REPORT ON RESULTS OF MONITORING THE ROMANIAN ELECTRICITY MARKET

MAY 2018

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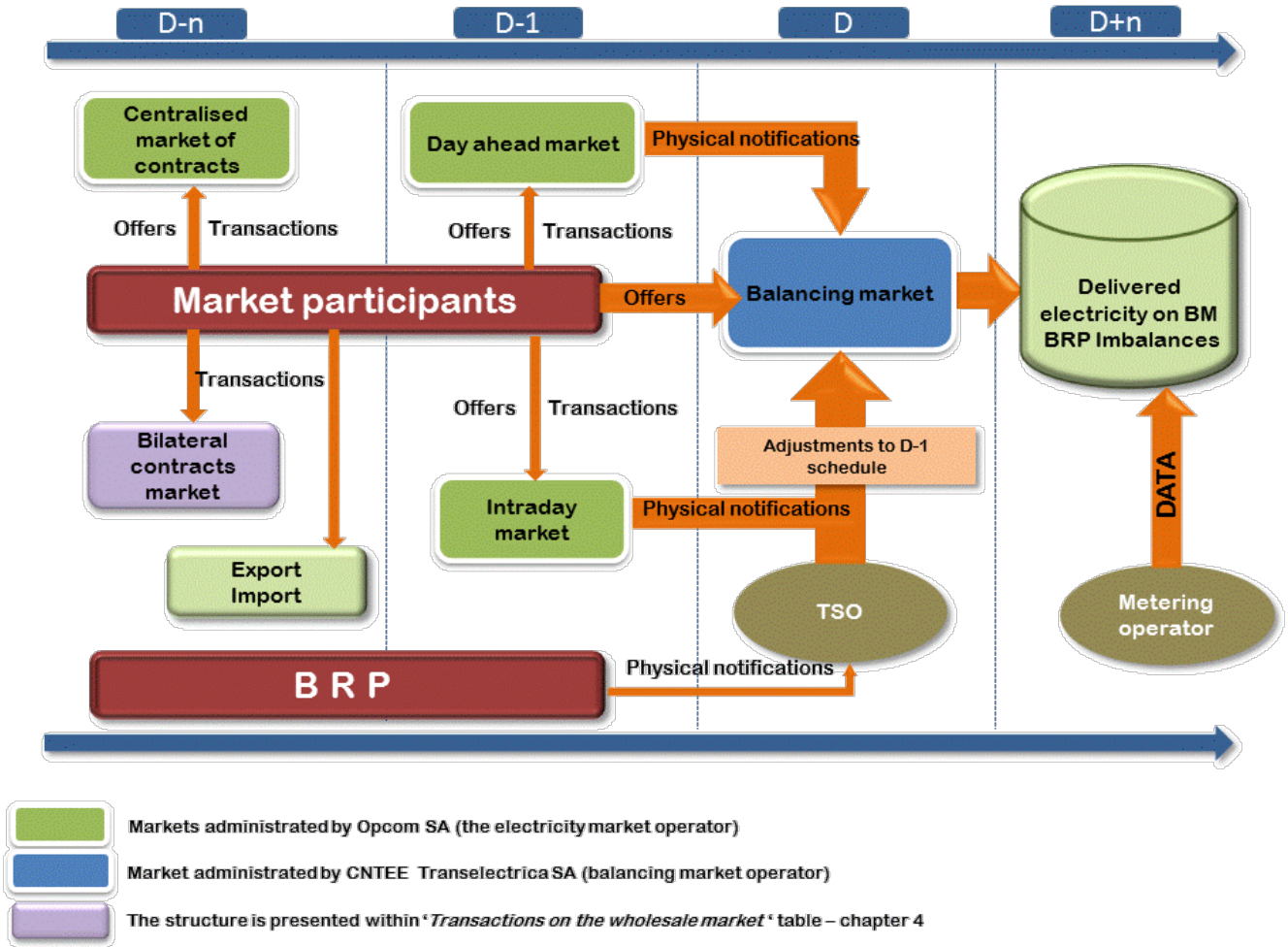
I. MAIN EVENTS IN THE DEVELOPMENT OF THE ROMANIAN ELECTRICITY MARKET

- **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 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%;
- **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 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.

II. WHOLESALE ELECTRICITY MARKET

1. Structure of the wholesale electricity market



2. Participants on the wholesale electricity market

The market participants*) acting on the electricity market in May 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	Gas Energy Ecotherm SA
14	Lukoil Energy & Gaz Romania SRL
15	Modern Calor SA
16	OMV Petrom SA
17	Rulmenti SA
18	SNGN Romgaz SA
19	Termoficare Oradea SA
20	Veolia Energie Iaşi SRL
21	Veolia Energie Prahova SRL
22	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	CEZ as
3	Danske Commoditiesa/s Aarhus
4	EDF Trading Limited
5	Energo-Pro Trading EAD
6	Elpetra Energy E.A.D.
7	Energi Danmark A/S
8	Energy Supply & Trade D.O.O
9	Eolian Project SRL
10	EVN Trading South East Europe
11	Ezpada SRO
12	Flavus Investiţii SRL
13	Freepoint Commodities Europe Ltd
14	General Energetic
15	GEN I trgovanje in prodaja elektricne energije doo
16	Holding_ Slovenske_ Elektrarne
17	Interenergo Energetski, Inzeniring d.o.o.
18	JAS Energy Trading s.r.o.
19	Lord Energy SRL
20	MVM Partner Zrt
21	Neas Energy A/S
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
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	Ciga Energy SA
12	Cotroceni Park SA
13	Crest Energy SRL
14	Curent Alternativ SRL
15	CYEB SRL
16	Eco2Energy Choice SRL
17	EFE Energy SRL

No.	Category
	Electricity Suppliers acting also on the retail market
18	EFT Furnizare SRL
19	Energia Gas & Power SRL
20	Energy Trade Activ SRL
21	Electric Planners SRL
22	Electrificare CFR SRL
23	Elsid SA
24	Electrocarbon SA
25	Electromagnetica SA
26	Enel Trade Romania SRL
27	Energy Distribution Services SRL
28	Engie Romania SA
29	Enol Grup SA
30	Entrex Services SRL
31	Eolian Generator SRL
32	E.V.A. Energy SRL
33	GDM Logistic SRL
34	Getica 95 COM SRL
35	Grenerg SRL
36	Hermes Energy International SRL
37	ICCO Energ SRL
38	ICPE Electrocond Technologies SA
39	Imperial Development SRL
40	Industrial Energy SA
41	Izvor de Lumina SRL
42	Luxten LC SA
43	Menarom PEC SRL
44	MET Romania Energy SA
45	Midas&CO SRL
46	Monsson Trading SRL
47	Next Power SRL
48	Next Energy Parteners SRL
49	Nova Power&Gas SRL
50	P.C. Management & Consulting SRL
51	Plenerg SRL
52	Power Clouds SRL
53	QIA Energy SRL
54	QMB Energ SRL
55	RCS&RDS SA
56	Renovatio Trading SRL
57	Restart Energy One SRL
58	Romelectro SA
59	RWE Energie SRL
60	Stock Energy SRL
61	Tinmar Energy SA
62	Transformer Energy Supply SRL
63	Unistil SRL
64	**Uzinsider General Contractor SA**
65	Veolia Energie România SA
66	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. 67/2018 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.

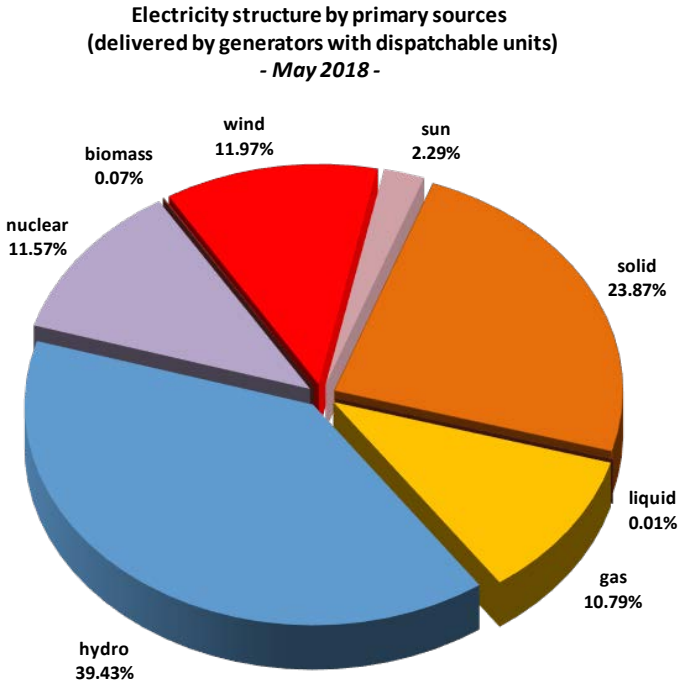
The monitored electricity generation license holders are producers holding dispatchable groups, which, according to the Regulation of Programming of production units and dispatchable consumers, approved by the Order of the ANRE President no. 32/2013 are classified under the following power categories:

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.

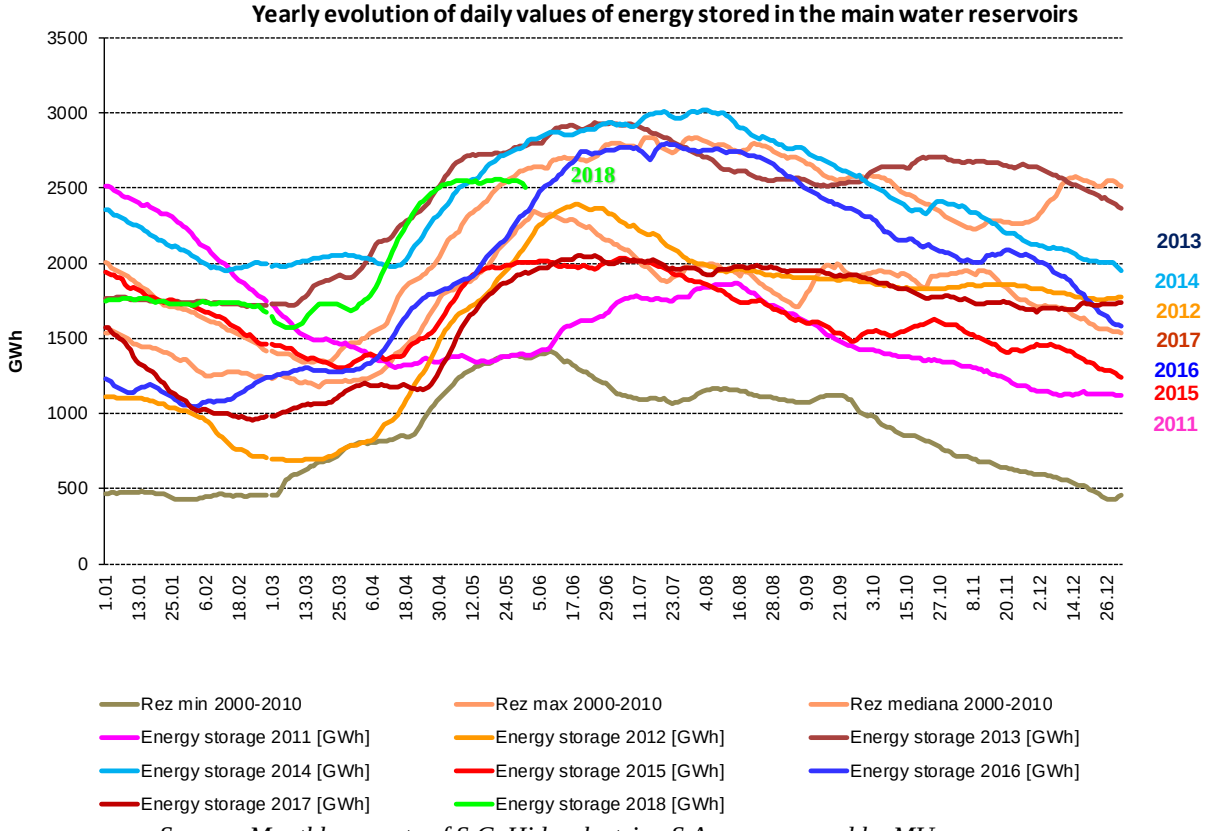
Electricity Suppliers acting exclusively on the wholesale market category include supplying license owners who act only on wholesale market and owners of a trading license issued according ANRE Order no. 13/2015 for approval the."General conditions associated to trading electricity license".

3. *Generation structure of National Energy System on resources types*



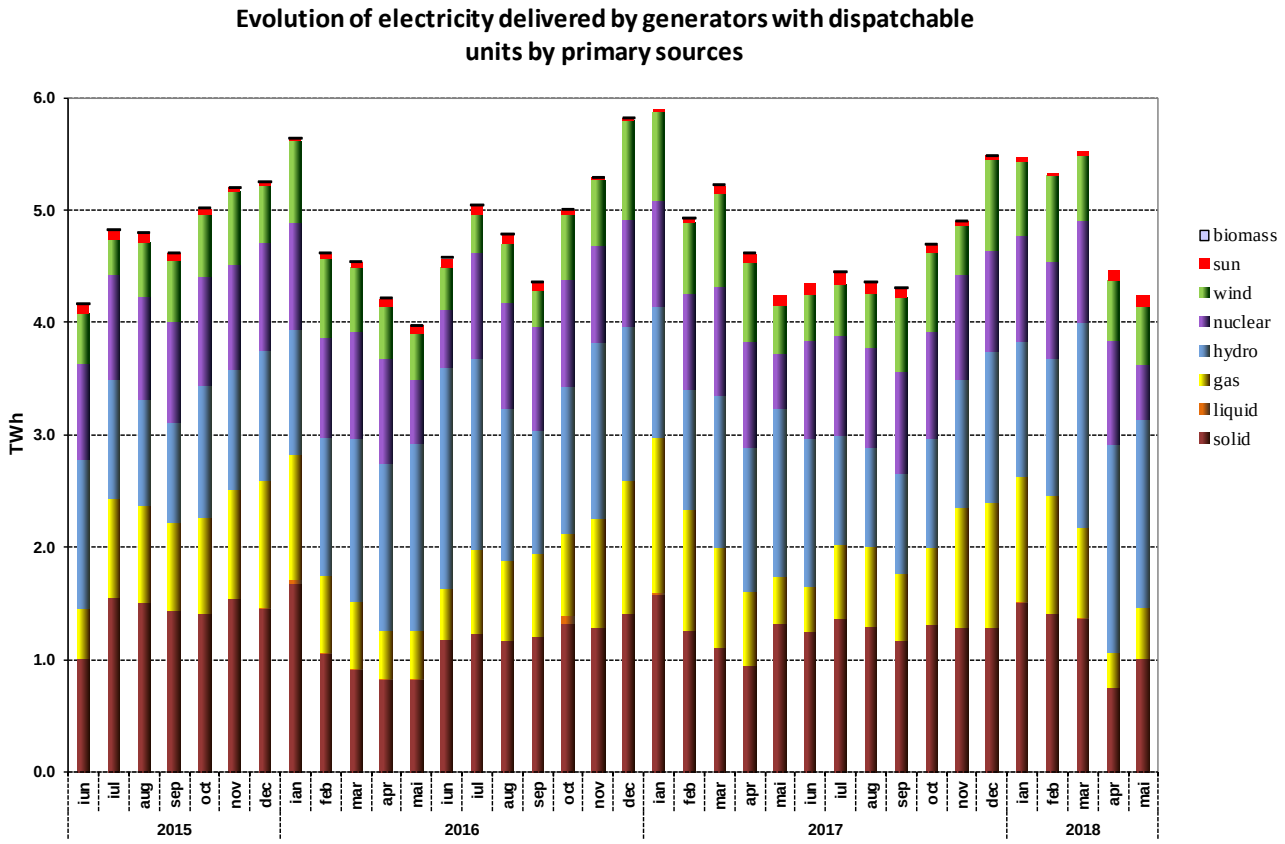
Source: Monthly reports of generators – processed by MU

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 May 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. – processed by MU

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



Source: Monthly reports of generators – processed by MU

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

Nr. Crt.	INDICATOR	UM	May 2017	May 2018	%	Jan-May 2017	Jan-May 2018	%
0	1	2	3	4	5=4/3*100	6	7	8=7/6*100
1	Generated electricity	TWh	4.50*	4.48	99.56	26.57	26.67	100.38
2	Delivered electricity	TWh	4.24	4.24	100.00	24.91*	25.08	100.68
3	Import	TWh	0.46	0.34	73.91	1.48	1.15	77.70
4	Export	TWh	0.49	0.32	65.31	3.30	2.70	81.82
5	Internal consumption (2+3-4)	TWh	4.20*	4.26	101.43	23.09*	23.53	101.91
6	Consumption of household customers:	TWh	0.99	1.01	102.02	5.39	5.47	101.48
6.1	*on Universal Service regime*	*TWh*	*0.90*	0.79	87.78	*5.02*	4.41	87.85
6.2	*on the competitive market**	*TWh*	*0.09*	0.22	244.44	*0.37*	1.06	286.49
7	Consumption of non-households customers:	TWh	2.95	3.06	103.73	14.84	15.34	103.37
7.1	*on US and last resort regime*	*TWh*	*0.08*	0.08	100.00	*0.54*	0.44	81.48
7.2	*on the competitive market*	*TWh*	*2.87*	2.98	103.83	*14.30*	14.90	104.20
8	Transmission–Injection component	TWh	4.11	4.14	100.73	24.38*	24.53	100.62
9	Transmission–Extraction component	TWh	4.30	4.36	101.40	23.20*	23.58	101.64
10	Actual transmission grid losses	TWh	0.07	0.08	114.29	0.39	0.52	133.33
11	Heat generated for delivery	Tcal	544.82	462.85	84.95	7006.68	6626.67	94.58
12	Heat in co-generation	Tcal	437.46	366.47	83.77	5393.46	4940.79	91.61

