supplier.

The electricity supplied to the final customers used for calculating the market share of every supplier includes also the self-consumption of that particular supplier (e.g. customers with supply license who buy electricity for themselves from WEM as competitive suppliers).

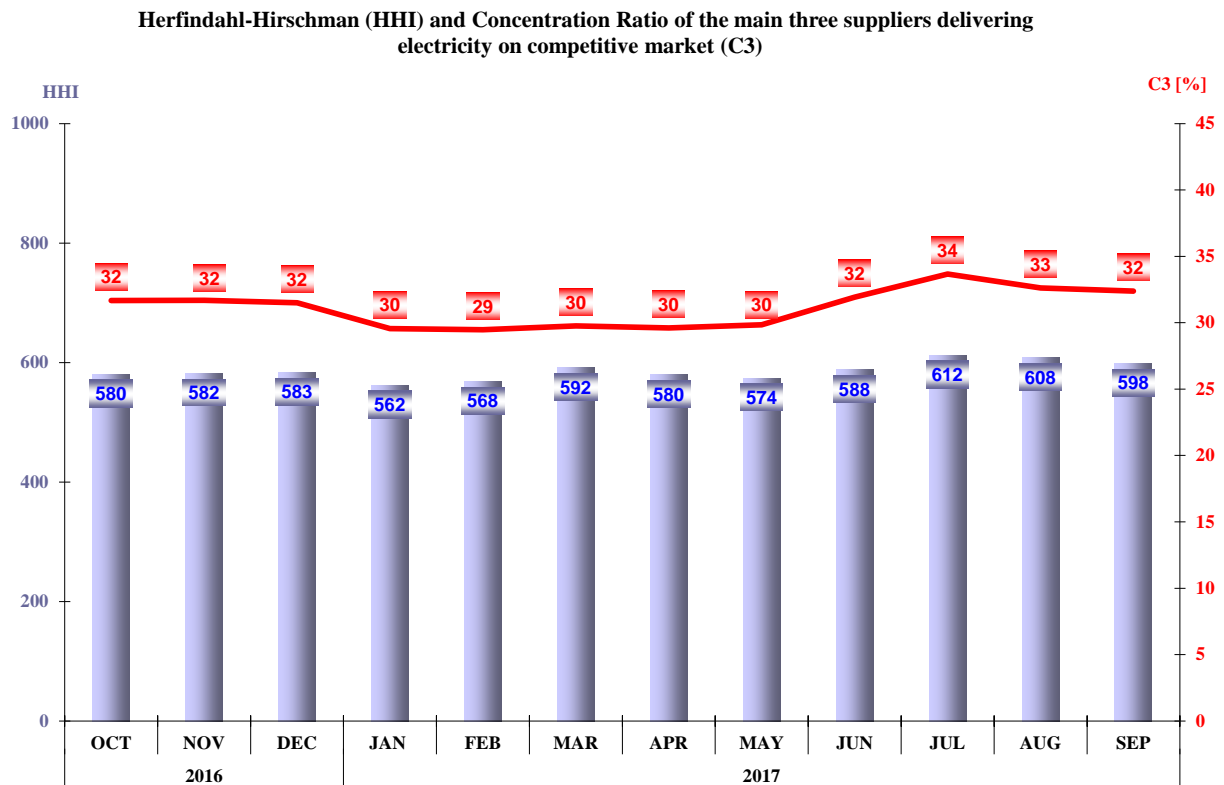
The analysis of the competitive suppliers' activity on the competitive REM component compared to their activity on the WEM is developed based on the weight of the electricity sold to final customers in total electricity sales. The table below presents the number of suppliers acting on the REM, grouped into categories of sales weight during September 2017:

Number of suppliers	Share of sales to final customers from total sales transactions			
	100%	75% - 100%	50% - 75%	<50%
Competitive	10	12	4	39
Of last resort	0	5	0	0

Source: Monthly reports of the suppliers – processed by MG

4. Concentration indicators of the competitive retail electricity market

The monthly evolution of concentration indicators (C3, HHI) determined on the competitive component of the REM is presented for September 2017 in the following graph:



Source: Monthly reports of the suppliers – processed by MG

The table below shows the values of structure indicators of competitive component of REM for and the number of active suppliers in September 2017, calculated for each non-household and household customer categories as defined by the Regulation (EU) 2016/1952 of the European Parliament and of the Council:

