ELECTRICITY MARKET MONITORING REPORT

JUNE 2019

- This document represents an unauthorised translation of the Romanian document -

3rd Constantin Nacu St., Sector 2, Bucharest, Postal code 020995
Phone: (021) 327 8100. Fax: (021) 312 4365. E-mail: anre@anre.ro. Web: www.anre.ro

TABLE OF CONTENTS

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

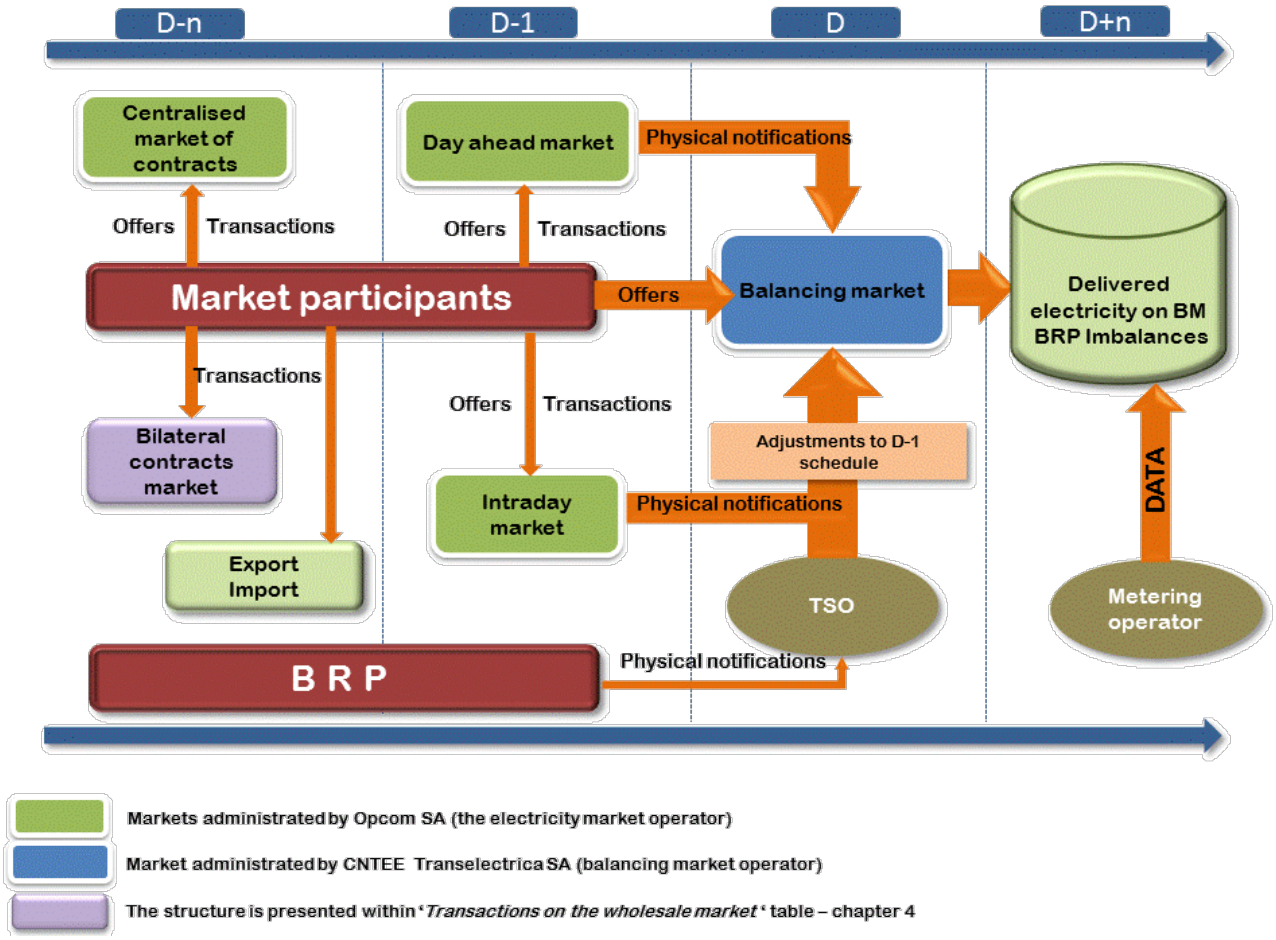
- **GD 365/1998** – vertically integrated monopol – RENEL – was split into separated distribution and supply companies (SC Electrica SA) and generation companies (SC Termoelectrica SA and SC Hidroelectrica SA) were established within a new company - CONEL SA. Two other electricity generators (SN Nuclearelectrica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

December 2013 – removal of the export tariffs applied by the electricity market operator;
- certification with conditions for CNTEE Transelectrica SA as an independent transmission and system operator;
- application of last stage of the phasing out calendar for removal the regulated tariffs applied to the final nonhousehold clients who do not use their eligibility rights;