***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 Transelectrica 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 universal service regime represents electricity consumption invoiced at regulated tariff and "Competitive Market Component" (CMC) tariff.
**The differences from the Electricity Market Monitoring Report in April 2017 are determined by the processing of the corrections reported by the economic operators.*

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:

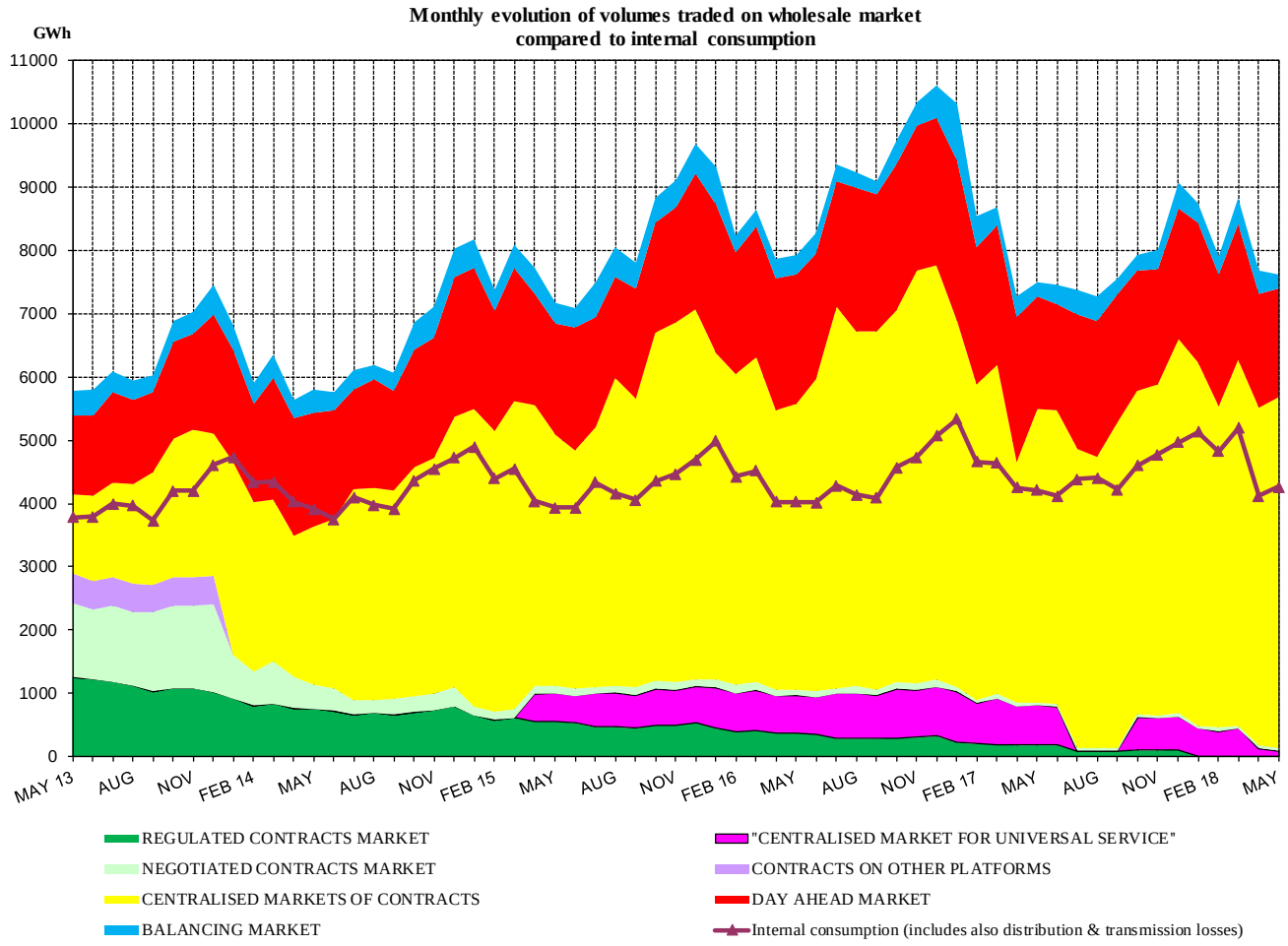
- those owning power plants that benefit from the promotion system and having installed capacity less than 1 MW/generator and less than 2 MW/generator for biomass high efficiency cogeneration, but only with suppliers for final customers;
- those owning power plants that benefit from the promotion system 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, compared to the previous month and the similar month from last year. The aggregated volumes and the average prices on negotiated contracts are those reported by market participants on their own responsibility and should, with the exception of the contracts concluded based on provisions of Law no. 23/2014 and Law 122/2015, reflect only the ongoing contracts which had been concluded before Law no. 123/2012 entered into force.

TRANSACTIONS ON THE WHOLESALE MARKET	April 2018	May 2018	May 2017
1. BILATERAL CONTRACTS' MARKET			
traded volume (GWh)	**40**	**37**	**220**
average price (lei/MWh)	137.47	165.40	120.22
% from internal consumption (%)	1.0	0.9	5.2
1.1. Sales on regulated contracts			
traded volume (GWh)			**179**
average price (lei/MWh)	-	-	111.34
% from internal consumption (%)			4.3
1.2. Sales on negotiated contracts[1)]			
traded volume (GWh)	**40**	**37**	**40**
average price (lei/MWh)	137.47	165.40	159.48
% from internal consumption (%)	1.0	0.9	1.0
2. EXPORT			
traded volume (GWh) [2)]	**548**	**322**	**490**
average price (lei/MWh)	128.48	179.60	171.77
% from internal consumption (%)	13.4	7.6	11.7
3. CENTRALIZED MARKETS OF CONTRACTS			
traded volume (GWh)	**5340**	**5550**	**4651***
average price (lei/MWh)	173.89	175.45	154.73
% from internal consumption (%)	130.1	130.2	110.6
3.1. Extended auction mechanism CMBC-EA[3)]			
traded volume (GWh)	**1955**	**1925**	**1663***
average price (lei/MWh)	176.88	176.85	157.04*
% from internal consumption (%)	47.6	45.1	39.5
3.2. Continuous negotiation mechanism CMBC-CN [3)]			
traded volume (GWh)	**930**	**1015**	**733**
average price (lei/MWh)	186.38	184.96	155.47
% from internal consumption (%)	22.7	23.8	17.4
3.3. CM-OTC mechanism [3)]			
traded volume (GWh)	**2455**	**2610**	**2255**
average price (lei/MWh)	166.78	170.71	152.78
% from internal consumption (%)	59.8	61.2	53.6
4. CENTRALIZED MARKET FOR UNIVERSAL SERVICE - CMUS			
traded volume (GWh)	**127**	**94**	**632**
average price (lei/MWh)	166.68	174.39	161.64
% from internal consumption (%)	3.1	2.2	15.0
5. DAY AHEAD MARKET			
traded volume (GWh)	**1802**	**1706**	**1764**
average price (lei/MWh) [4)]	121.28	189.52	193.61
% from internal consumption (%)	43.9	40.0	41.9
6. INTRADAY MARKET			
traded volume (GWh)	**15.7**	**16.3**	**10.6**
average price (lei/MWh) [5)]	59.86	88.27	147.12
% from internal consumption (%)	0.4	0.4	0.3
7. BALANCING MARKET			
traded volume (GWh)	**371**	**234**	**241**
% from internal consumption (%)	9.0	5.5	5.7
upward volume (GWh)	**85**	**113**	**121**
average negative imbalance price(lei/MWh)	243.31	298.15	293.39
downward volume (GWh)	**287**	**121**	**120**
average positive imbalance price (lei/MWh)	25.71	38.60	31.18
INTERNAL CONSUMPTION (GWh) (distribution and transmission losses included)	**4105**	**4264**	**4206**

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 Transelectrica 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 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 195,75 lei/MWh in May 2018;
5) The average monthly price is calculated based on monthly traded volume and transaction value published by OPCOM SA.
**Differences compared to the Report on results of monitoring the Romanian electricity market – May 2017 are due to modified data reported by some participants*

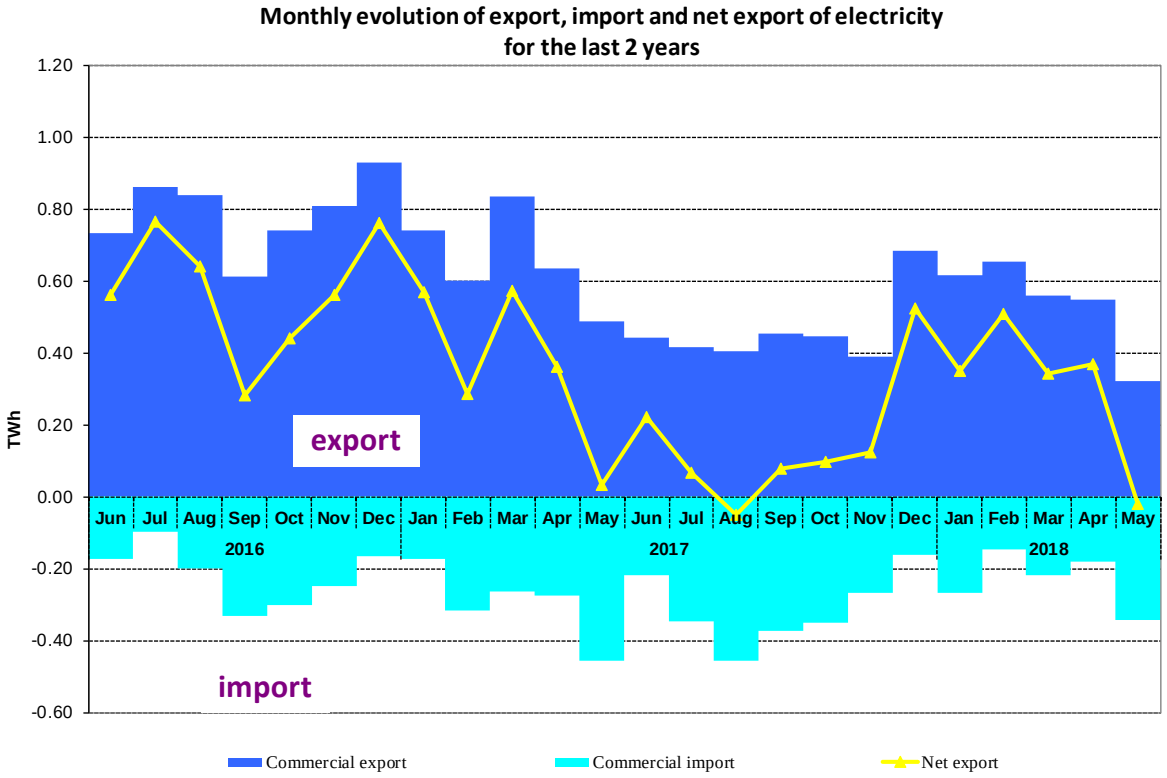
The percentage of electricity quantities from the internal consumption (see table from above) offers a dimensional reference for each of the specified markets. Prices include only the injection component of the transmission tariff, in this way being comparable within a month and making possible the comparison 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 May 2013.



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

Note: In the above graph, the volumes traded on negociated 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:

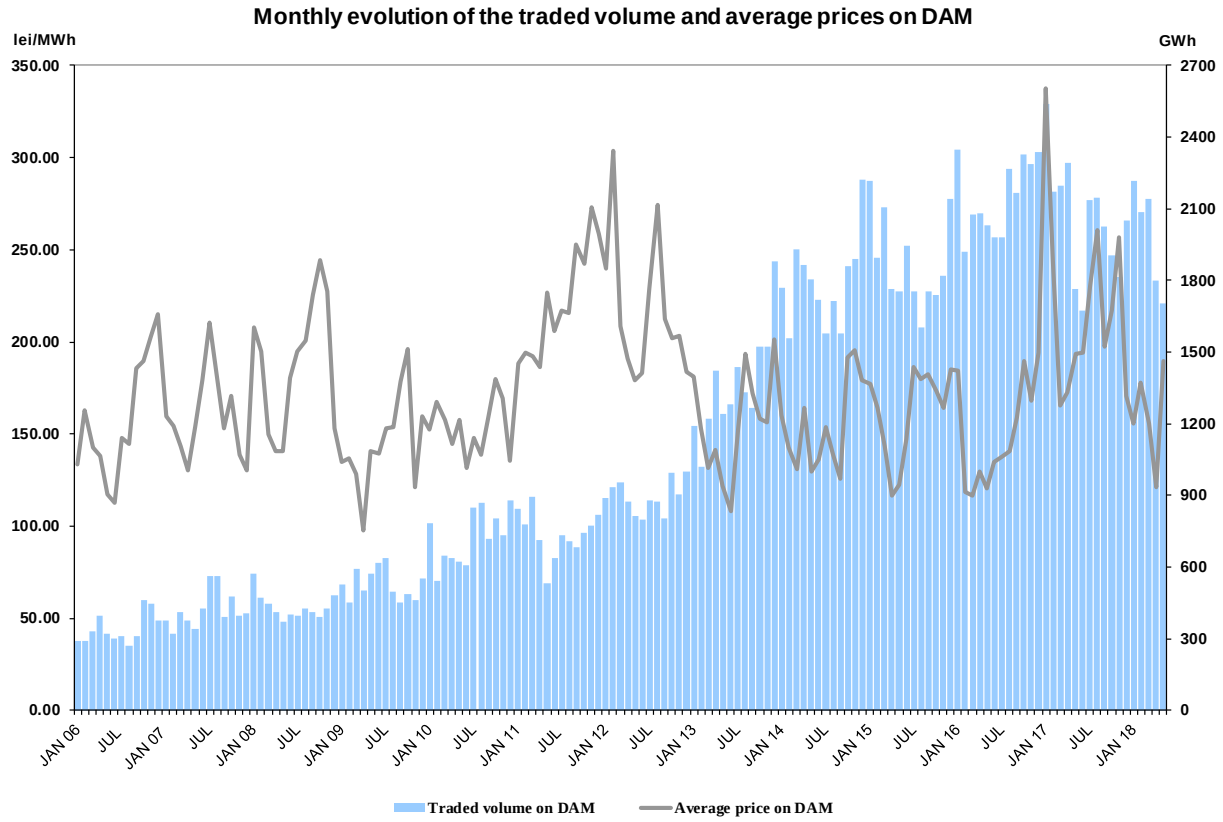


Source: Monthly reports of CNTEE Transelectrica SA – processed by MU

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	April 2018	May 2018	May 2017
Export			
traded volume (GWh)	**548**	**322**	**490**
average price (lei/MWh)	128.48	179.60	171.77
% from internal consumption	13.4	7.6	11.7
in which, for coupled DAM			
traded volume (GWh)	**109**	**53**	**27**
average price (lei/MWh)	82.42	179.18	145.65
% from internal consumption	2.7	1.2	0.6
Import			
traded volume (GWh)	**180**	**343**	**457**
average price (lei/MWh)	159.09	199.84	204.64
% from internal consumption	4.4	8.0	10.9
in which, for coupled DAM			
traded volume (GWh)	**104**	**146**	**206**
average price (lei/MWh)	156.22	189.94	200.00
% from internal consumption	2.5	3.4	4.9

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



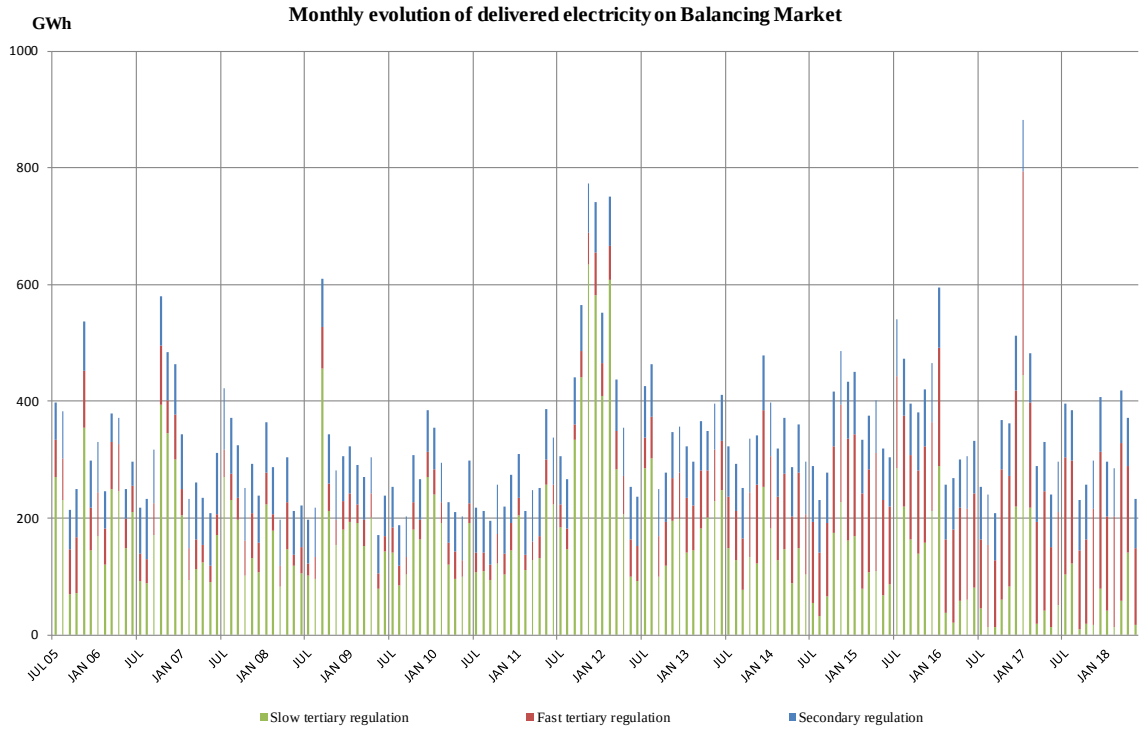
Source: Monthly reports of Opcom SA and CNTEE Transelectrica SA – processed by MU