Indicators - sep 2017	Consumption tranches - Non-household customers							
	IA	IB	IC	ID	IE	IF	IG	Total
C1 - % -	34	23	17	12	16	23	20	12
C3 - % -	71	51	40	33	36	43	44	32
HHI	1963	1252	850	620	788	980	1041	581
Consumption - GWh -	115	343	282	724	377	251	799	2890
No. of SUPPLIERS	66	76	69	65	25	19	16	93
No. of suppliers of last resort	0	5	5	5	4	4	3	5
No. of competitive suppliers	52	54	50	46	16	10	7	64
No. of producers	14	17	14	14	5	5	6	24

Source: Monthly reports of the suppliers – processed by MG

Indicators - September 2017	Consumption tranches - Household customers					
	DA	DB	DC	DD	DE	Total
C1 - % -	61	43	35	32	31	45
C3 - % -	95	76	72	77	79	82
HHI	4629	2618	2132	2226	2235	2856
Consumption - GWh -	43	42	26	18	6	135
No. of SUPPLIERS	36	38	42	39	37	49
No. of suppliers of last resort	5	5	5	5	5	5
No. of competitive suppliers	28	30	33	31	28	38
No. of producers	3	3	4	3	4	6

Source: Monthly reports of the suppliers – processed by MG

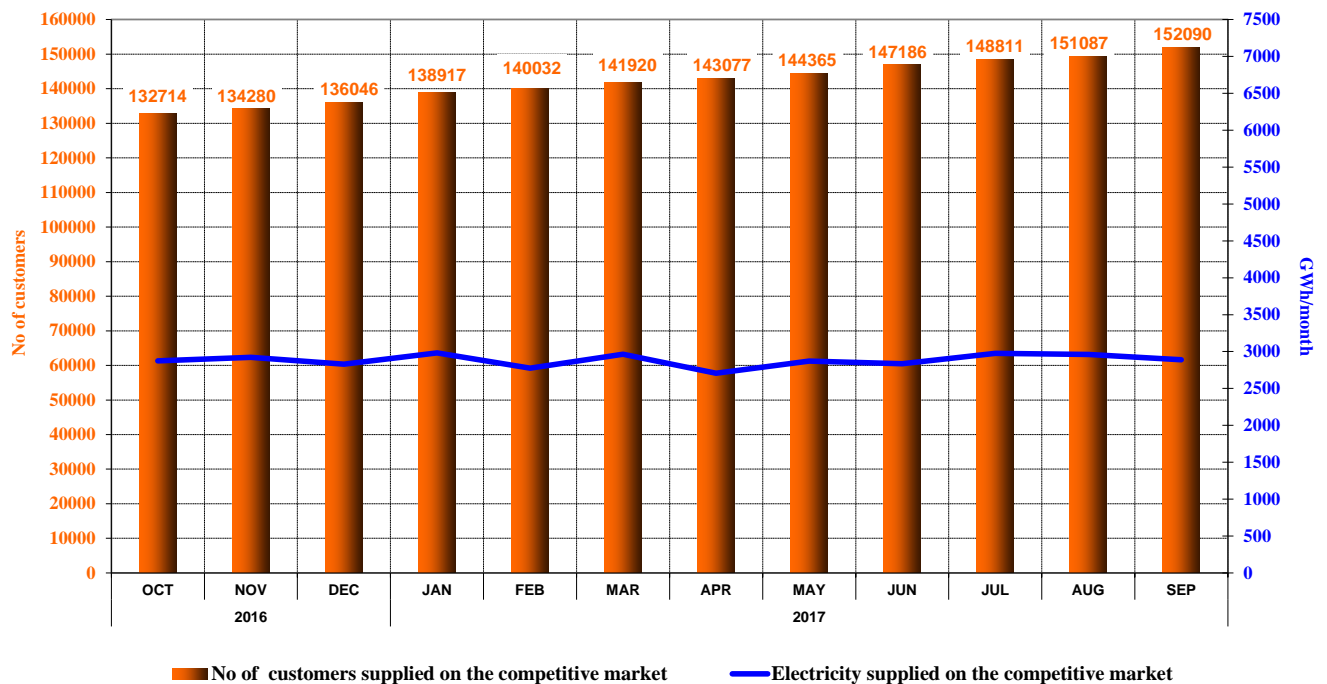
5. Evolution of customers' number and of electricity delivered