- **August 2014** – CNTEE Transelectrica SA certification as NES transmission system operator following the „independent system operator" model;
- **October 2014** – entry into force of the Law no. 127/2014 for amending the Law no. 123/2012;
- **November 2014** – the launch of the CZ-SK-HU-RO market coupling project. that encompasses the DAM markets from the Czech Republic, Slovakia. Hungary and Romania;
- **January 2015** – entry into force of the new centralized market for bilateral contracts with its components: Extended Auctions Mechanism (CMBC–EA), Continuous Negotiation Mechanism (CMBC–CN), Fuel Processing Mechanism (CMBC–FP);
- **February 2015** – implementing the centralized market for universal service;
- **November 2016** - entry into force of the Law no. 203/2016 amending the Law no. 123/2012 on electricity and natural gas.
- **July 2018** - entry into force of Law no. 167/2018 amending and supplementing Law on electricity and natural gas no. 123/2012.
- **December 2018** – EGO no. 114/2018 regarding the introduction of some measures in the field of public investments and some fiscal-budgetary measures, the modification and completion of some normative acts and the extension of some deadlines.
- **March 2019** – EGO no. 19/2019 amending and supplementing EGO no. 114/2018 on establishing measures in the field of public investment and some fiscal-budgetary measures, the modification and completion of some normative acts and the extension of some deadlines.

II. WHOLESALE ELECTRICITY MARKET

1. *Structure of the wholesale electricity market*



2. Wholesale electricity market participants

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

No.	Category
A	***Electricity generators on classic sources operating dispatching units***
1	Bepco SRL
2	CET Govora SA
3	CE Hunedoara SA
4	CE Oltenia SA
5	Contour Global Solutions SRL
6	Ecogen Energy SA
7	Electrocentrale Bucureşti SA
8	Electro Energy Sud SRL
9	Enet Focsani SA
10	Modern Calor SA
11	OMV Petrom SA
12	Petrotel-Lukoil SA
13	Rulmenti SA
14	SNGN Romgaz SA
15	Termoficare Oradea SA
16	Veolia Energie Iaşi SRL
17	Veolia Energie Prahova SRL
18	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	Braila Winds SRL
5	Bridgeconstruct SRL
6	Catalan Electric SRL
7	Cernavoda Power SRL
8	Corni Eolian SRL
9	Crucea Wind Farm SRL
10	Dan Holding MGM SRL
11	Eco Power Wind SRL
12	Ecoenergia SRL
13	EDPR Romania SRL
14	Electrica Serv SRL
15	Electricom SA
16	Elektra Green Power SRL
17	Elektra Wind Power SRL
18	Enel Green Power Romania SRL
19	Energia Verde Ventuno SRL
20	Enex SRL
21	Eol Energy SRL
22	Eol Energy Moldova SRL
23	Eolian Center SRL
24	Eolica Dobrogea One SRL
25	EP Wind Project (ROM) SIX SA
26	Eviva Nalbant SRL
27	Ewind SRL
28	General Concrete Cernavoda SRL
29	Green Energy Farm SRL
30	Ground Investment Corp SRL
31	Holrom Renewable Energy SRL
32	Horia Green SRL
33	Intertrans Karla SRL
34	Kelavent Charlie SRL
35	Kelavent Echo SRL
36	Land Power SRL
37	LC Business SRL
38	M&M 2008 SRL
39	Mireasa Energies SRL
40	East Wind Farm SRL
41	Ovidiu Development SRL
42	Peştera Wind Farm SRL
43	Romconstruct Top SRL
44	Sibioara Wind Farm SRL
45	Smart Clean Power SRL
46	Smartbreeze SRL
47	Soft Grup SRL
48	Tomis Team SRL
49	Verbund Wind Power Romania SRL
50	Wind Park Invest SRL
51	Windfarm MV I SRL
52	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	Warehouses de Paw Romania
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	Axpo Energy Romania SRL
2	CEZ as
3	Ciga Energy SA
4	Cinta Energy SA
5	Danske Commoditiesa/s Aarhus
6	EDF Trading Limited
7	Energo-Pro Trading EAD
8	Elpetra Energy E.A.D.
9	Energy Deta SRL
10	Energi Danmark A/S
11	Energy Supply D.O.O
12	Enero Furnizare SRL
13	Eolian Project SRL
14	EVN Trading South East Europe
15	Ezpada AG
16	Ezpada SRO
17	Flavus Investiţii SRL
18	Freepoint Commodities Europe Ltd
19	General Enegetic SA
20	GEN I trgovanje in prodaja elektricne energije doo
21	Holding_ Slovenske_ Elektrarne
22	Interenergo Energetski, Inzeniring d.o.o.
23	Lord Energy SRL
24	Met RO NRG
25	MVM Partner Zrt
26	Neptun SA
27	Nis Petrol SRL
28	OMV Gas Marketing & Trading GmbH
29	Petrol, Slovenska energetska druzba
30	Photovoltaic Green Project SRL
31	Statkraft Markets GmbH
32	Unit Energy Trade SRL
33	WE Ppower Team
L	***Electricity Suppliers acting also on the retail market***
1	Absolute Energy SRL
2	Aderro G.P. Energy SRL
3	A Energy Ind SRL
4	Alive Capital SRL
5	Alro SA
6	Aqua Energia SA
7	Anchor Grup SA
8	Apuron Energy SRL
9	CET Arad SA
10	Cotroceni Park SA