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 May 2018 is presented in the following table:

May 2018	Dispach order (GWh)	Delivered electricity (GWh)	Deviation (%)
Secondary regulation	**85**	**85**	
upward	39	39	
downward	46	46	
Fast tertiary regulation	**139**	**131**	**5**
upward	76	73	4
downward	62	58	7
Slow tertiary regulation	**18**	**17**	**3**
upward	0	0	11
downward	17	17	3
TOTAL	**242**	**234**	
upward	116	113	
downward	125	121	
INTERNAL CONSUMPTION		**4264**	
% share of traded volumes from internal consumption		***5.5%***	

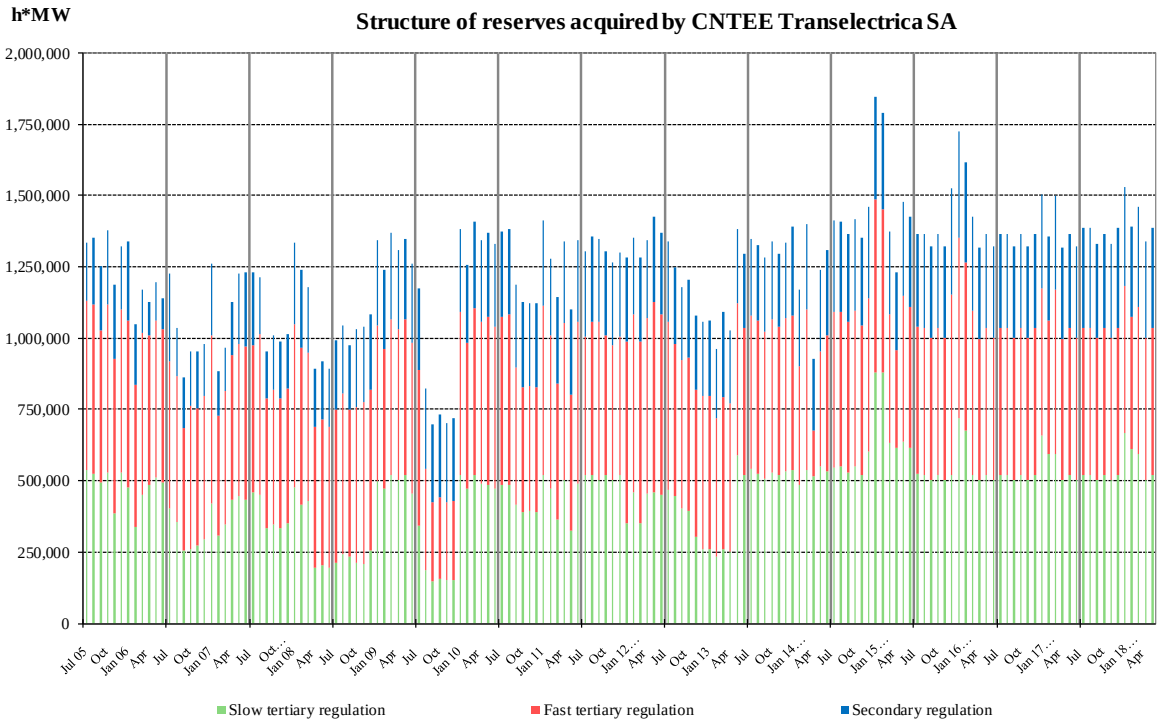
Source: Monthly reports of CNTEE Transelectrica SA – processed by MU

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



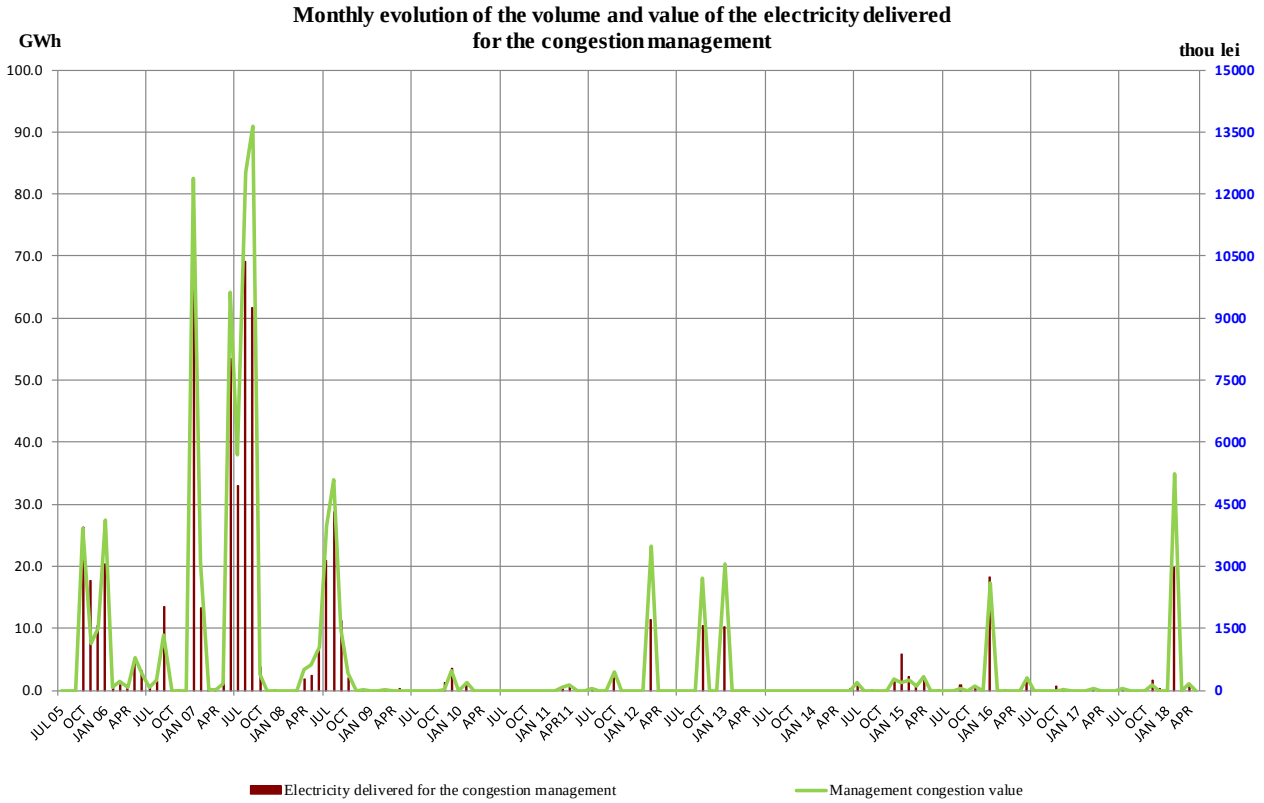
Source: Monthly reports of CNTEE Transelectrica SA – processed by M

The following chart shows the evolution of the reserves (technological system services - STS, representing the obligations of the producers to keep available to the dispatcher/offer on the market for balancing the contracted capacities) purchased/settled by CNTEE Transelectrica S.A. for the period July 2005 - May 2018:



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

The following graph presents the evolution of electricity traded by CNTEE Transelectrica 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 Transelectrica SA – processed by MU

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

Generators

In May 2018 compared with similar period of 2017, the structure of electricity sales obligations contracted before delivery interval by the electricity generators with dispatchable units was the following:

-GWh-

Transaction type	May 2017	May 2018
	1	**2**
Regulated contracts to suppliers of last resort - hydro generator	154.92	-
Regulated contracts to suppliers of last resort - nuclear generator	24.32	-
Negotiated contracts to suppliers	40.50	37.45
Contracts concluded on Opcom centralized markets:	2624.38*	3538.55
CMBC-EA	*1359.91**	*1713.00*
CMBC-CN	*479.50*	*675.64*
CM-OTC	*784.97*	*1149.92*
Centralized market for universal service	442.28	53.53
DAM	1024.90	819.26
Intraday	3.11	5.55
Supply contracts to final customers. from which:	451.58	444.90
*Households**	0.35	*0.30*
Non-households	451.23	*444.60*
Total	**4765.63***	**4899.24**

**Differences compared to the Report on results of monitoring the Romanian electricity market – May 2017 are due to modified data reported by some participants*

Suppliers

In May 2018, 101 companies with main activity the supply of electricity, concluded transactions on the electricity market; from those, 30 suppliers traded exclusively on the wholesale market and 71 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

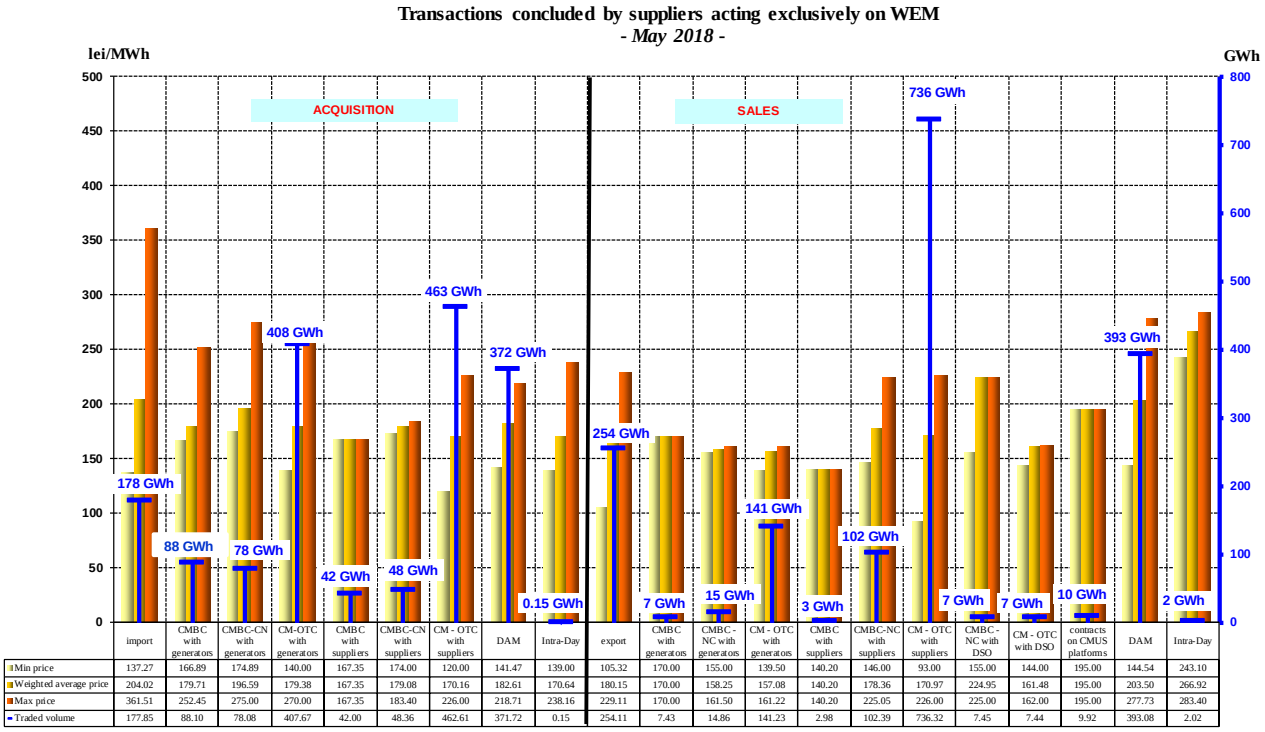
The following table shows the activity for May 2018 of the suppliers acting exclusively on WEM, acquisitions and sales being split by categories of markets participants, compared with similar period of 2017:

-GWh-

Transactions structure of suppliers acting exclusively on WEM	**May 2017**	**May 2018**
Purchase		
Import	247.50	177.85
Contracts concluded on Opcom centralized markets:	1146.84	1126.82
- *on CMBC-EA with generators*	*195.48*	*88.10*
- *on CMBC-CN with generators*	*103.32*	*78.08*
- *on CM-OTC with generators*	*366.57*	*407.67*
- *on CMBC-EA with other suppliers*	*0.26*	*42.00*
- *on CMBC-CN with other suppliers*	*31.70*	*48.36*
- *on CM-OTC with other suppliers*	*449.51*	*462.61*
DAM	404.72	*371.72*
Intraday market	0.85	0.15
Sales		
Export	379.25	254.11
Contracts concluded on Opcom centralized markets:	964.98	1020.08
- *on CMBC-EA with generators*	0.00	7.43
- *on CM-OTC with generators*	3.72	14.86
- *on CMBC-EA with other suppliers*	*122.40*	*141.23*
- *on CMBC-CN with other suppliers*	*50.58*	*2.98*
- *on CM-OTC with other suppliers*	*100.99*	*102.39*
- *on CMBC-EA with DO*	*633.18*	*736.32*
- *on CMBC-CN with DO*	*0.00*	*7.45*
- *on CM-OTC with DO*	*36.26*	*7.44*
- *on CMBC-EA with TSO*	*17.86*	*0.00*
CMUS with last resort suppliers	122.67	9.92
DAM	331.48	393.08
Intraday market	2.78	2.02

Source: Monthly reports of suppliers – processed by MU

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 May 2018.



	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 - NC with DSO	CM - OTC with DSO	contracts on CMUS platforms	DAM	Intra-Day
Min price	137.27	166.89	174.89	140.00	167.35	174.00	120.00	141.47	139.00	105.32	170.00	155.00	139.50	140.20	146.00	93.00	155.00	144.00	195.00	144.54	243.10
Weighted average price	204.02	179.71	196.59	179.38	167.35	179.08	170.16	182.61	170.64	180.15	170.00	158.25	157.08	140.20	178.36	170.97	224.95	161.48	195.00	203.50	266.92
Max price	361.51	252.45	275.00	270.00	167.35	183.40	226.00	218.71	238.16	229.11	170.00	161.50	161.22	140.20	225.05	226.00	225.00	162.00	195.00	277.73	283.40
Traded volume	177.85	88.10	78.08	407.67	42.00	48.36	462.61	371.72	0.15	254.11	7.43	14.86	141.23	2.98	102.39	736.32	7.45	7.44	9.92	393.08	2.02

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

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 May 2018 compared with similar period of 2017:

-GWh -

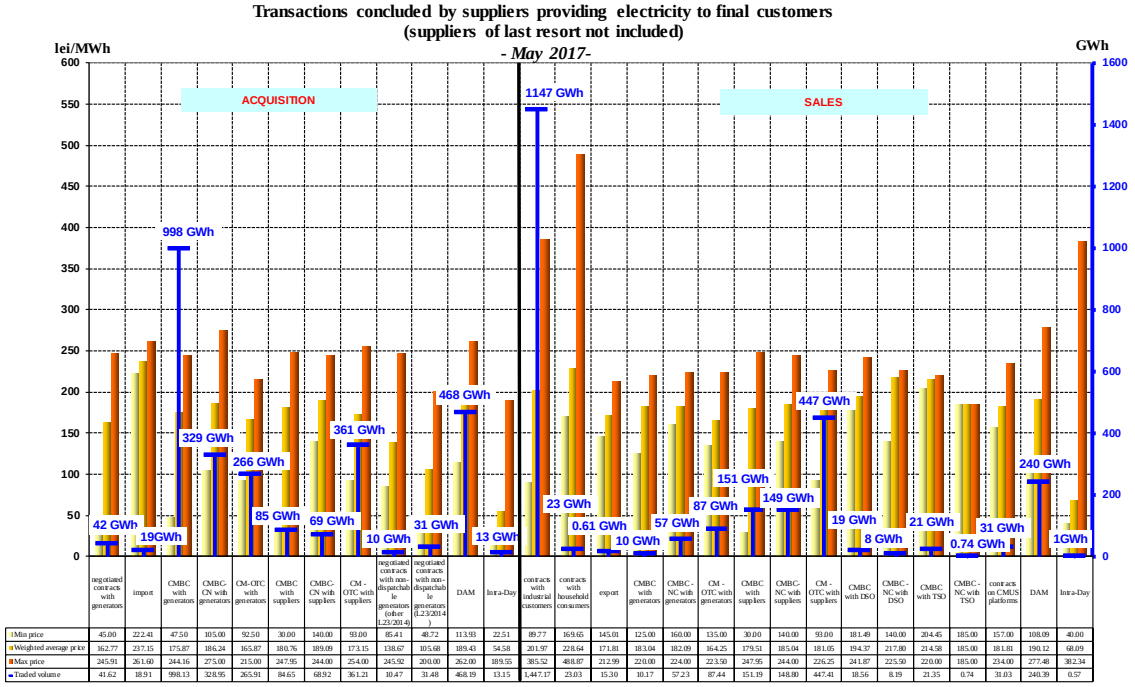
Transactions' structure of suppliers acting on REM (suppliers of last resort excluded)	**May 2017**	**May 2018**
Purchase		
Import	3.35	18.91
Negotiated contracts with generators	42.64	41.62
Contracts concluded on Opcom centralized markets:	2070.41	2107.76
- *on CMBC-EA with generators*	*754.89*	*998.13*
- *on CMBC-CN with generators*	*250.91*	*328.95*
- *on CM-OTC with generators*	*229.56*	*265.91*
- *on CMBC-EA with other suppliers*	*125.09*	*84.65*
- *on CMBC-CN with other suppliers*	*104.71*	*68.92*
- *on CM-OTC with other suppliers*	*605.25*	*361.21*
Negociated contracts with undispatchable generators (others than under Law 23/2014 and Law 122/2015)*	12.77	10.47
Negociated contracts with undispatchable generators (Law 23/2014 and Law 122/2015)**	39.73	31.48
DAM	335.89	468.19
Intraday market	5.03	13.15