Number of customers supplied on the competitive market is presented as an evolution over the last 12 months; for August 2017 this number is split into categories according to the provisions of Regulation (EU) 2016/1952 of the European Parliament and of the Council. The tables below presents the bands of consumption of 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	

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

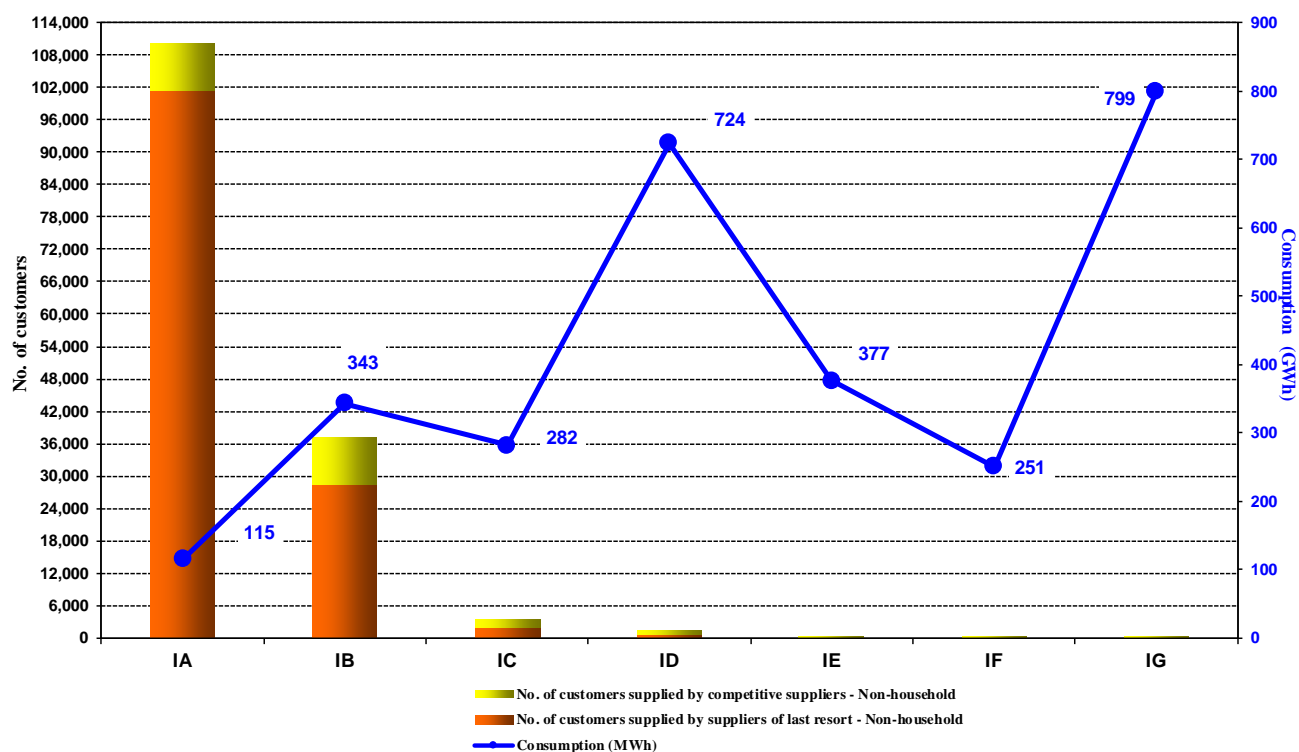


Source: Monthly reports of the competitive suppliers – processed by MG

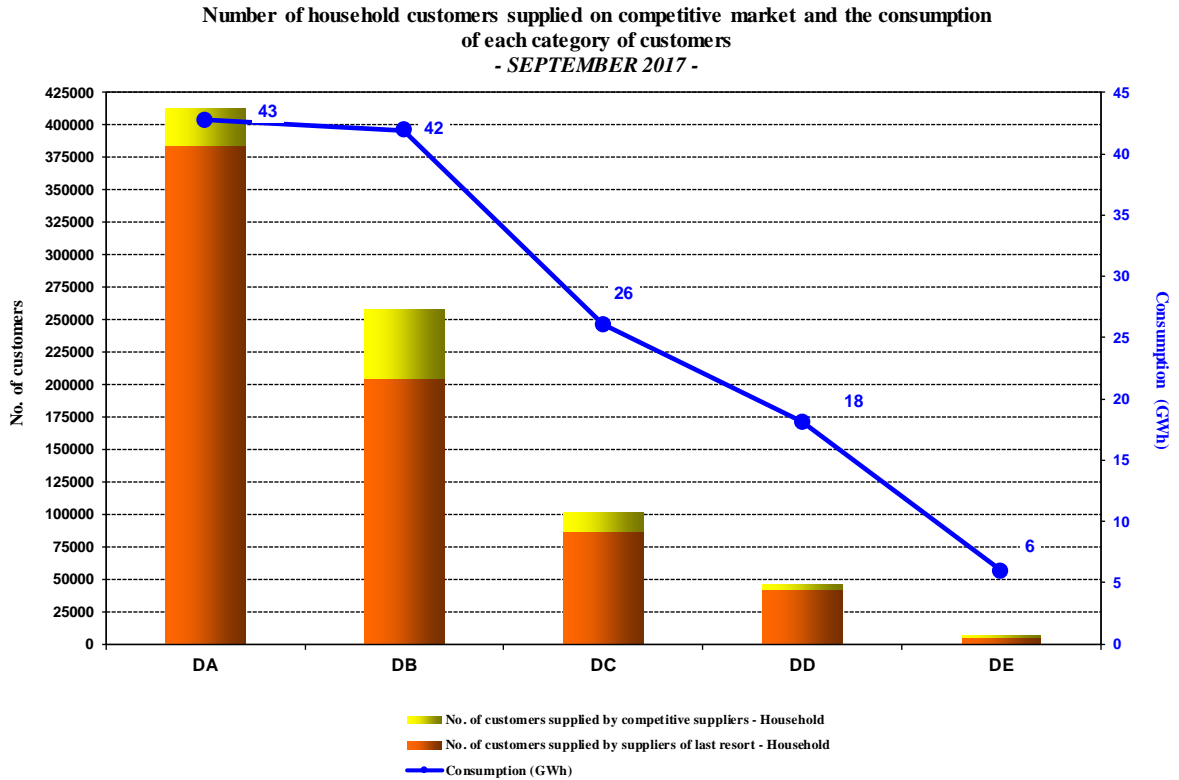
Competitive suppliers sales to final household customers on the competitive component of REM is presented in the following table:

No.	Reporting month 2017	Supplied electricity (MWh)		No. of household customers	
		Total of which:	Suppliers of last resort	Total of which:	Suppliers of last resort
1	January	57 851	46 109	272 278	217 510
2	February	62 874	51 198	322 375	262 522
3	March	75 965	63 398	379 817	316 794
4	April	83 096	69 445	444 106	374 762
5	May	94 032	80 102	522 680	448 266
6	June	97 943	85 245	598 070	517 489
7	July	117 173	102 402	668 931	582 326
8	August	128 422	112 293	743 304	648 730
9	September	134 808	118 201	823 383	723 644

Number of non-household customers supplied on competitive market and the consumption of each category of customers
- SEPTEMBER 2017 -