No.	Category
	Electricity Suppliers acting also on the retail market
11	Crest Energy SRL
12	CYEB SRL
13	EFT Furnizare SRL
14	Elcata MHC SRL
15	Energy Trade Activ SRL
16	Electric Planners SRL
17	Electrificare CFR SRL
18	Elsid SA
19	Electrocarbon SA
20	Electromagnetica SA
21	Enel Trade Romania SRL
22	Energia Gas & Power SRL
23	Energy Distribution Services SRL
24	Engie Romania SA
25	Enol Grup SA
26	Entrex Services SRL
27	GDM Logistic SRL
28	Getica 95 Com SRL
29	Grenerg SRL
30	Hermes Energy International SRL
31	ICCO Energ SRL
32	ICPE Electrocond Technologies SA
33	Imperial Development SRL
34	Industrial Energy SA
35	Izvor de Lumina SRL
36	Luxten LC SA
37	MET Romania Energy SA
38	Monsson Trading SRL
39	Next Energy Parteners SRL
40	Nova Power&Gas SRL
41	P.C. Management & Consulting SRL
42	Plenerg SRL
43	Power Clouds SRL
44	QMB Energ SRL
45	RCS&RDS SA
46	Renovatio Trading SRL
47	RES Energy Solutions SA
48	Restart Energy One SRL
49	Romelectro SA
50	Stock Energy SRL
51	Tinmar Energy SA
52	Transenergo Com SA
53	Transformer Energy Supply SRL
54	Uzinsider General Contractor SA
55	Veolia Energie România SA
56	Werk Energy SRL

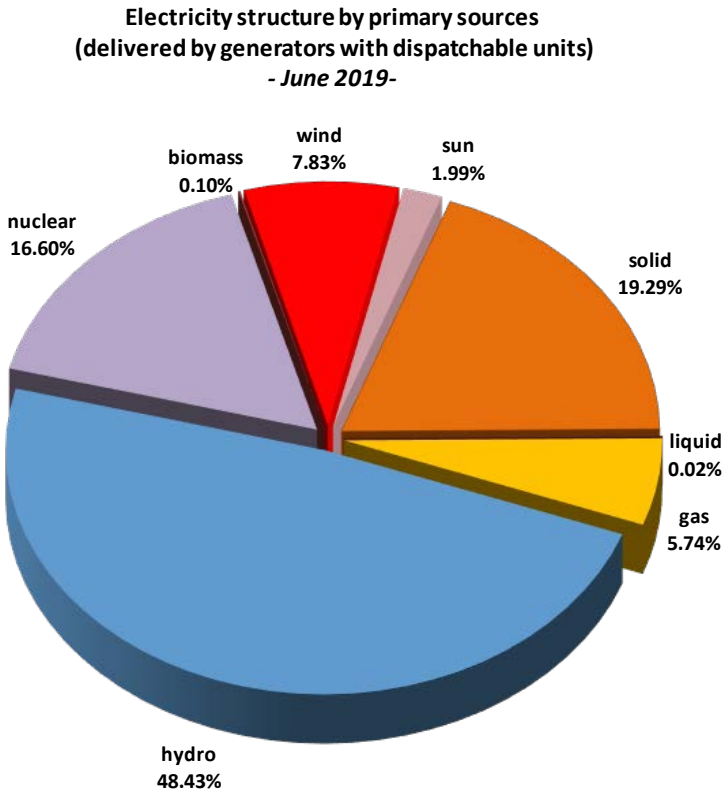
*Electricity market participants report to ANRE technical/commercial data according to the *Methodology for wholesale electricity market monitoring*, approved by ANRE Order no. 67/2018, as well as according to the *Methodology for retail electricity market monitoring*, approved by ANRE Order no. 60/2008,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