Transactions' structure of suppliers acting on REM (suppliers of last resort excluded)	**May 2017**	**May 2018**
Sales		
Export	85.19	15.30
Contracts concluded on Opcom centralized markets:	980.40	951.09
- *on CMBC-EA with generators*	*27.81*	*10.17*
- *on CMBC-NC with generators*	*30.38*	*57.23*
- *on CM-OTC with generators*	*53.57*	*87.44*
- *on CMBC-EA with other suppliers*	*106.76*	*151.19*
- *on CMBC-NC with other suppliers*	*117.37*	*148.80*
- *on CM-OTC with other suppliers*	*544.42*	*447.41*
- *on CMBC-EA with DO*	*87.44*	*18.56*
- *on CMBC-NC with DO*	*0.75*	*8.19*
- *on CMBC-EA with TSO*	*11.90*	*21.35*
- *on CMBC-NC with TSO*	*0.00*	*0.74*
CMUS with last resort suppliers	67.43	31.03
DAM	132.43***	240.39
Intraday market	1.18	0.57
Household customers***	13.65***	23.03
Non-household customers	1260.87***	1447.17

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

**negotiated trades concluded with undispatchable 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 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*
****Differences compared to the Report on results of monitoring the Romanian electricity market – May 2017 are due to modified data reported by some participants*

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 May 2018:



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

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 May 2018 compared to similar period of 2017:

- GWh -

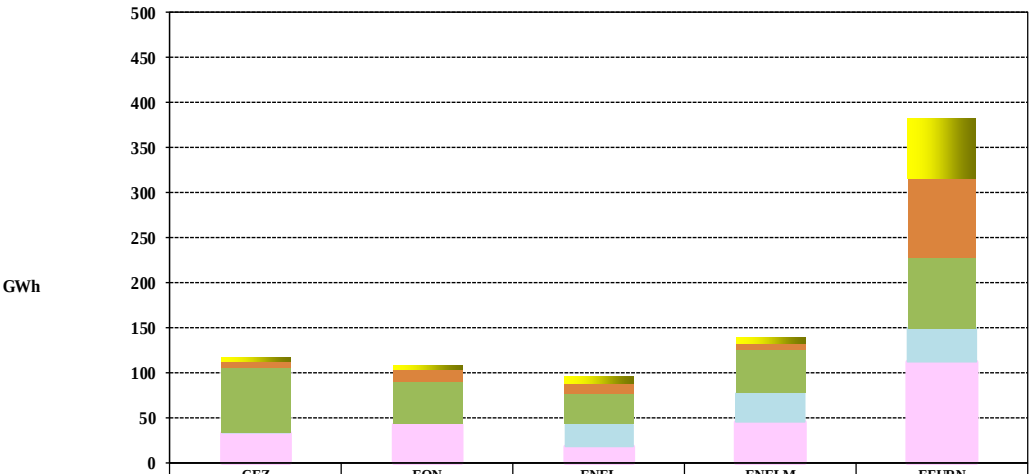
Transactions structure of suppliers of last resort for supplying the customers in SU and UI regime	**May 2017**	**May 2018**
Regulated contracts with generators	179.24	-
Negociated contracts with undispatchable generators (L23/2014 and L122/2015)*	0.03	0.03
Contracts concluded on Opcom centralized markets:	25.95	499.32
- *contracts on CMBC-EA with generators*	*16.54*	*81.16*
- *contracts on CMBC-CN with generators*	*8.40*	*63.87*
- *contracts on CM-OTC with generators*	*0.06*	*114.87*
- *contracts on CMBC-EA with other suppliers*	*0.00*	*7.63*
- *contracts on CMBC-CN with other suppliers*	*0.09*	*66.96*
- *contracts on CM-OTC with other suppliers*	*0.86*	*164.82*
Centralized market for universal service:	632.37	94.48
- *contracts on CMUS with generators*	*442.28*	*53.53*
- *contracts on CMUS with suppliers*	*190.09*	*40.95*
Transactions concluded on DAM:	160.38**	247.53
- *purchase*	*170.17***	*252.31*
- *sales*	*9.79***	*4.78*
Transactions concluded on Intraday market:	0.20	0.43
- *purchase*	*0.20*	*0.43*
- *sales*	*0.00*	*0.00*

**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*

***Differences compared to the Report on results of monitoring the Romanian electricity market – May 2017 are due to modified data reported by some participants*

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 May 2018:

Transactions structure of suppliers of last resort for supplying the customers in SU and UI regime
- MAY 2018 -



	CEZ	EON	ENEL	ENELM	EFURN
Purchase on CMBC-EA	4	5	7	5	67
Achizitii pe PCCB-NC	8	14	13	7	89
Purchase on CM-OTC	72	47	33	48	78
Purchase on CMUS	0	0	25	32	37
Purchase on DAM	34	43	18	45	113

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

Suppliers of the last resort present separately in the customers' invoice the "Competitive Market Component" (CMC), proposed by each supplier of last resort and approved by ANRE, in accordance with the provisions of The methodology for setting prices and tariffs for final consumers who do not use their eligibility rights; CMC is applied starting with 1 2013 in households' invoices. In order to reduce the differences between the electricity purchase prices to cover the consumption invoiced at the CMC tariffs by suppliers of last resort, in July 2014 ANRE developed the PCSU regulatory framework and OPCOM SA, the operator of the electricity market, implemented the corresponding trading mechanism which became operational in April 2015. As of August 2017, according to ANRE Order 75/2017, which brought amendments to the Regulation for the organization and operation of simultaneous auctions with decreasing price on the Centralized Market for Universal Service (ANRE Order 65/2014) and the Methodology for setting tariffs for final consumers by suppliers of last resort, approved by ANRE Order no. 92/2015, the purchase of the electricity to cover the consumption of clients supplied under last resort regime is done in a centralized platforms CMBC-EA, CMBC-CN, CM-OTC, DAM and ID. On the date of entry into force of ANRE President Order no. 27/2018 for the approval of the Regulation for organizing and conducting tenders on the centralized market for universal service, ANRE Order no. 65/2014 was repealed, 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 the universal service regime were modified.

The structure of SLR's electricity transactions on the REM (made before the delivery interval) for universal service is presented in the following table for April 2018, compared with the similar period of 2017:

-GWh-

Transactions' structure of suppliers of last resort for universal service	**May 2017**		**May 2018**	
	Quantity [GWh]	**Average price [lei/MWh]**	**Quantity [GWh]**	**Average price [lei/MWh]**
Contracts concluded on Opcom centralized markets:			469.19	178.56
o *on CMBC-EA with generators*			*73.40*	*191.13*
o *on CMBC-CN with generators*			*56.16*	*173.43*
o *on CM-OTC with generators*			*110.95*	*165.28*
o *on CMBC-EA with other suppliers*			*7.43*	*200.51*
o *on CMBC-CN with other suppliers*			*63.24*	*185.55*
on CM-OTC with other suppliers			*158.00*	*180.03*
Contracts concluded on CMUS:	632.37	161.64	94.48	-
- contracts on CMUS with generators	*442.28*	*161.83*	*53.53*	*166.27*
- contracts on CMUS with suppliers	*190.09*	*161.19*	*40.95*	*185.01*
Transactions concluded on DAM:	115.60*	-	225.83	-
o *purchase*	*121.80**	*215.69**	*230.60*	*212.39*
o sales	*6.20**	*149.90**	*4.76*	*164.77*
Transactions concluded on Intraday market:	0.00	-	0.30	-
- *purchase*	*0.00*	*0.00*	*0.30*	*323.45*
- *sales*	*0.00*	*0.00*	*0.00*	*0.00*
TOTAL	**747.97***	**170.53***	**789.79**	**188.08**

**Differences compared to the Report on results of monitoring the Romanian electricity market – May 2017 are due to modified data reported by some participants.*

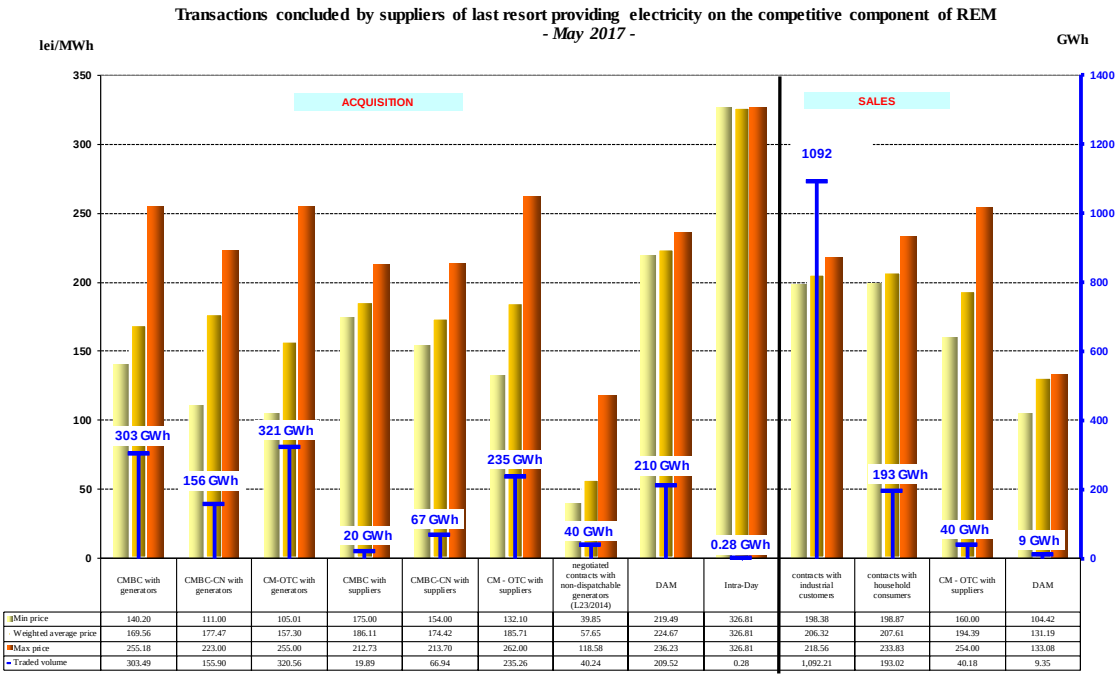
The following table presents the electricity acquisition structure of suppliers of last resort (before the delivery interval) corresponding to the competitive REM (energy supplied at negotiated prices to the customers who renounced to regulated tariffs) for May 2018 compared to similar previous period:

Transactions' structure of suppliers of last resort for the competitive segment of REM	**May 2017**	**May 2018**
Purchase		
Contracts concluded on Opcom centralized markets:	830.02	1102.05
- *on CMBC-EA with generators*	*288.93*	303.49
- *on CMBC-CN with generators*	*54.37*	*155.90*
- *on CM-OTC with generators*	*170.54*	*320.56*
- *on CMBC-EA with other suppliers*	*31.99*	*19.89*
- *on CMBC-CN with other suppliers*	*81.87*	*66.94*
- *on CM-OTC with other suppliers*	*202.33*	*235.26*
Negociated contracts with undispatchable generators (others than L23/2014 and 122/2015)*	37.57	*40.24*
DAM	450.12**	209.52
PI	0.49	0.28
Sales		
Contracts concluded on Opcom centralized markets:	81.54	40.18
- *on CMBC-EA with other suppliers*	*1.19*	0.00
- *on CM-OTC with other suppliers*	*80.35*	*40.18*
DAM	0.54**	9.35
Household customers	80.10	193.02
Non-household customers	1154.12**	1092.21

**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*

***Differences compared to the Report on results of monitoring the Romanian electricity market – May 2017 are due to modified data reported by some participants.*

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 May 2018:



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

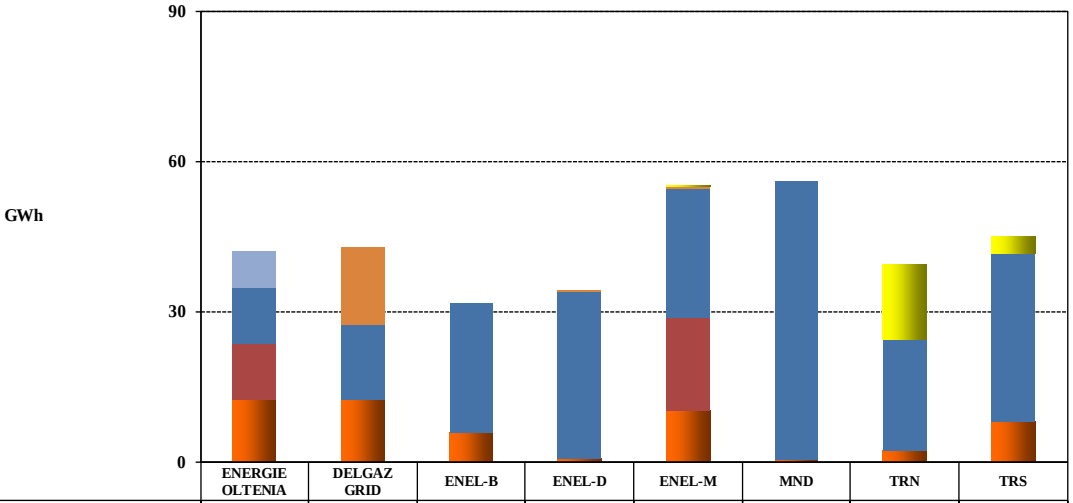
Main distribution operators

The following table shows the electricity acquisition structure of main distribution operators (before the delivery interval), for covering the distribution network losses, for May 2018 compared with similar previous period:

Transactions' structure	May 2017	May 2018
Contracts concluded on Opcom centralized markets:	258.02	294.48
- *CMBC-EA with generators*	*126.13*	*223.06*
- *CMBC-CN with generators*	*3.73*	*29.76*
- *CM-OTC with generators*	*3.72*	*0.02*
- *CMBC-EA with suppliers*	*87.44*	*18.56*
- *CMBC-CN with suppliers*	*0.75*	*15.64*
- *CM-OTC with suppliers*	*36.26*	*7.44*
Transactions concluded on Intraday market	0.29	0.08
- *purchase*	*0.29*	*0.08*
- *sales*	*0.00*	*0.00*
Transactions concluded on DAM:	115.61	46.86
- *purchase*	*116.38*	*50.99*
- *sales*	*0.77*	*4.13*

The electricity purchased for covering their network losses is presented in detail in the following graph, for May 2018:

Electricity acquisition of distribution operators for covering the distribution losses
MAY 2018



	ENERGIE OLTENIA	DELGAZ GRID	ENEL-B	ENEL-D	ENEL-M	MND	TRN	TRS
Acquisition on CMBC-EA on suppliers	0	0	0	0	0	0	15	4
Acquisition on CMBC-NC on suppliers	0	16	0	0	0	0	0	0
Acquisition on CM-OTC on suppliers	7	0	0	0	0	0	0	0
Acquisition on CMBC-EA on generations	11	15	26	33	26	56	22	33
Acquisition on CMBC-NC on generations	11	0	0	0	19	0	0	0
Acquisition on CM-OTC on generations	0	0	0	0	0	0	0	0
Sales on DAM	12	12	6	0	10	0	2	8

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

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 existance of a dominant position;
  C1>50% clearly indicates a dominant position.