Source: Monthly reports of the suppliers – processed by MG

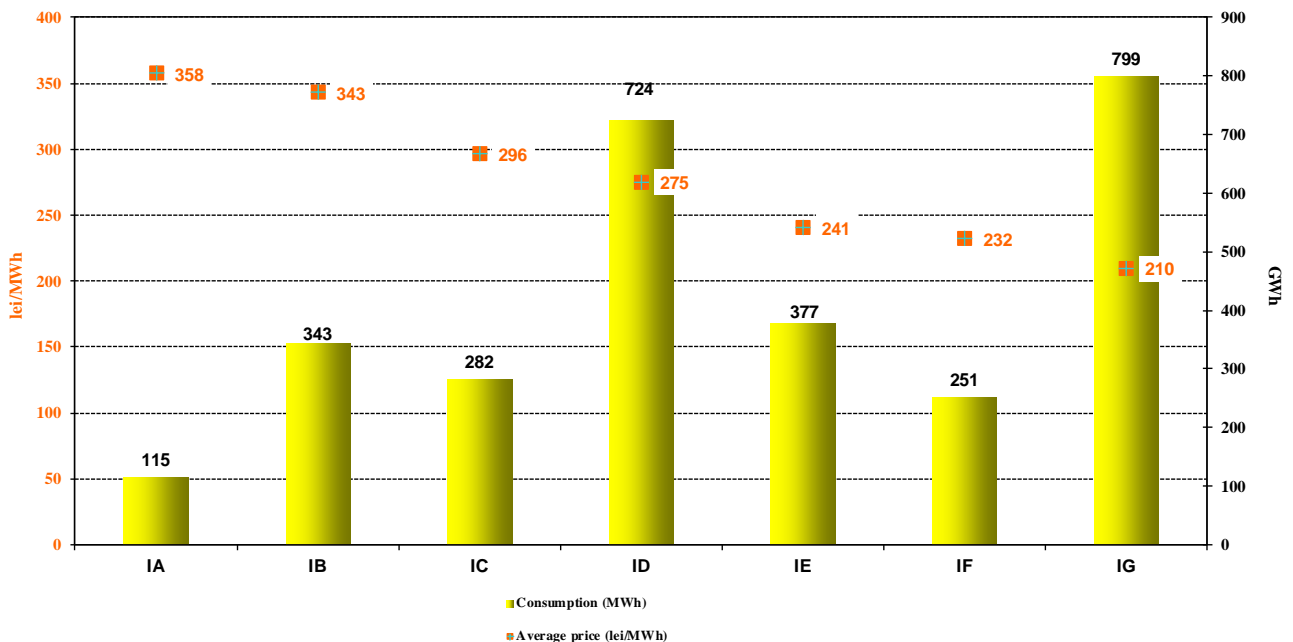


Source: Monthly reports of the suppliers – processed by MG

6. Average selling prices of customers supplied on the competitive market

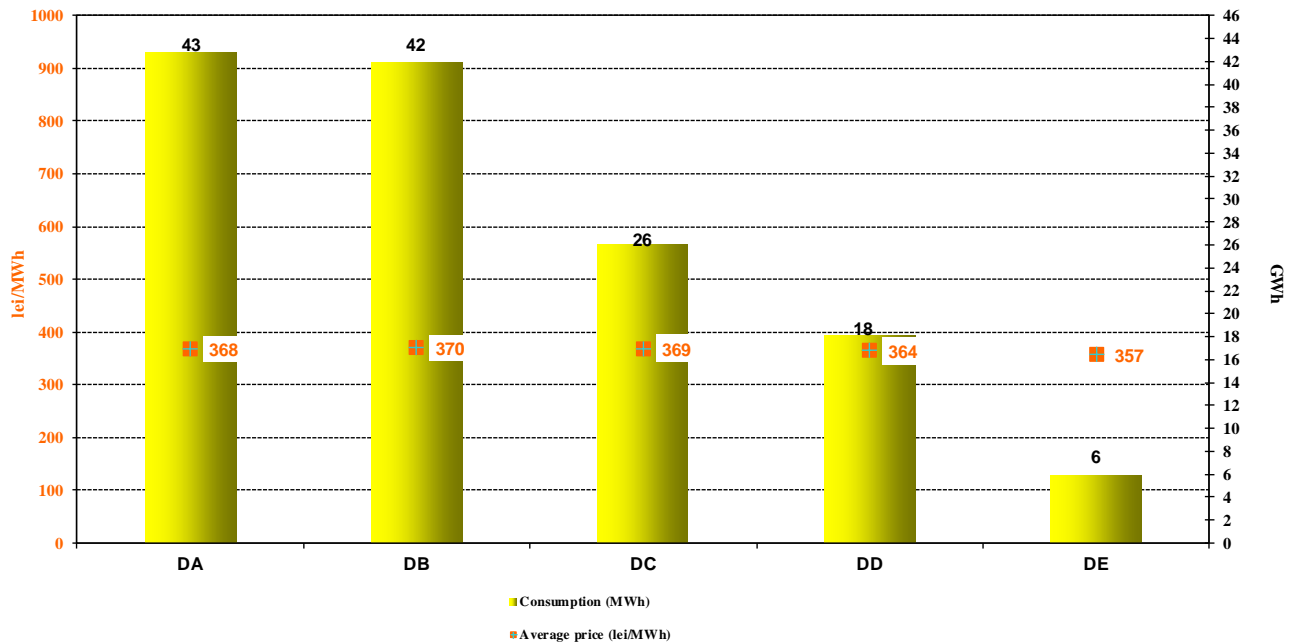
The following graph presents the average selling prices of customers supplied on the competitive market, based on the structure defined according to the Regulation (EU) 2016/1952 of the European Parliament and of the Council for September 2017.