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

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

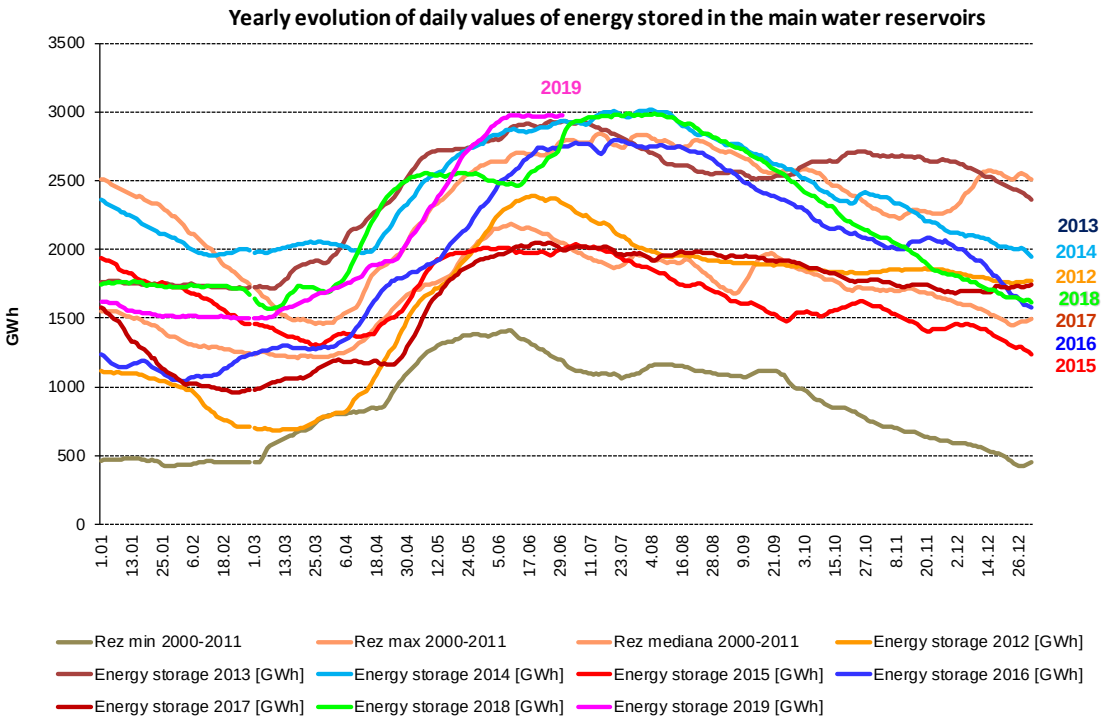
The category of electricity suppliers acting exclusively on the wholesale market includes electricity supply licensees that are active only on the wholesale market and electricity trading licensees with licenses issued according to ANRE Order no. 13/2015 for the approval of the „General conditions associated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

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



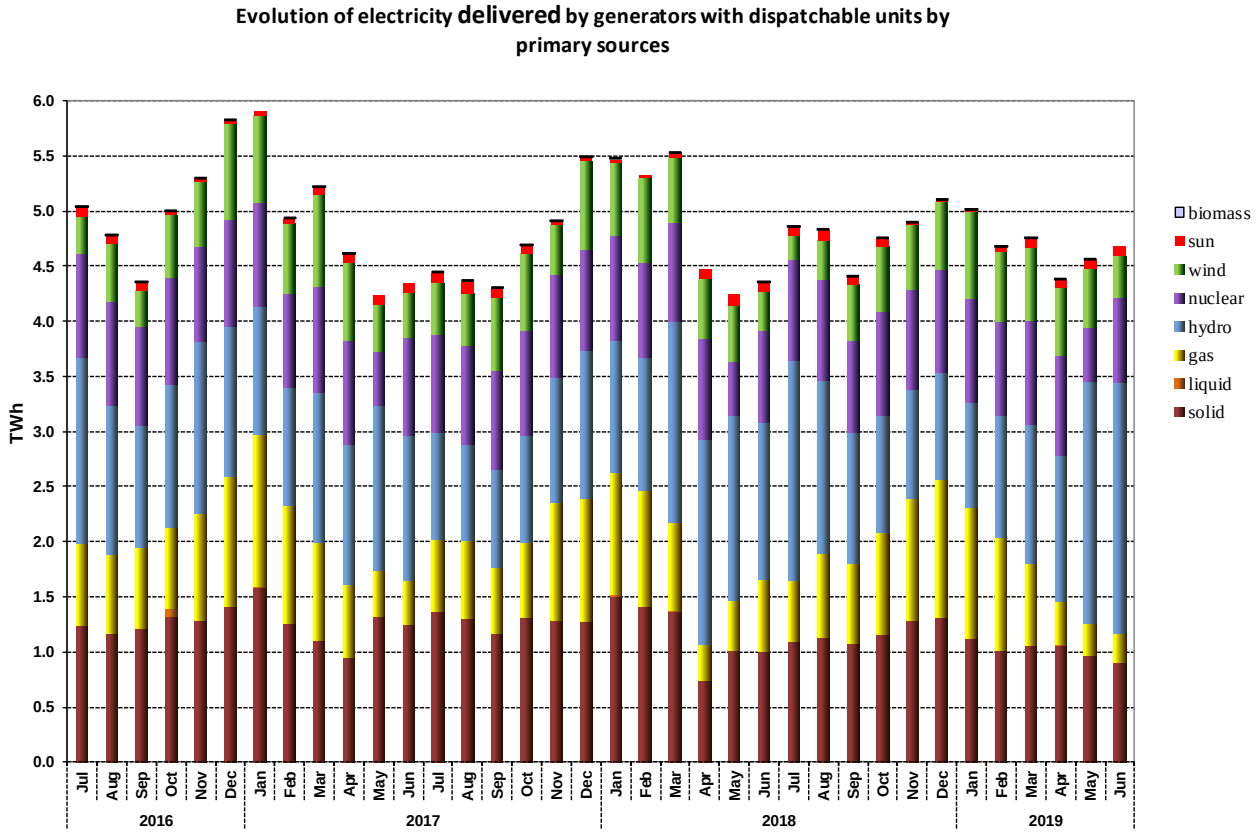
Source: Monthly reports of producers – Electricity Market Monitoring Unit assessment