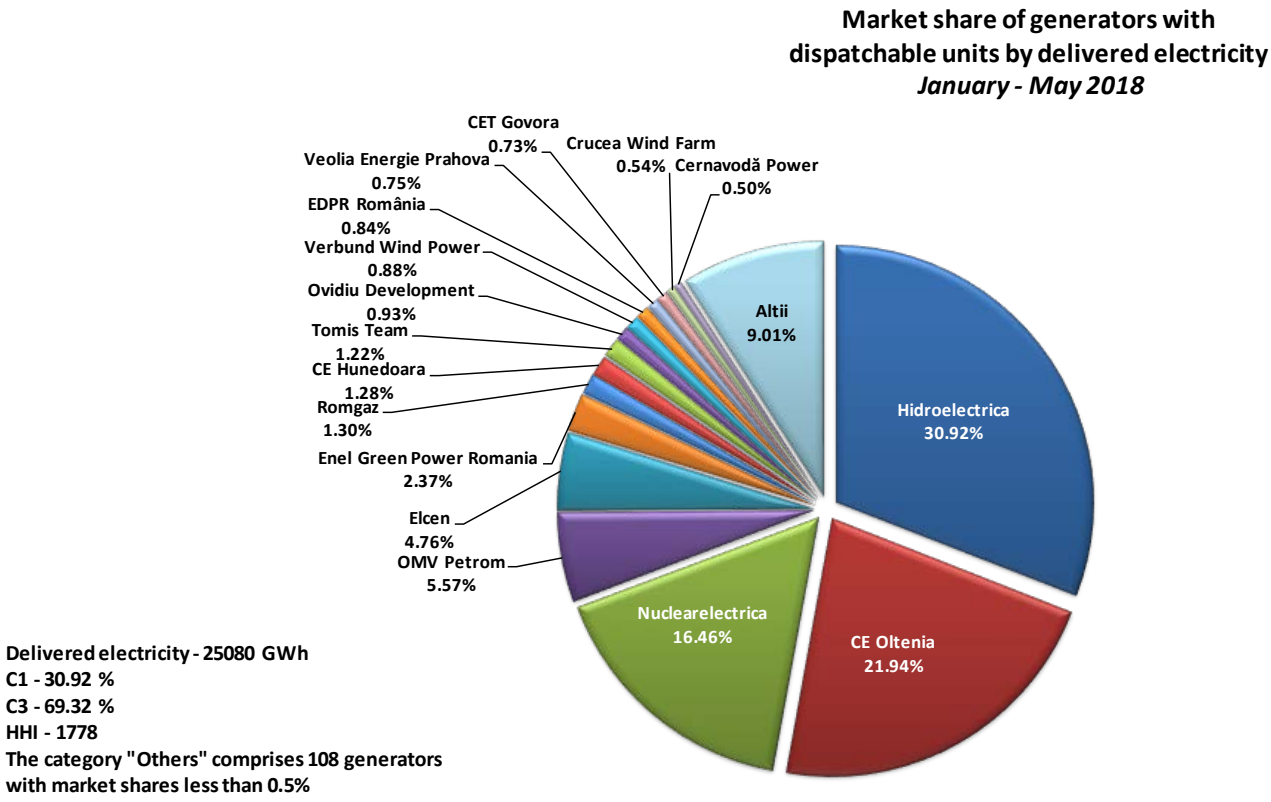
- C3 = sum of market shares of the main three participants in the market (%):
  The indicator values signify:
  40% < C3 < 70% moderately concentrated market;
  C3 > 70% highly concentrated market.

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 at the level of production provides an initial basis for assessing the degree of competitiveness possible in the electricity market.
The following table shows the concentration indicators that characterize May 2018 and the graph shows the market shares of the electricity producers, holders of dispatchable production units, made on the whole components of the wholesale electricity market and determined according to the energy electrical supply to networks.

Concentration indicators - May 2018 -	**C1 (%)**	**C3 (%)**	**HHI**
Value	**39.35**	**72.91**	**2211**



Source: Monthly reports of generators – processed by MU

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 May 2018:

Structure/concentration indicators of BM - May- 2018 -	Regulation					
	Secondary		Fast tertiary		Slow tertiary	
	upward	downward	upward	downward	upward	downward
C1 - % -	65	66	60	82	71	75
C3 - % -	99	99	93	99	91	100
HHI	5258	5269	4477	6863	5301	6005

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

The coverage of STS needs to maintain the operational safety of SEN in May 2018 was achieved both through competitive and regulated procurement. Under the provisions of GEO no. 26/2018 regarding the adoption of measures for the security of electricity supply, the ANRE President's Decision no. 655/2018 regarding the purchase at a regulated price for the period 1 May - 31 December 2018 from the producer of CE Hunedoara SA of a quantity of technological system services representing a tertiary reserve for a capacity of 400 MW. In addition, CNTEE Transelectrica S.A. has organized auctions for the acquisition of reserves on all types of regulation. The following table shows the concentration indicators by types of reserves (secondary, tertiary, slow tertiary).

Concentration indicators on ASM - May 2018 -		Secondary reserve	Fast tertiary reserve	Slow tertiary reserve
regulated component	contracted quantity (h*MW)	-	-	297600
	C1 (%)	-	-	100.0
	C3 (%)	-	-	100.0
competitive component	contracted quantity (h*MW)	350108	514600	223200
	C1 (%)	65.4	80.3	53.3
	C3 (%)	100.0	92.3	100.0
	HHI	5297	6550	4289

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

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 aplicable 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 - May 2018 -	C1 (%)	C3 (%)	HHI
Selling	13.26	29.44	435
Buying	13.40	27.80	481

Source: Monthly reports of Opcom SA – processed by MU

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 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 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 succesfully finalisation of the implementation process of the changes and tests performed, OPCOM operates in its own name the coupling solution impelemented 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.

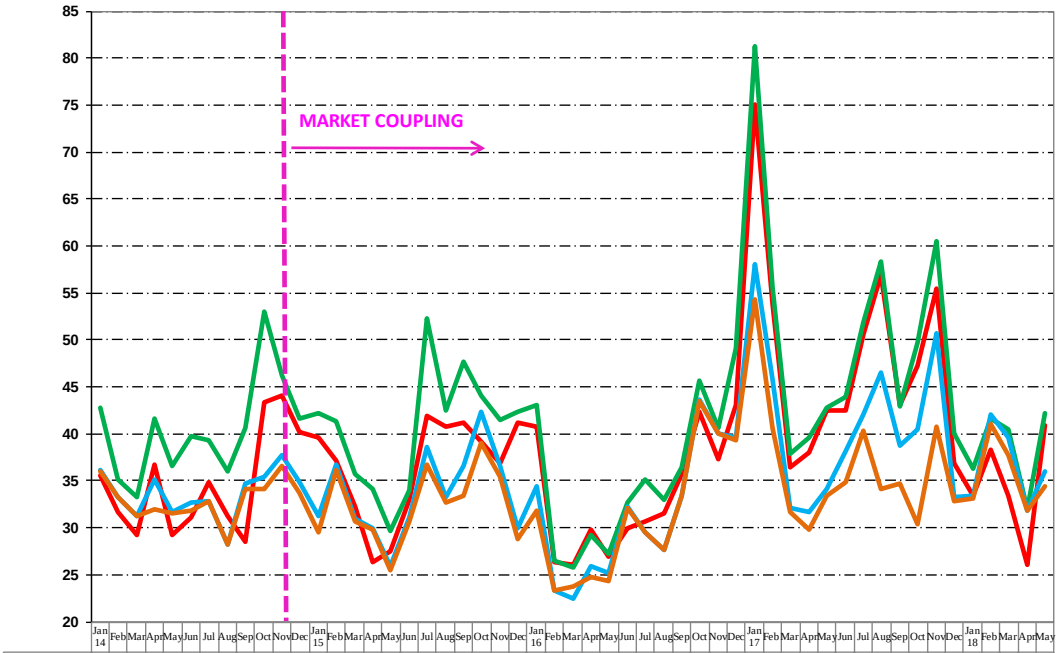
Thus, for each month of the year, reserved capacity for DAM allocation is determined as a difference between monthly ATC for each subperiod and 80% from the lowest value between the ATC resulted for subperiods of the month, incremented with the already allocated capacity at the yearly auction but which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

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

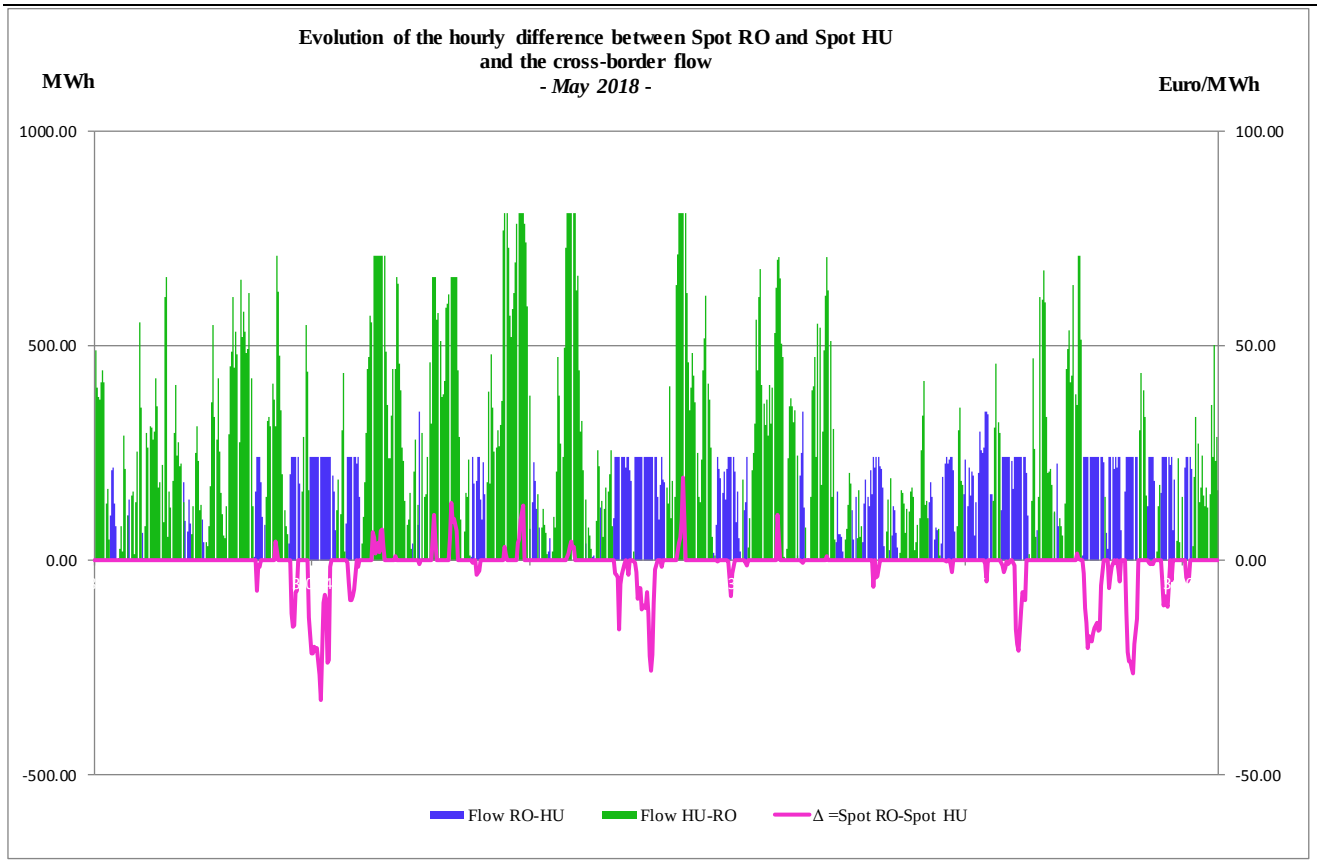
Euro/MWh



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

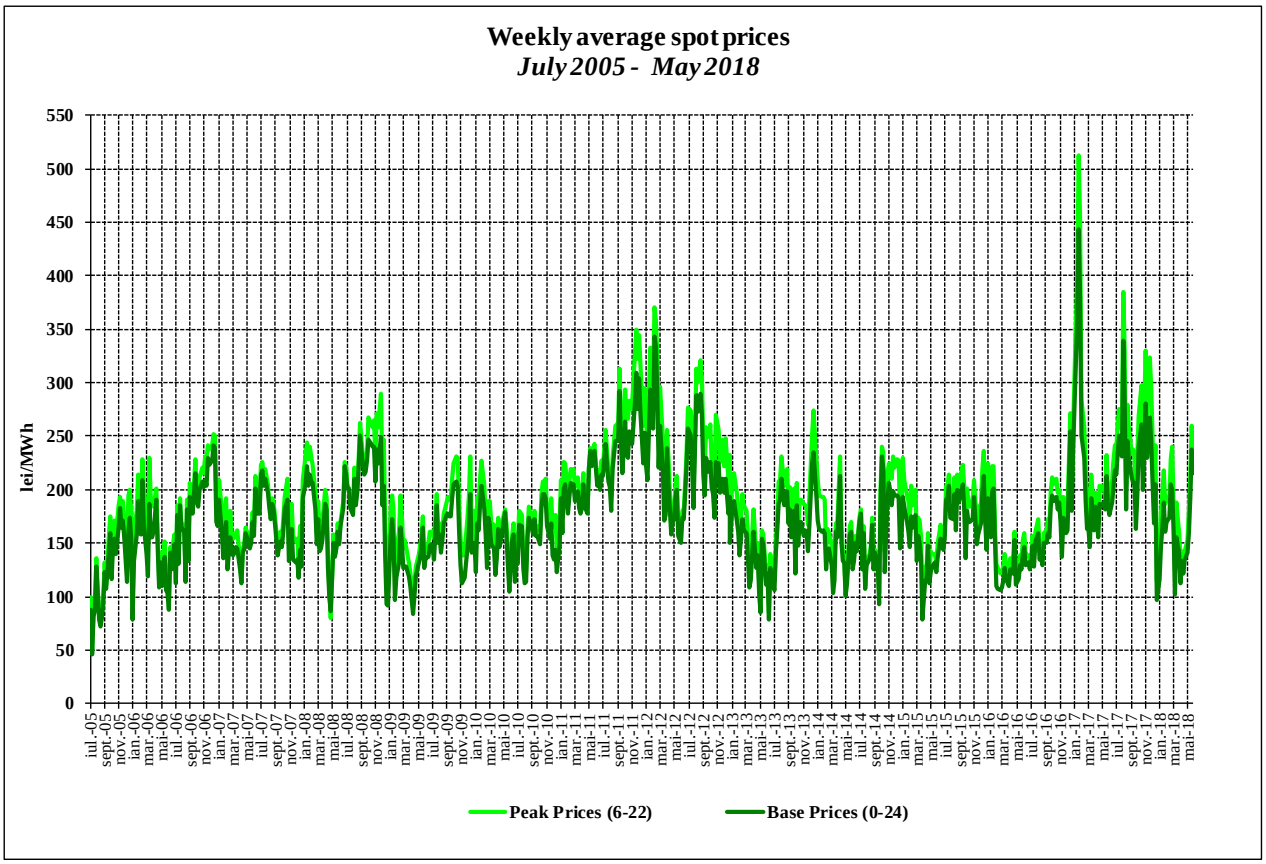
Source: Monthly reports of Opcom SA – processed by MU

The following graph presents the evolution of May 2018 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 MU

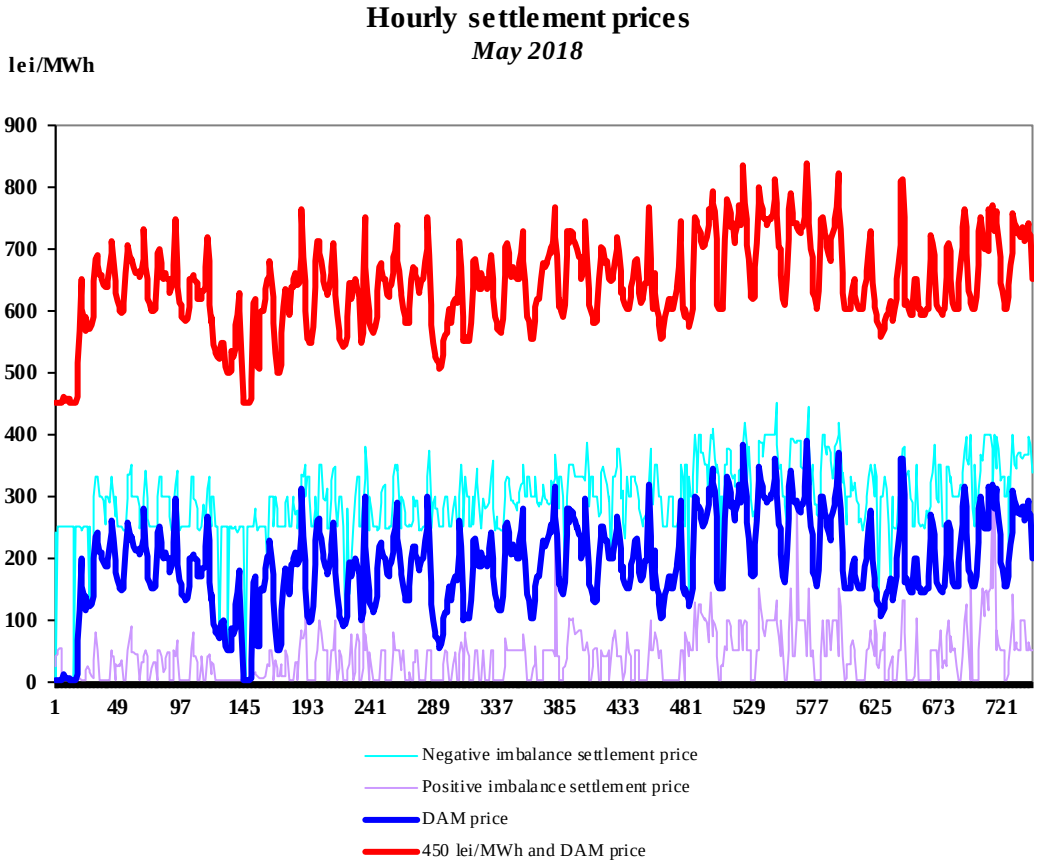
The following graph presents the evolution of weekly average spot prices starting with July 2005:



Source: Daily reports of Opcom SA – processed by MU

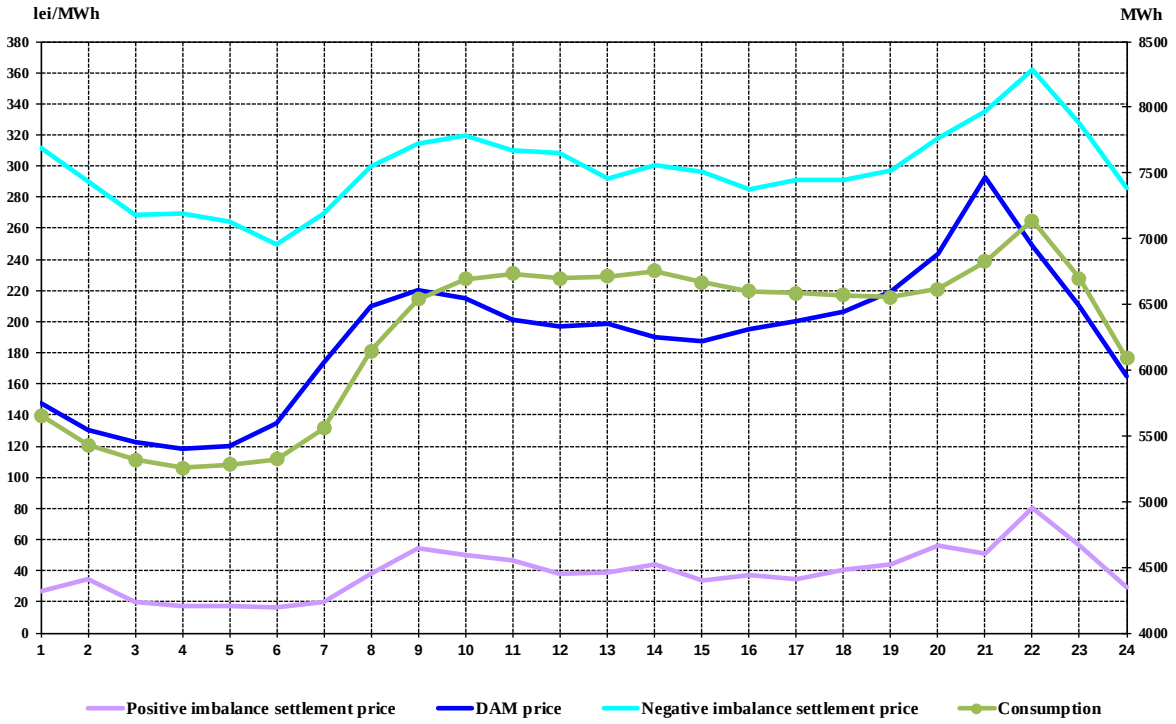
In order to cover the differences between planned/contracted amounts of consumption/ generation and the real time consumption. the system operator (CNTEE Transelectrica SA) operates the BM by ”buying” or "selling" electricity at prices determined by the merit order of dispatchable generators’offers. 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.



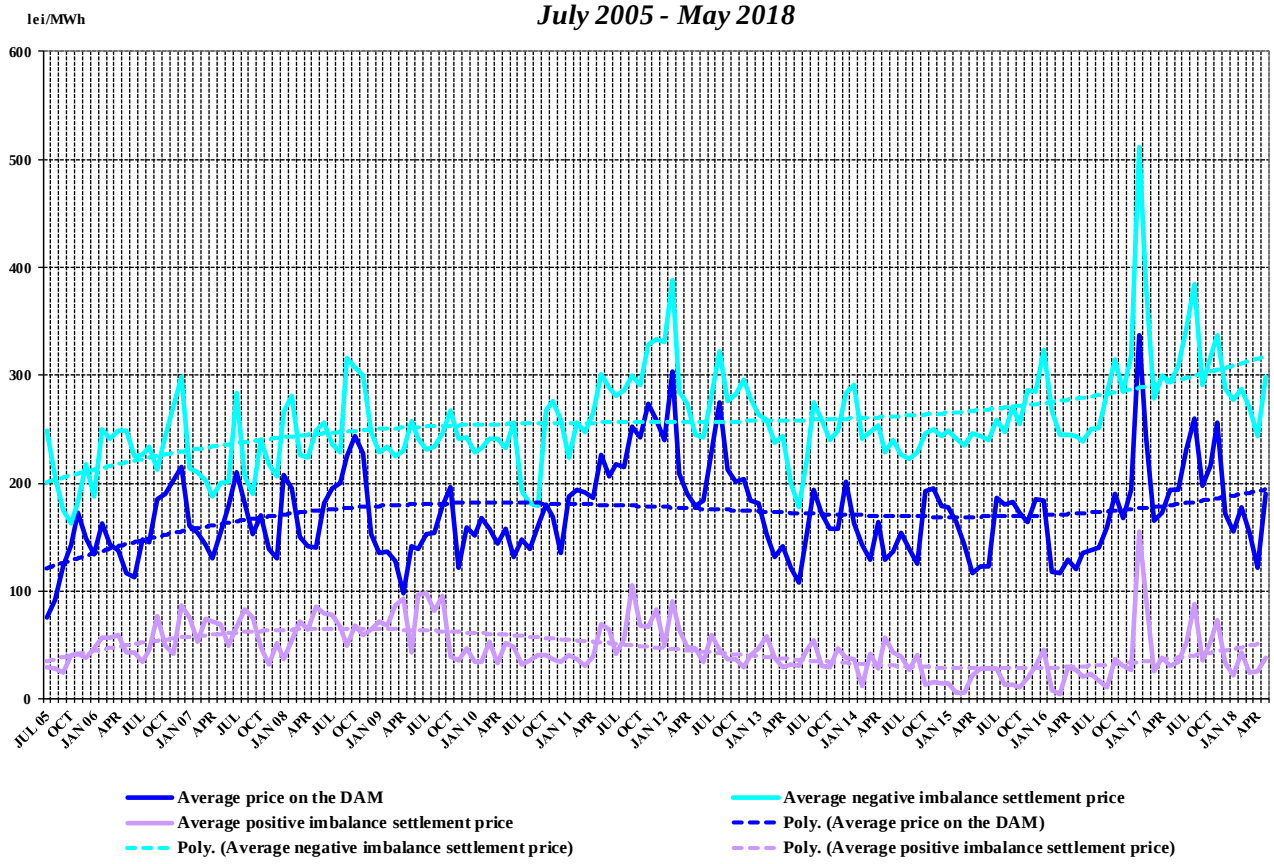
Source: Daily/monthly reports of Opcom SA – processed by MU

Hourly average settlement prices and internal consumption
May 2018



Source: Monthly reports of Opcom SA and CNTEE Transelectrica SA – processed by MU

Monthly average prices on DAM and BM
July 2005 - May 2018



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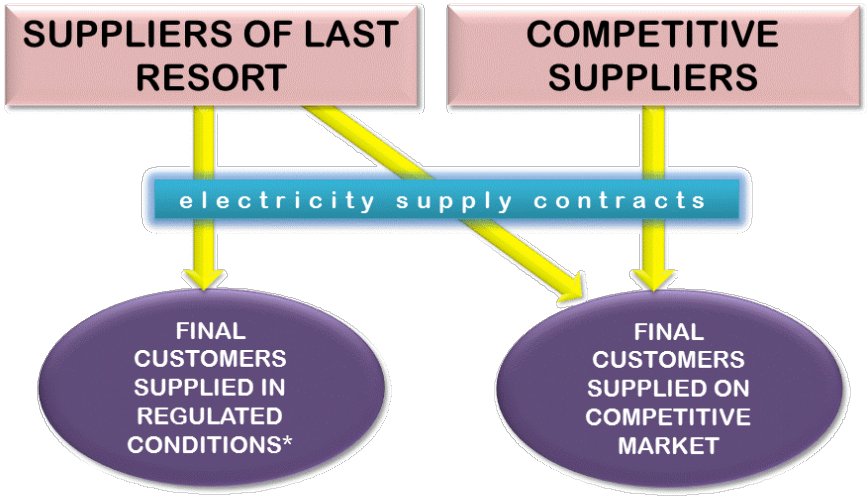
Source: Monthly/daily reports of Opcom SA – processed by MU

III. RETAIL ELECTRICITY MARKET

1. Structure of the retail electricity market

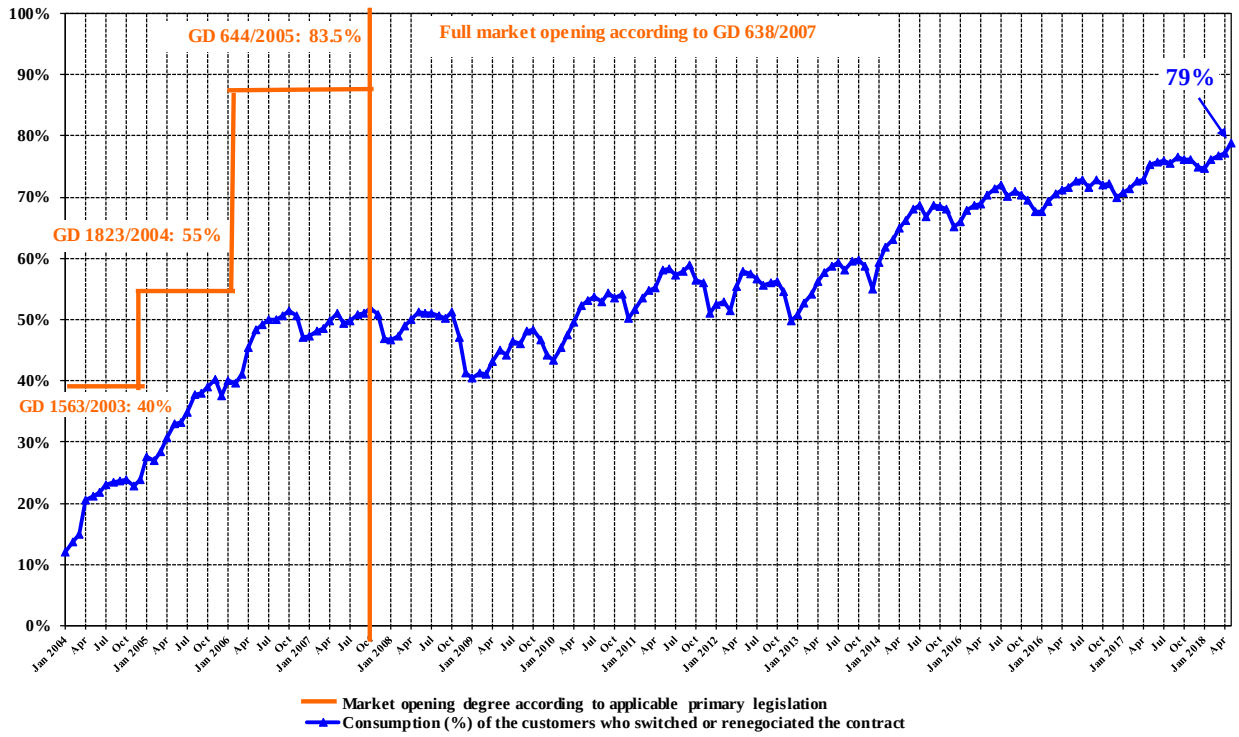


* according to art. 53 (2) and art. 55 (1) from Electricity and Gas Law no. 123/2012

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 – May 2018. The values presented are cumulated from the beginning of the opening process and are presented monthly:

Opening degree evolution of electricity market
January 2004 - May 2018

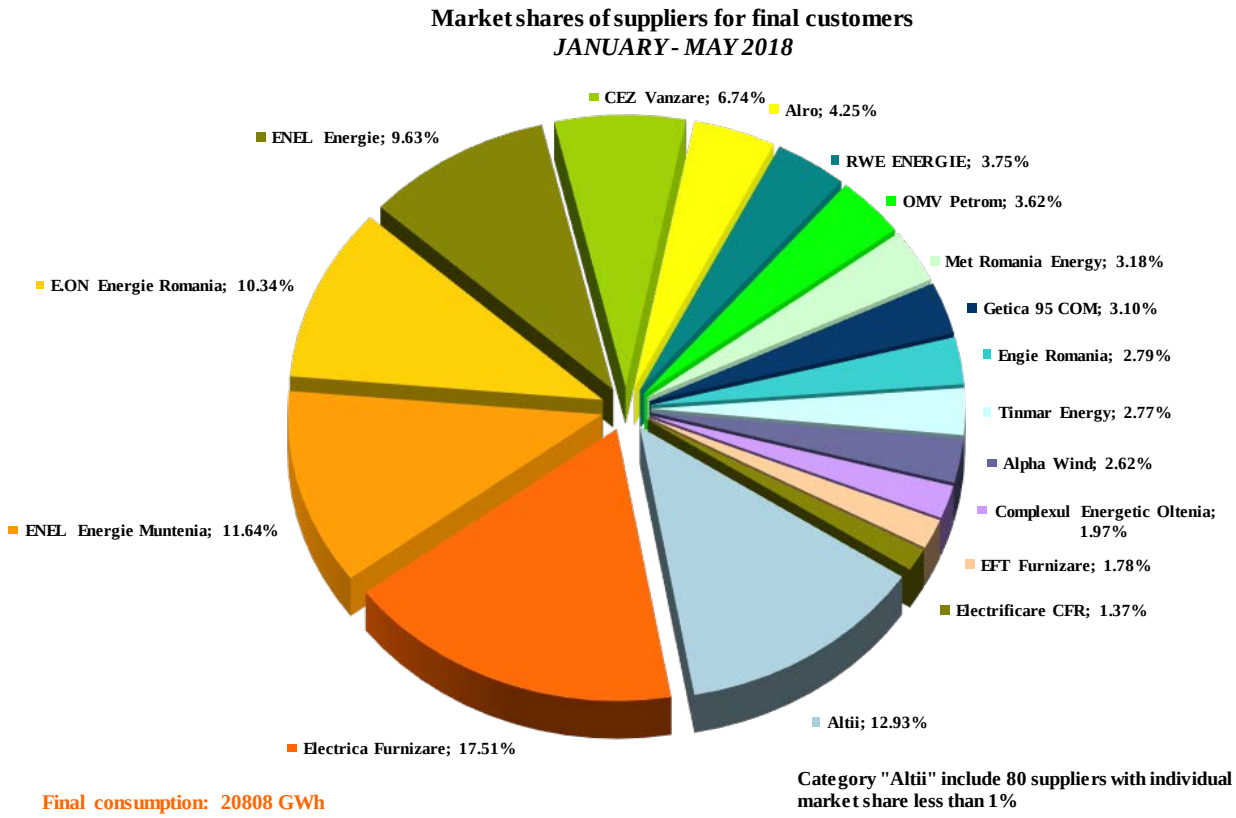


Source: Monthly reports of the final customers' suppliers – processed by MU

3. Market shares of the electricity suppliers

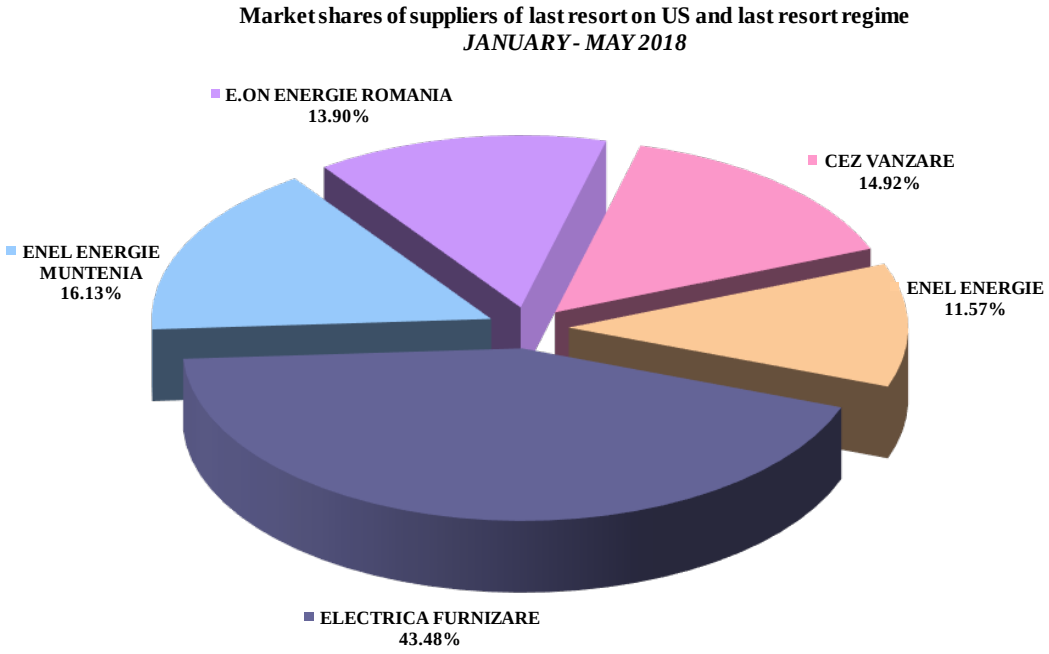
In the following three graphs there are presented the market shares of electricity suppliers on the retail market, calculated:

a) for all suppliers active on the REM, including those ultimate in terms of electricity supplied to final customers (at CPC and UI tariffs) in the US and UI regime, as well as electricity supplied to customers who have switched their supplier or have negotiated the contract;