Average price and energy consumption for non-household customers' tranches on competitive segment of REM
- SEPTEMBER 2017 -



Source: Monthly reports of the competitive suppliers – processed by MG

Average price and energy consumption for household customers' tranches on competitive segment of REM
- SEPTEMBER 2017 -



Source: Monthly reports of the competitive suppliers – processed by MG

Note: The average selling price on each category was calculated as weighted average of prices applied by suppliers with quantities supplied according to the provisions of the European Regulation. The average prices do not include VAT, excise or other taxes but include the corresponding services (transmission, system services, distribution tariffs, imbalance, BRP aggregated tax, metering). Splitting customers into categories was based on their annual consumption forecast, according to the provisions of above mentioned Regulation.

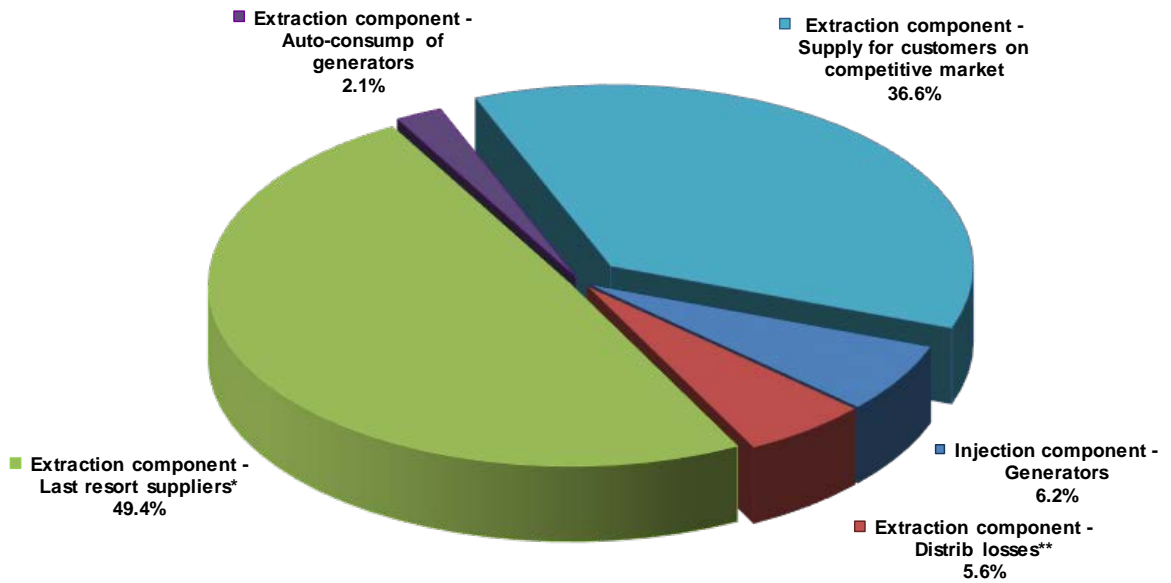
IV. TRANSMISSION AND SYSTEM OPERATOR CNTEE TRANSELECTRICA SA

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

Compared to the previous method of establishing the transmission zonal tariffs, which aimed to offer locational signals, starting with July 2015 the methodological principles were modified in order to comply with EU regulations and ACER recommendations in this field. Following this, the injection tariff covers only the network losses costs with different zonal tariffs while the extraction tariff covers the average cost of transmission service.

The following graph presents the structure of CNTEE Tranelectrica SA revenues from performing the transmission services and reflects the structure of its clients benefiting from this type of service in September 2017.