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



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

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



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

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

Nr. crt.	INDICATOR	UM	June 2018	June 2019	%	Jan-June 2018	Jan-June 2019	%
0	1	2	3	4	5=4/3*100	6	7	8=7/6*100
1	Generated electricity	TWh	4.63	4.94	106.70	31.29	29.89	95.53
2	Delivered electricity	TWh	4.36	4.68	107.34	29.44	28.12	95.52
3	Import	TWh	0.22	0.14	63.64	1.38	1.73	125.36
4	Export	TWh	0.26	0.56	215.38	2.96	2.16	72.97
5	Internal consumption (2+3-4)	TWh	4.32	4.26	98.61	27.85	27.69	99.43
6	Consumption of household customers:	TWh	0.94	1.01	107.55	6.41	6.61	103.28
6.1	*- on US/ regulated regime*	*TWh*	*0.73*	*0.64*	*87.67*	*5.13*	*4.35*	*84.80*
6.2	*- on the competitive market*	*TWh*	*0.21*	*0.37*	*176.19*	*1.28*	*2.26*	*176.56*
7	Consumption of non-household customers:	TWh	3.10	2.98	96.02	17.94*	17.70	98.64
7.1	*- on universal service and last resort regime and inactive clients*	*TWh*	*0.08*	*0.08*	*100.00*	*0.52*	*0.51*	*98.08*
7.2	*- on the competitive market*	*TWh*	*3.02*	*2.90*	*96.02*	*17.94**	*17.70*	*98.66*
8	Transmission–Injection component	TWh	4.25	4.58	107.76	28.78	27.49	95.52
9	Transmission–Extraction component	TWh	4.37	4.36	99.77	27.96	27.92	99.86
10	Actual transmission grid losses	TWh	0.09	0.08	88.89	0.60	0.50	88.89
11	Heat generated for delivery	Tcal	444.62	469.55	105.61	7071.28	6857.48	96.98
12	Heat in co-generation	Tcal	355.15	374.69	105.50	5295.94	5123.86	96.75

Notes:

1. The produced energy and the delivered energy are presented in accordance with the reports sent by electricity generation licensees that are monitored - producers operating dispatchable electric groups, as defined in the Programming Regulation of Production Units and Dispatchable Consumers, approved by ANRE Order no. 32/2013 as amended;

2. The imported/ exported quantities do not include transits and cross-border exchanges of electricity by CNTEE Transelectrica SA with neighboring power systems in order to balance the system;

3. The electricity for which a transport contract is concluded corresponds to the electricity delivered from the plants with installed capacity of more than 5 MW connected to the transmission and distribution networks; the electricity extracted from the network for which a transport contract is concluded coincides with the electricity for which the electricity extraction tariff is charged (according to ANRE Order no. 108/2018);

4. As of 1 March 2019, the consumption of households under US regime is ensured under a regulated regime by suppliers of last resort (according to ANRE Order no. 11/2019).