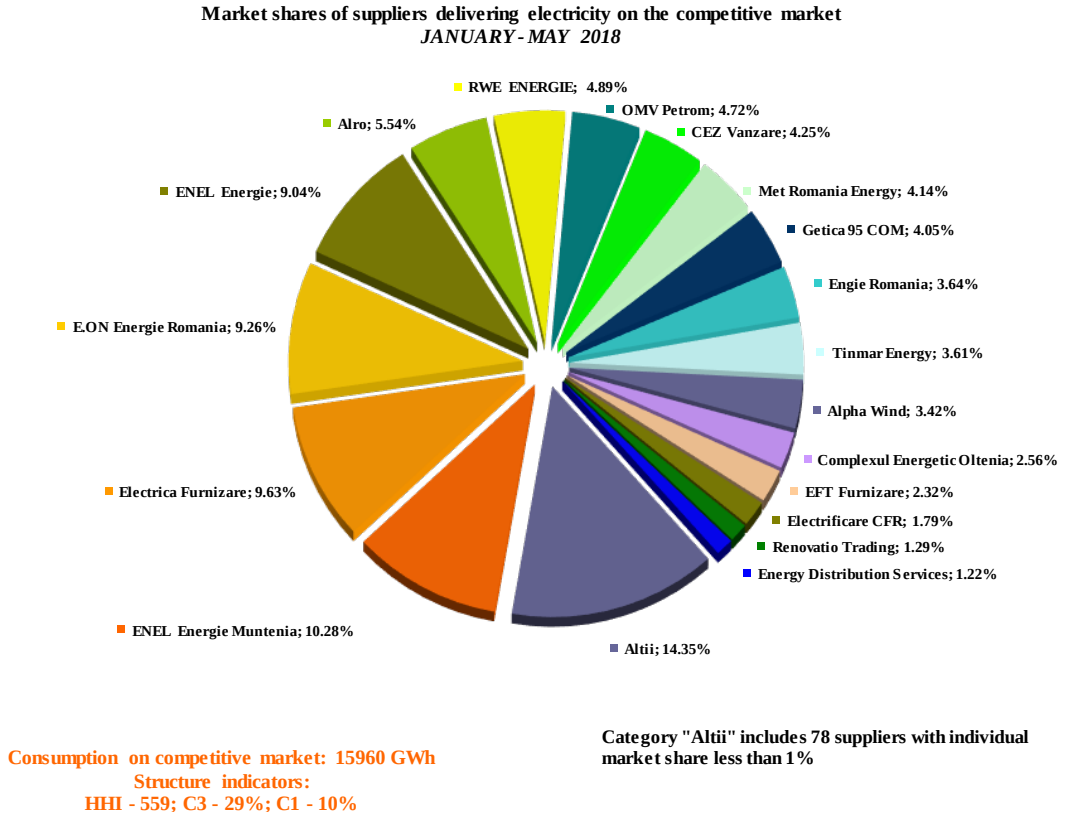
Source: Monthly reports of suppliers for final customers– processed by MU

b) for the suppliers of last resort - depending on the electricity supplied to the final liens supplied under the UA and UI regime;



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

c) for all suppliers, including those of last resort, active in the REM competition segment - depending on the electricity supplied to customers who have changed their supplier or have negotiated their contract.



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

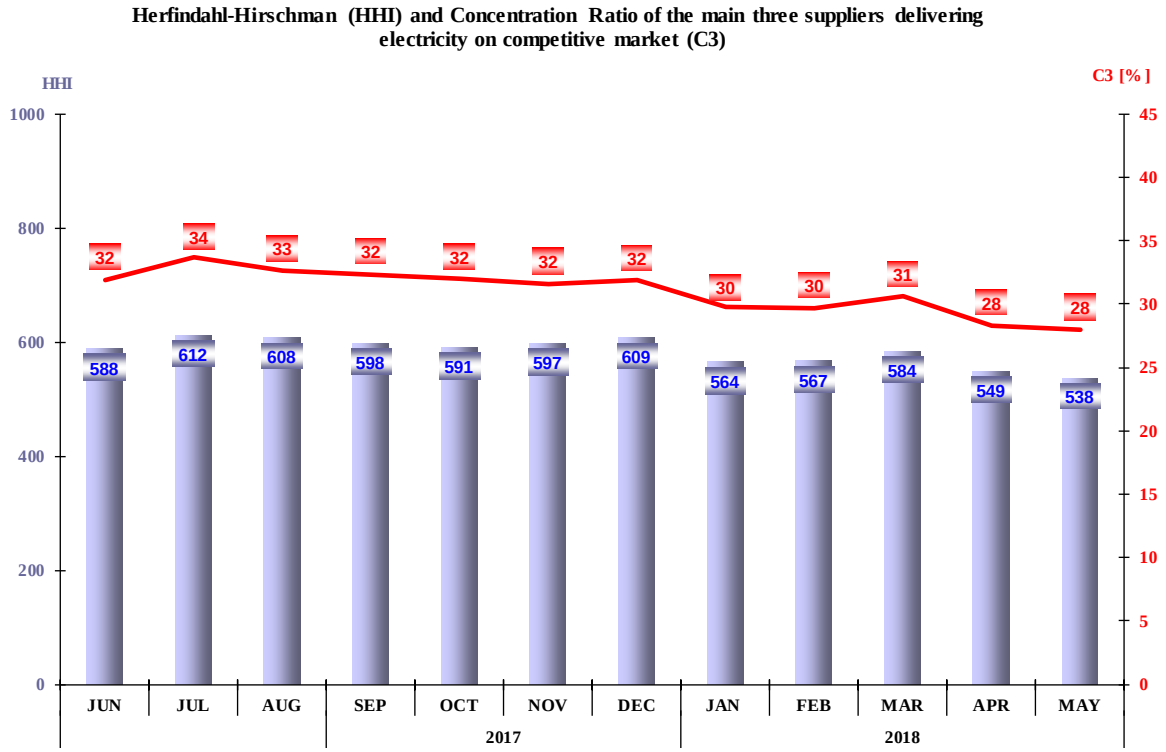
It is noted that the calculation of the market indicator values did not take into account the principle of dominance and the electricity supplied on the basis of which each supplier's market share was established includes the self-consumption of the large industrial customers who also hold a supply license and who have decided to buy their energy from the wholesale market as competitive suppliers. Quantification of the activity carried out within the REM competition segment compared to that of the WEM by suppliers can be achieved by determining the share of sales to final customers in total sales transactions. Thus, the following table includes the number of suppliers active on the REM, structured according to the size of the activity carried out on this market in May 2018.

Number of suppliers	**Share of sales to final customers from total sales transactions**			
	100%	**75% - 100%**	**50% - 75%**	**<50%**
Competitive	10	19	9	28
Of last resort	0	5	0	0

Source: Monthly reports of the suppliers– processed by MU

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 May 2018 in the following graph:



Source: Monthly reports of the suppliers – processed by MU

The table below shows the values of structure indicators of competitive component of REM for and the number of active suppliers in May 2018, 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 - May 2018	Consumption tranches - Non-household customers							
	IA	IB	IC	ID	IE	IF	IG	Total
C1 - % -	33	23	17	10	16	14	20	**10**
C3 - % -	69	48	39	29	42	35	44	**27**
HHI	1978	1216	804	594	873	769	1000	**514**
Consumption - GWh -	101	340	275	684	434	266	884	**2984**
No. of SUPPLIERS	68	77	66	60	26	18	17	**92**
No. of suppliers of last resort	0	5	5	5	5	3	3	**5**
No. of competitive suppliers	52	55	47	45	17	12	7	**64**
No. of producers	16	17	14	10	4	3	7	**23**

Source: Monthly reports of the suppliers – processed by MU

Indicators - May 2018	Consumption tranches - Household customers					
	DA	DB	DC	DD	DE	Total
C1 - % -	58	42	35	33	31	**43**
C3 - % -	94	77	72	75	72	**80**
HHI	4396	2642	2205	2221	2074	**2817**
Consumption - GWh -	68	65	41	31	12	**216**
No. of SUPPLIERS	40	42	40	43	39	52
No. of suppliers of last resort	5	5	5	5	5	**5**
No. of competitive suppliers	31	34	32	35	30	**41**
No. of producers	4	3	3	3	4	**6**

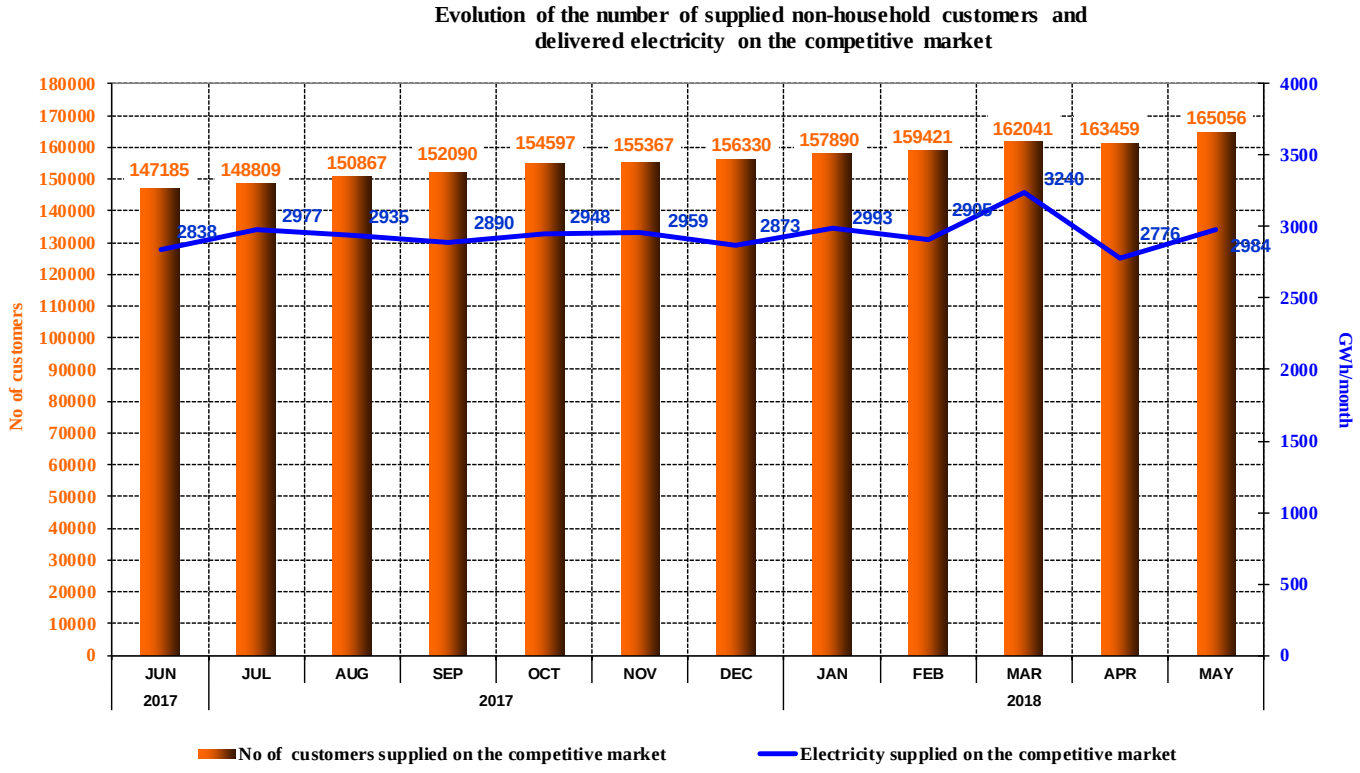
Source: Monthly reports of the suppliers – processed by MU

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 May 2018 this number is split into categories, according to the provisions of Regulation (EU) no. 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:

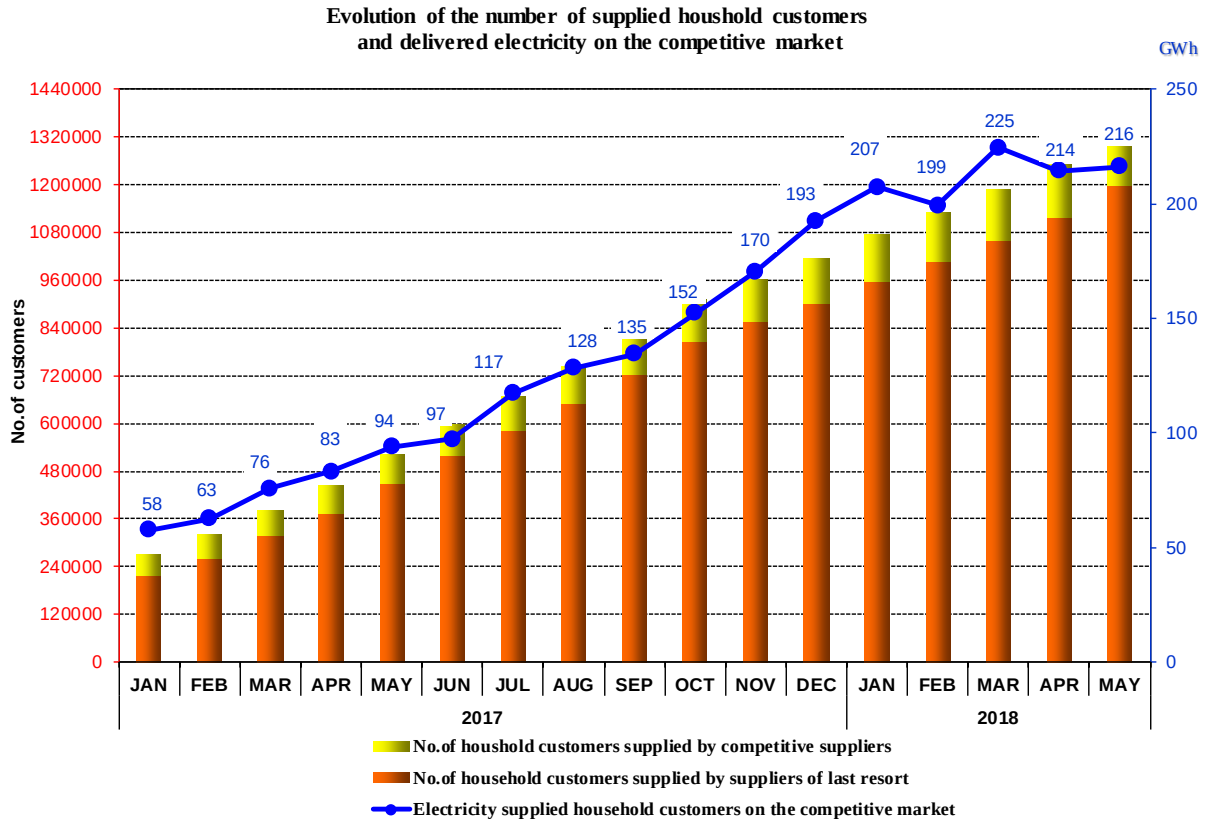
Non-household customers	Annual electricity consumption (MWh):	
IA		<20
IB	>=20	<500
IC	>=500	<2000
ID	>=2000	<20000
IE	>=20000	<70000
IF	>=70000	<150000
IG	>=150000	

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



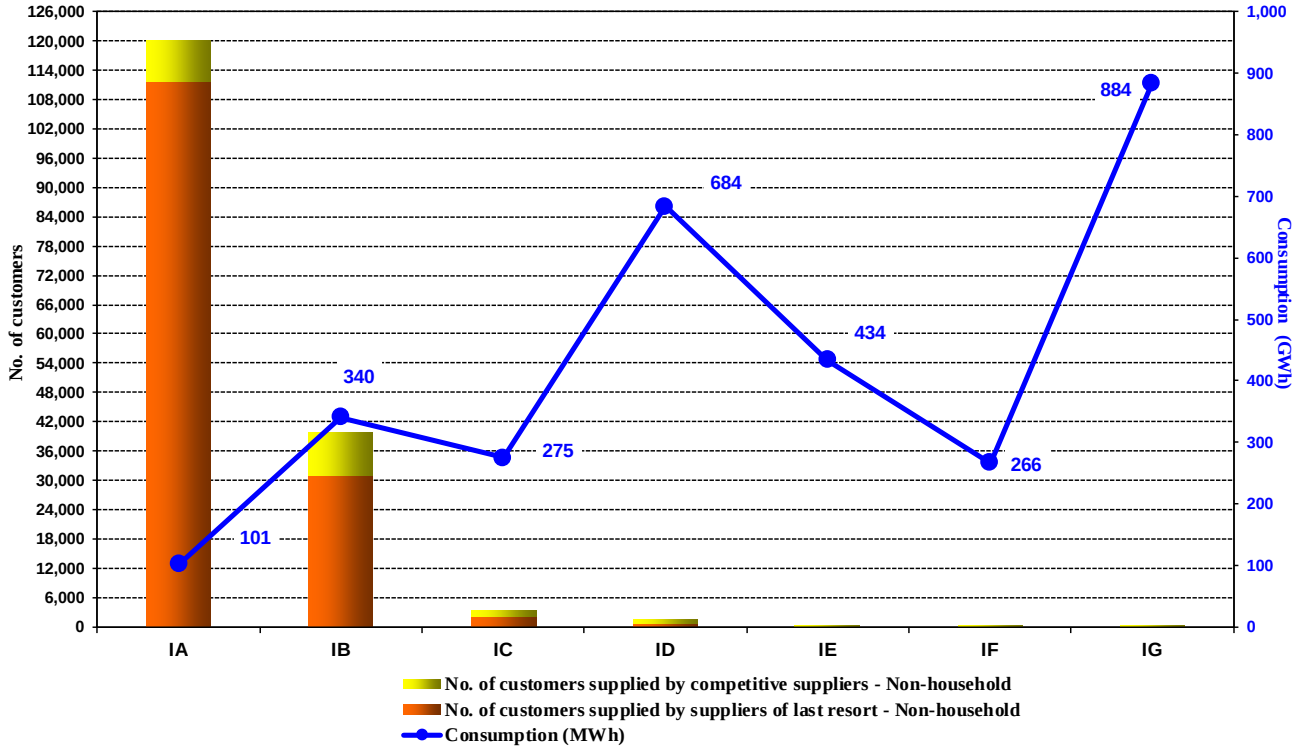
Source: Monthly reports of the competitive suppliers – processed by MU