**CNTEE Traselectrica SA structure of revenues from transmission services
- September 2017 -**



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

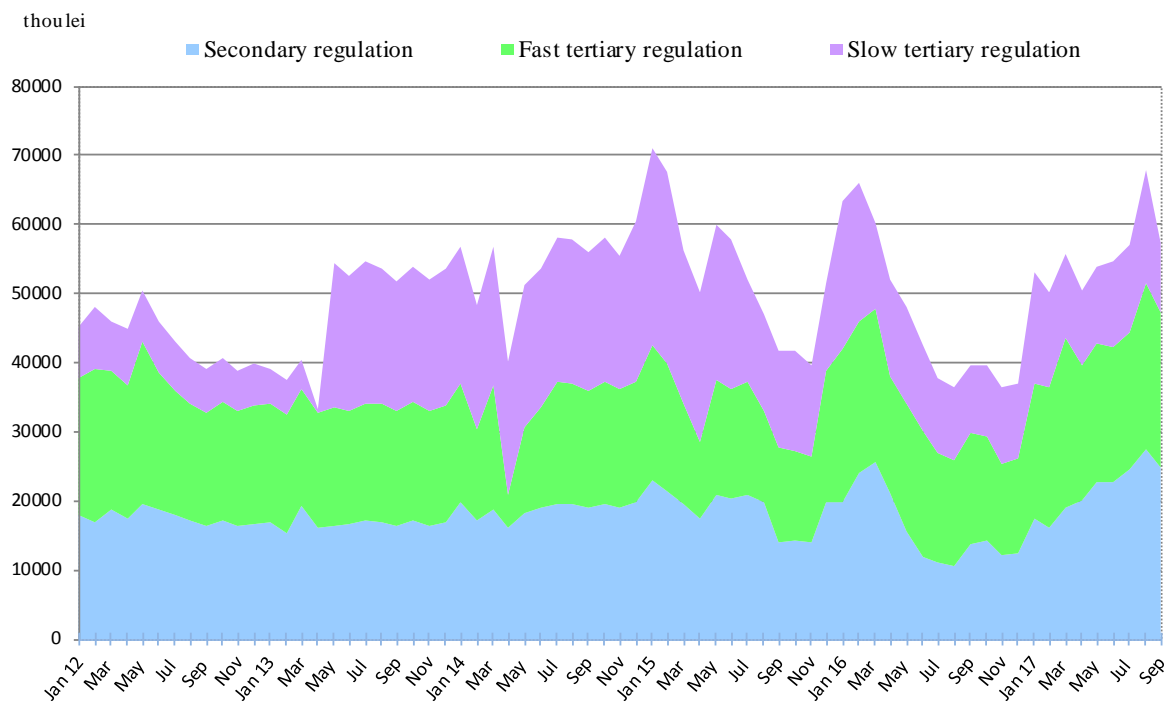
** includes the electricity with which some distribution operators supply their own self-consumption places

Source: Monthly reports of CNTEE Traselectrica SA – processed by MG

In order to perform the system operator tasks. CNTEE Traselectrica SA assesses and contracts reserves (ancillary services) from qualified generators, which are integrated on BM. The ancillary services which may be used are reserves for secondary, fast tertiary, slow tertiary regulation and reactive energy.

The following graph represents the cost evolution of ancillary services acquisition which were paid by the transmission and system operator starting with January 2012. The tariffs applied for this type of services may be regulated (for the quantities approved through decision by ANRE) and/or competitive (in case the TSO organizes competitive sessions).

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



Source: Monthly reports of CNTEE Transelectrica SA – processed by MG

V. EVOLUTION OF MARKET RULES IN SEPTEMBER 2017

In September 2017, ANRE issued the following regulations with impact on the wholesale and retail electricity markets:

- ANRE Order no. 83/2017 repealing the Methodology for establishing, implementing and using the reserve capacity ancillary service, approved by ANRE Order no. 19/2007;
- ANRE Order no. 86/2017 modifying and completing the Methodology for establishing and monitoring the overcompensation of generation of electricity and heat in high efficiency cogeneration units that benefit from the support scheme, approved by ANRE Order no. 84/2013;
- ANRE Decision no. 1351/2017 approving the quantities produced in high efficiency cogeneration units that benefit from the support scheme in August 2017.

VI. EXPLANATIONS AND ABBREVIATION

1. Explanations

- *Electricity delivered into the grid* includes also the own consumption of auto-generators such as RAAN and OMV Petrom together with the electricity sold by the generators through direct lines or consumed by themselves at other consumption sites.
- *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.
- *Internal consumption* represents the electricity covered by the wholesale market participants and calculated as *Delivered electricity + Import – Export*.
- *Consumption of final customers on regulated market* represents the consumption of customers supplied at regulated tariffs and CMC by suppliers of last resort.
- *Consumption of final customers on competitive market* represents the consumption of customers supplied at negotiated prices.
- *Fuel consumption* represents the fuel consumed for generating electricity and heat.
- *Competitive supplier* represents the supplier which is active on the competitive retail market.

2. Abbreviation

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