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

4. The structure of trades on the wholesale electricity market

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

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

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

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

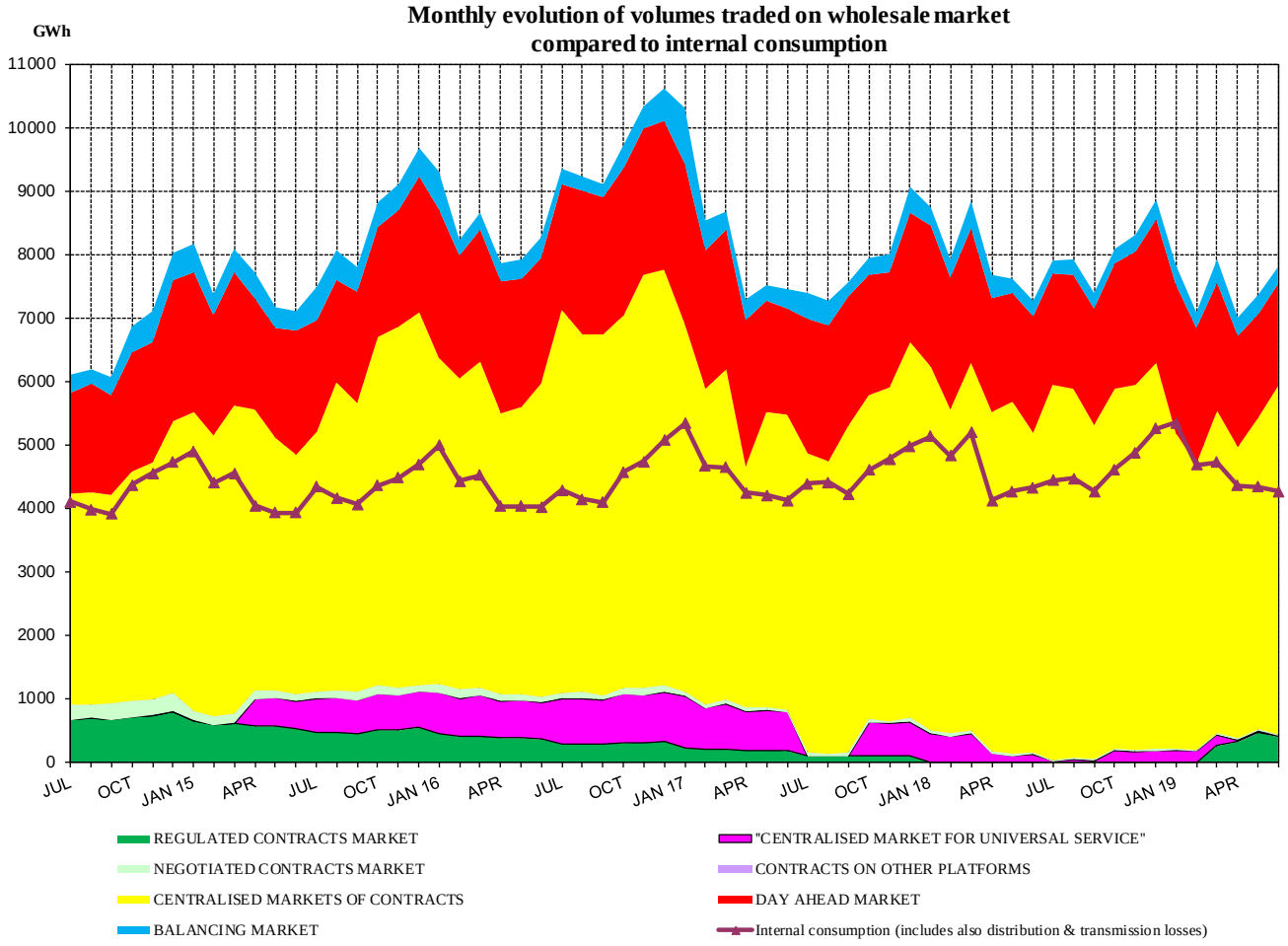
The following table presents the volumes traded and the average prices on each type of contracts and on the main components of the wholesale market, in the month under review compared to the previous month and the similar month from the previous year. The aggregated volumes and the average prices on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

WHOLESALE MARKET TRADES	May 2019	June 2019	June 2018
1. BILATERAL CONTRACTS MARKET			
traded volume (GWh)	**481**	**411**	**28**
average price (lei/MWh)	115.86	162.37	181.85
% from internal consumption (%)	11.1	9.6	0.7
1.1. Sales on regulated contracts			
traded volume (GWh)	**459**	**393**	
average price (lei/MWh)	112.79	160.79	-
% from internal consumption (%)	10.6	9.2	
1.2. Sales on negotiated contracts[1)]			
traded volume (GWh)	**22**	**18**	**28**
average price (lei/MWh)	181.02	197.26	181.85
% from internal consumption (%)	0.5	0.4	0.7
2. EXPORT			
traded volume (GWh) [2)]	**420**	**557**	**260**
average price (lei/MWh)	184.68	175.55	209.01
% from internal consumption (%)	9.7	13.1	6.00
3. CENTRALIZED MARKETS OF BILATERAL CONTRACTS			
traded volume (GWh)	**4919**	**5480**	**5026**
average price (lei/MWh)	225.51	256.45	184.00
% from internal consumption	113.6	128.7	116.3
3.1. Extended auction mechanism CMBC-EA[3)]			
traded volume (GWh)	**1543**	**1582**	**1800**
average price (lei/MWh)	226.62	233.09	179.88
% from internal consumption	35.6	37.1	41.7
3.2. Continuous negotiation mechanism CMBC-CN [3)]			
traded volume (GWh)	**1289**	**1212**	**1061**
average price (lei/MWh)	223.25	365.36	190.71
% from internal consumption	29.8	28.5	24.6
3.3. CM-OTC mechanism [3)]			
traded volume (GWh)	**2086**	**2686**	**2165**
average price (lei/MWh)	226.08	221.05	184.13
% from internal consumption	48.2	63.1	50.1
4. CENTRALIZED MARKET FOR UNIVERSAL SERVICE - CMUS			
traded volume (GWh)	**30**	**29**	**123**
average price (lei/MWh)	257.50	257.50	178.18
% from internal consumption	0.7	0.7	2.8
5. DAY AHEAD MARKET			
traded volume (GWh)	**1639**	**1621**	**1842**
average price (lei/MWh) [4)]	193.88	183.74	221.75
% from internal consumption	37.8	38.1	42.6
6. INTRADAY MARKET			
traded volume (GWh)	**30**	**20**	**14.4**
average price (lei/MWh) [5)]	184.44	187.28	95.62
% from internal consumption	0.7	0.5	0.3
7. BALANCING MARKET			
traded volume (GWh)	**292**	**254**	**247**
% from internal consumption	6.7	6.0	5.7
upward volume (GWh)	**59**	**53**	**156**
average price for negative imbalance (lei/MWh)	561.92	540.68	326.31
downward volume (GWh)	**233**	**201**	**91**
average price for positive imbalance (lei/MWh)	5.08	4.42	61.56
INTERNAL CONSUMPTION (GWh) (*distribution and transmission losses included*)	**4331**	**4258**	**4320**