Competitive electricity sales to household final customers between January 2017 and May 2018 are shown in the following graph:



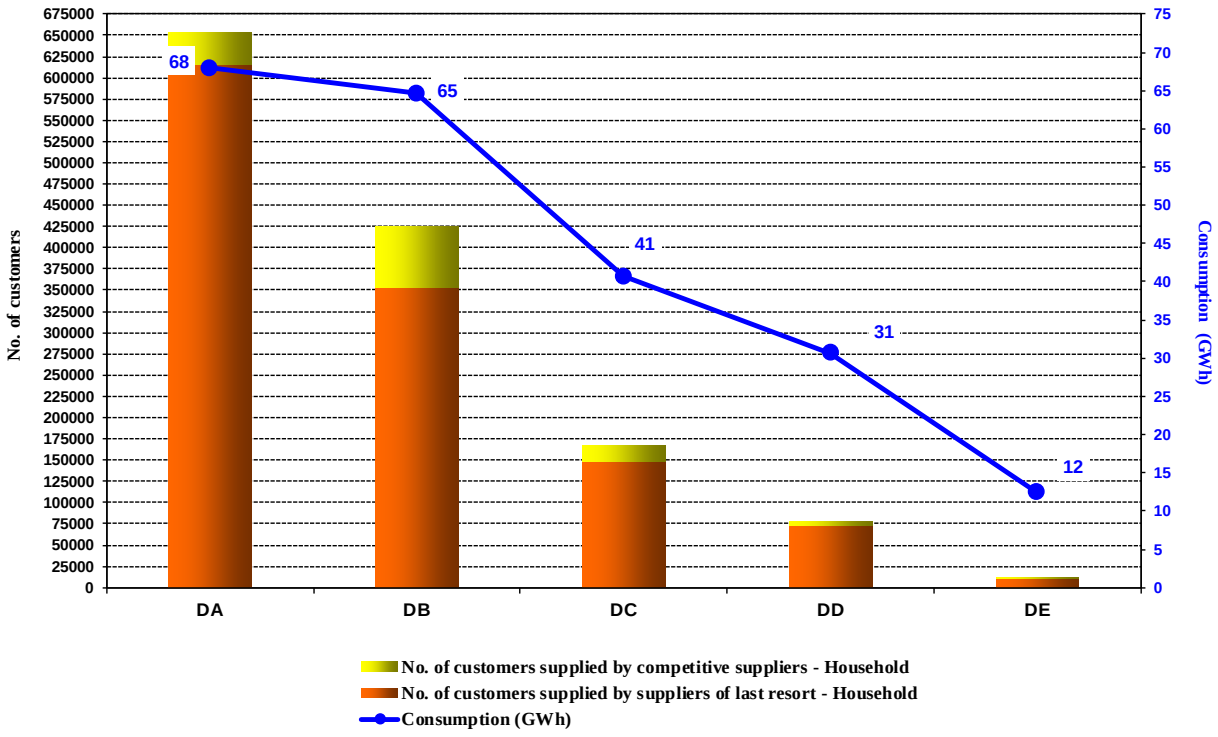
Source: Monthly reports of the competitive suppliers – processed by MU

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



Source: Monthly reports of the suppliers – processed by MU

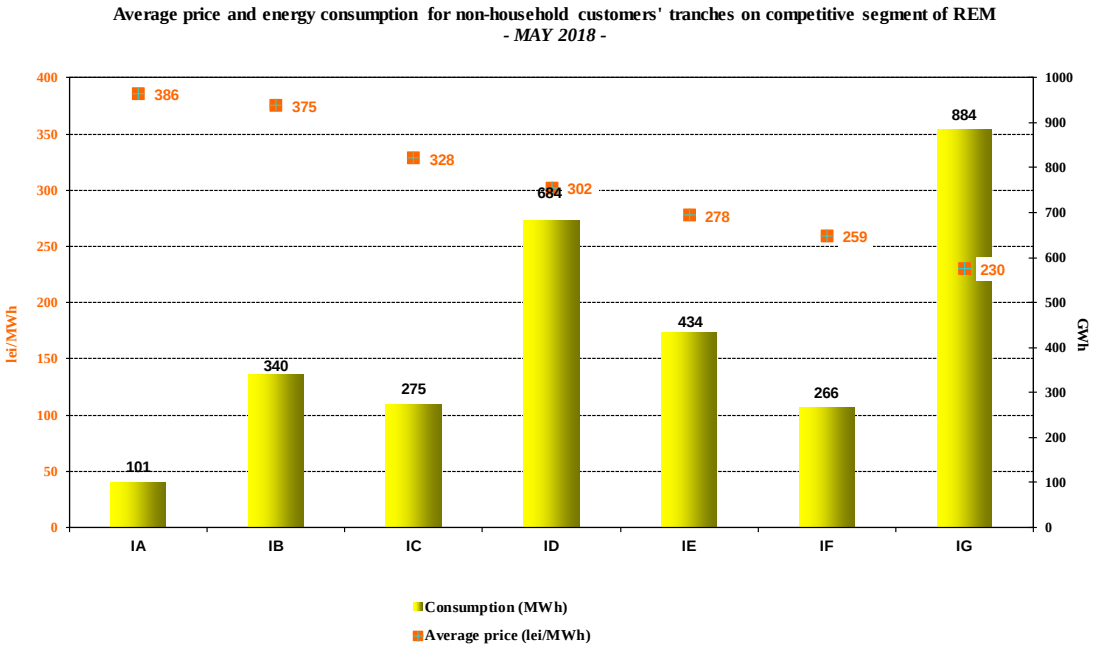
Number of household customers supplied on competitive market and the consumption of each category of customers
- MAY 2018 -



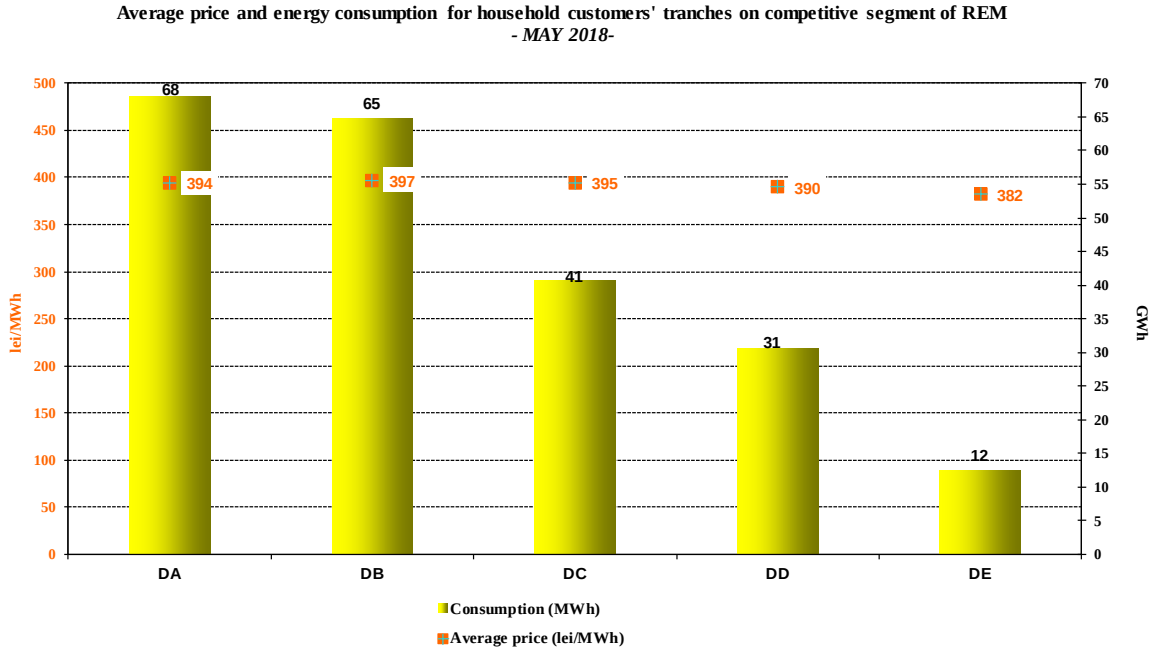
Source: Monthly reports of the suppliers – processed by MU

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) no. 2016/1952 of the European Parliament and of the Council for May 2018.



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



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

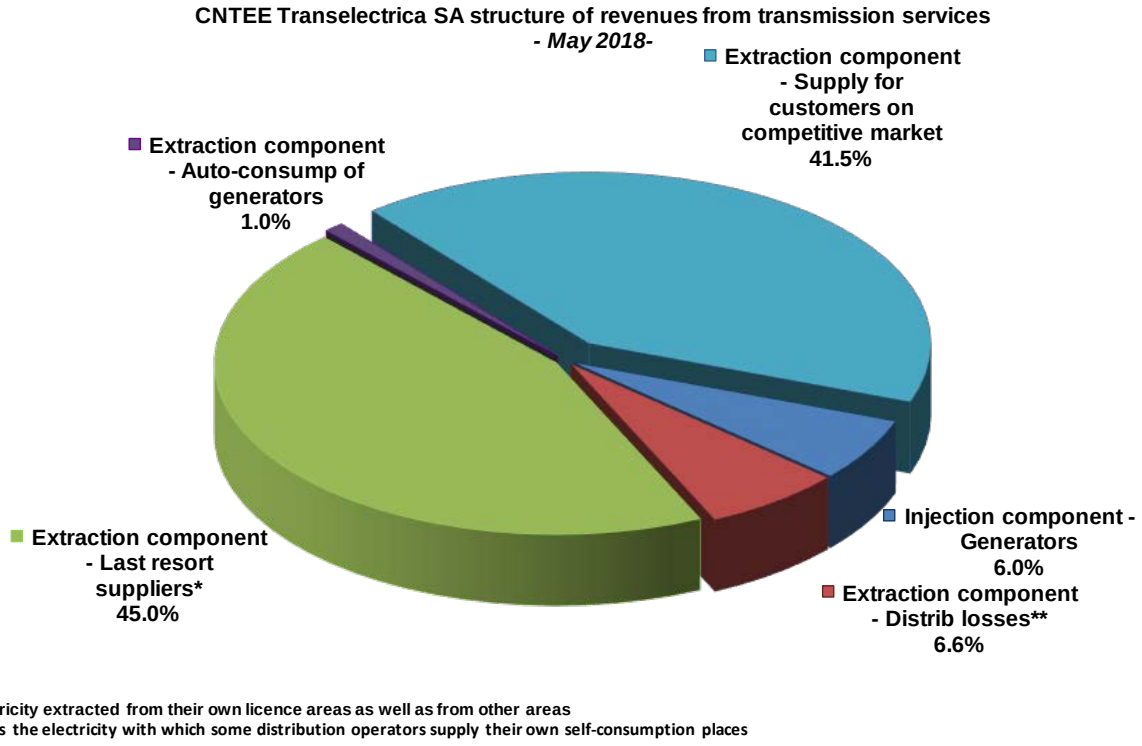
***Specifications**: The average selling price for each consumption tranche was determined as the weighted average of the prices charged by suppliers with the quantities supplied by them to that household consumption in accordance with the provisions of Regulation (EU) 1952/2016. Prices do not include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

IV. TRANSMISSION AND SYSTEM OPERATOR - 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 Transelectrica SA revenues from performing the transmission services and reflects the structure of its clients benefiting from this type of service in May 2018.

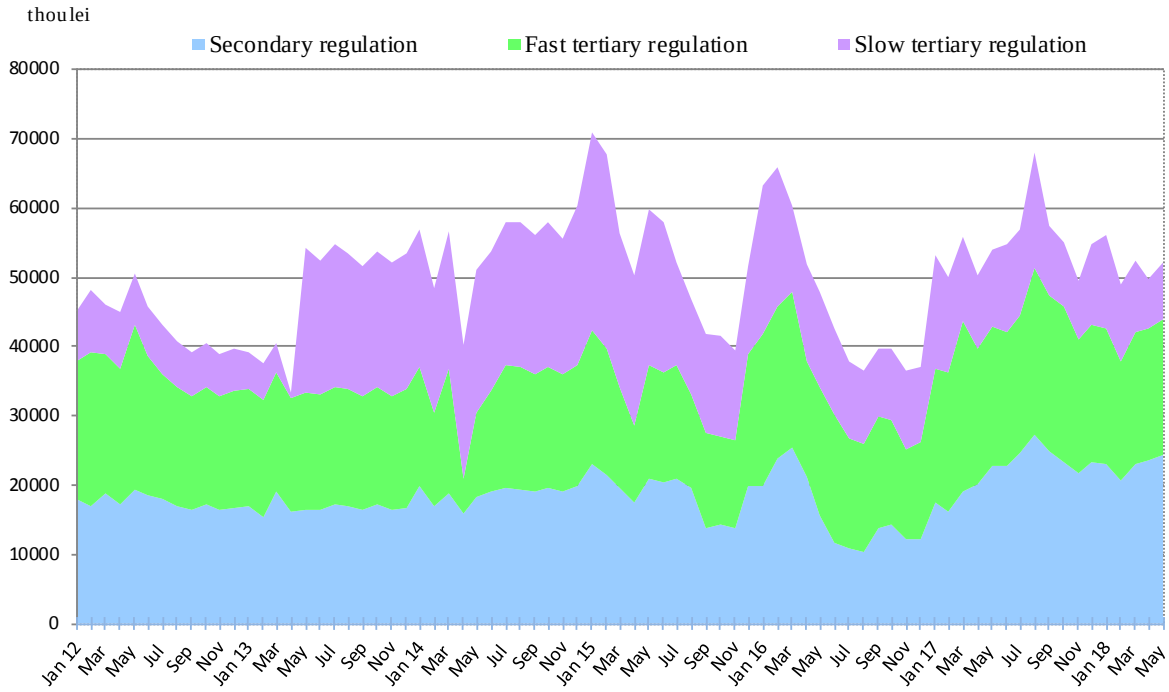


Source: Monthly reports of CNTEE Transelectrica SA – processed by MU

In order to perform the system operator tasks, CNTEE Transelectrica 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 tertiar, 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 MU

V. MARKET RULES EVOLUTION IN MAY 2018

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

• Order of ANRE President no. 94 / 22.05.2018 approving the regulated tariff for electricity exchanges with the perimetric countries, perceived by the transmission and system operator for the use of the National Electric Power System for the electricity exchanges programmed with the perimetric countries;

• Order of ANRE President no. 102 / 29.05.2018 approving the abrogation of ANRE President's Order no. 121/2017 for the approval of the conditions of application of the tariffs the competitive market component;

• ANRE President's Decision no. 811 / 22.05.2018 regarding the approval of the quantities produced in high efficiency cogeneration units benefiting from the bonus scheme for April 2018;

• ANRE President's Decision no. 812 / 22.05.2018 on the establishment of the maximum price for the universal service for the last resort supplier CEZ Vânzare S.A.;

• ANRE President's Decision no. 813 / 22.05.2018 on the setting of the maximum price for universal service for the last resort supplier Electrica Furnizare S.A.;

• ANRE President's Decision no. 814 / 22.05.2018 on the setting of the maximum price for the universal service for the last resort supplier Enel Energie S.A.;

• ANRE President's Decision no. 815 / 22.05.2018 on the setting of the maximum price for the universal service for the last resort supplier Enel Energie Muntenia S.A.;

• ANRE President's Decision no. 816 / 22.05.2018 on the establishment of the maximum price for the universal service for the last resort supplier E.ON Energie România S.A.;

VI. EXPLANATIONS AND ABBREVIATIONS

- ***Internal consumption*** *is computed, in this report, as the sum of electricity delivered into the networks (with the below meaning) and the trade balance made on the basis of the import and export contract of the wholesale market participants.;*
- *C**onsumption of final customers on US and SLR market** represents the consumption of customers supplied by the suppliers of last resort at CMC and SLR prices;*
- *C**onsumption 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)

1. Abbreviation

1. MU – Monitoring Unit
2. WEM – Wholesale Electricity Market
3. REM – Retail Electricty Market
4. CMBC – Centralised Market of Bilateral Contracts
5. CMC – Competitive Market Component
6. DAM – Day Ahead Market
7. ID – Intraday Market
8. BM – Balancing Market
9. MCP – Market Clearing Price
10. PCSU – Centralised Market of Universal Service (Romanian abbreviation)
11. 4M MC – Price coupling mechanism for spot markets from Romania. Hungary. Slovakia and Czech Republic
12. BRP – Balancing Responsible Party
13. TG/TL – injection / extraction component of the transmission tariff
14. OU-NPD – Operational Unit-National Power Dispatch
15. US – Universal Service
16. DO – Distribution operator
17. SLR – Supplier of last resort
18. ATC – Available Transmission Capacity
19. DO – Distribution operator
20. SLR – Supplier of last resort
21. ATC – Available Transmission Capacity