1) *Sales on negotiated contracts do not include supply contracts to final customers and export contracts, the latter being separately identified;*
2) *Volumes and prices' information corresponding to export contracts are those reported monthly by wholesale market participants and include the volumes exported by CNTEE Transelectrica as shipper agent for the coupled DAM; export volumes are verified with the DAMAS platform notifications, some differences being noticed in some cases;*
3) *The monthly data is presented as reported by the market participants monitored for the electricity delivered in the respective month. The information refers both to trades concluded previously on CMBC and CMBC-NC (according to ANRE Order 6/2011) and to trades concluded on CMBC-EA and CMBC-CN (according to ANRE Order 78/2014);*
4) *The average monthly price presented in the table is calculated as the average of the hourly closing prices and is published by Opcom SA; the average monthly price calculated as an weighted average of the hourly closing prices with the traded volumes was 193.87 lei/MWh in June 2019, and it was published by Opcom SA;*
5) *The average monthly price is calculated based on the monthly traded volumes and values, published by OPCOM SA.*

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

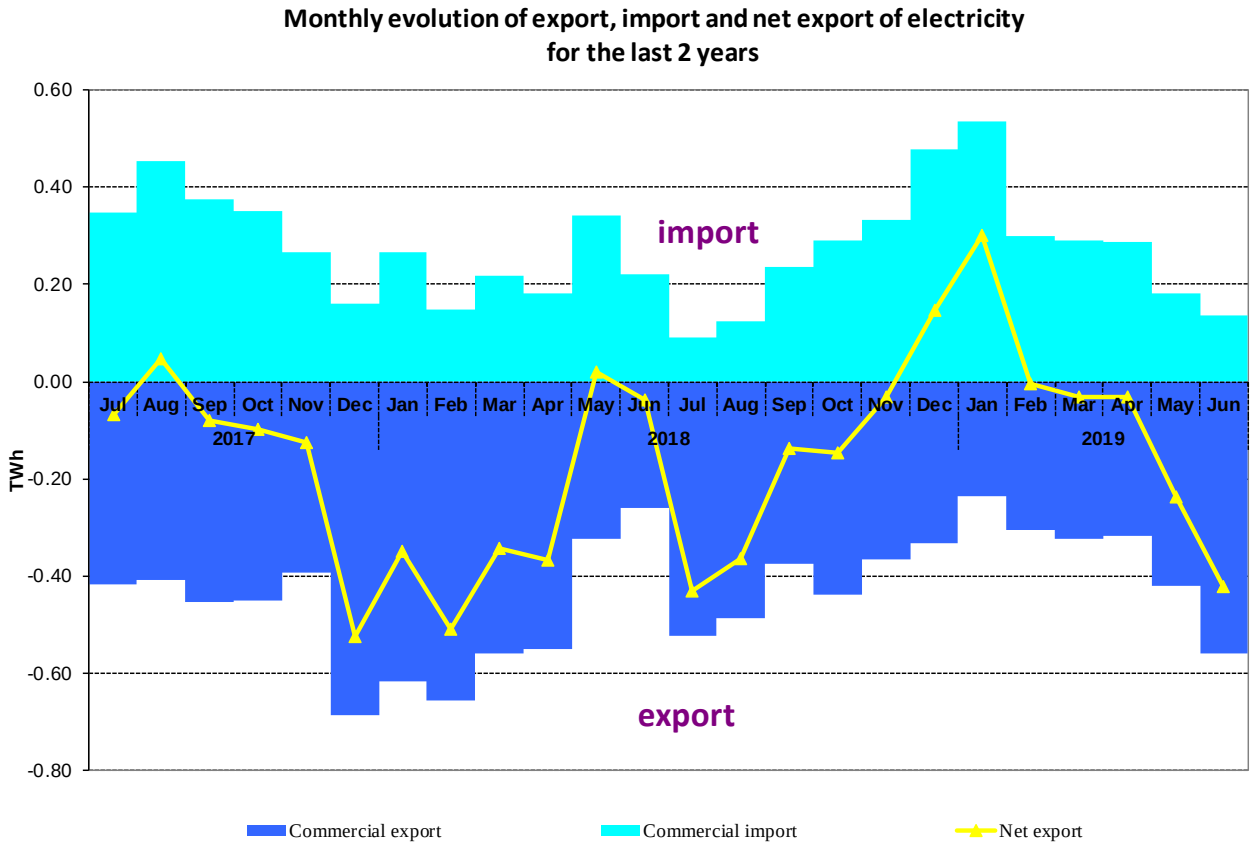
The following graph presents the evolution, starting with June 2014, of the relation between the volumes sold on each market and the estimated internal consumption.



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

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

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

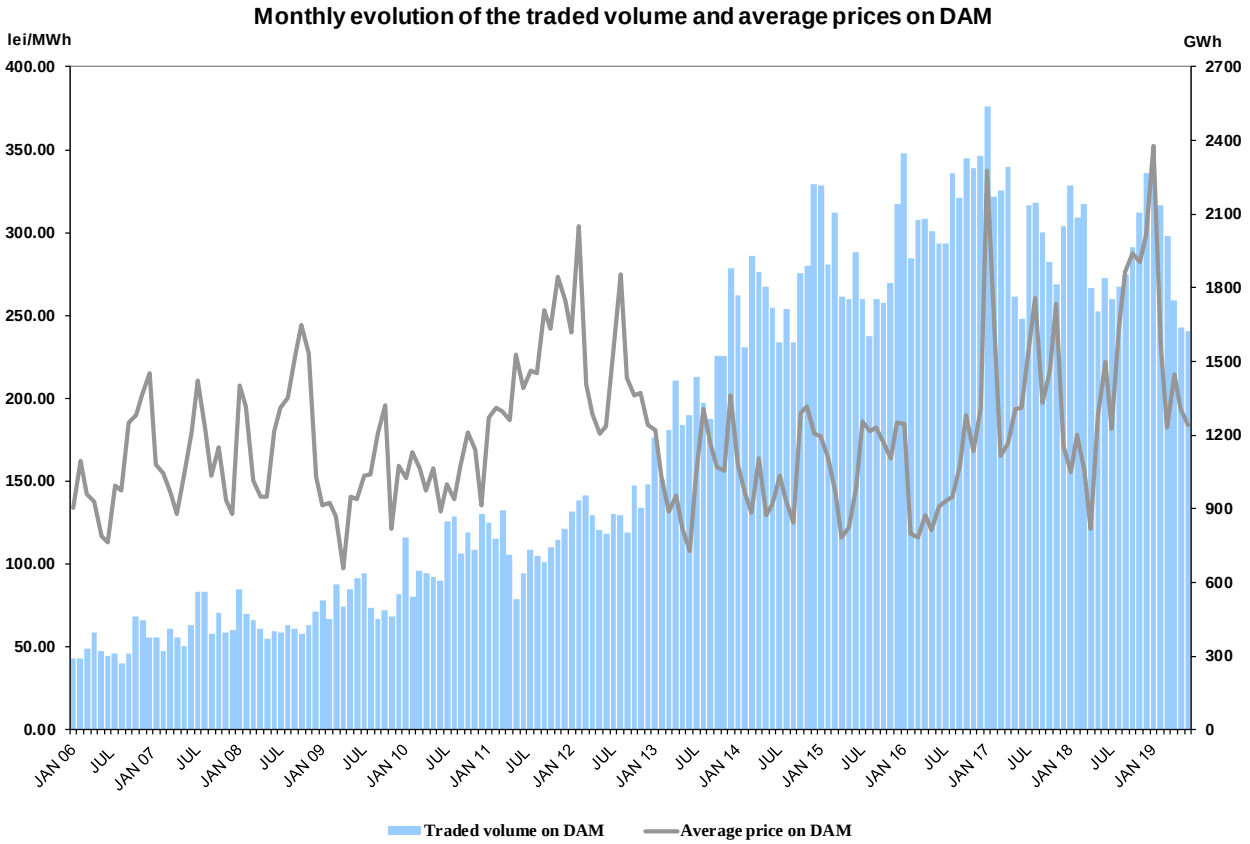


Source: Monthly reports of CNTEE Transelectrica SA – Electricity Market Monitoring Unit assessment

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

Import/Export Trades	May 2019	June 2019	June 2018
Export			
traded volume (GWh)	**420**	**557**	**260**
average price (lei/MWh)	184.68	175.55	209.01
% from internal consumption	9.7	13.1	6.0
of which, through coupled DAM			
traded volume (GWh)	**123**	**128**	**80**
average price (lei/MWh)	157.04	153.34	208.65
% from internal consumption	2.8	3.0	1.9
Import			
traded volume (GWh)	**182**	**135**	**223**
average price (lei/MWh)	224.64	228.58	227.48
% from internal consumption	4.2	3.2	5.2
of which, through coupled DAM			
traded volume (GWh)	**92**	**83**	**74**
average price (lei/MWh)	219.89	228.18	235.32
% from internal consumption	2.1	2.0	1.7

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



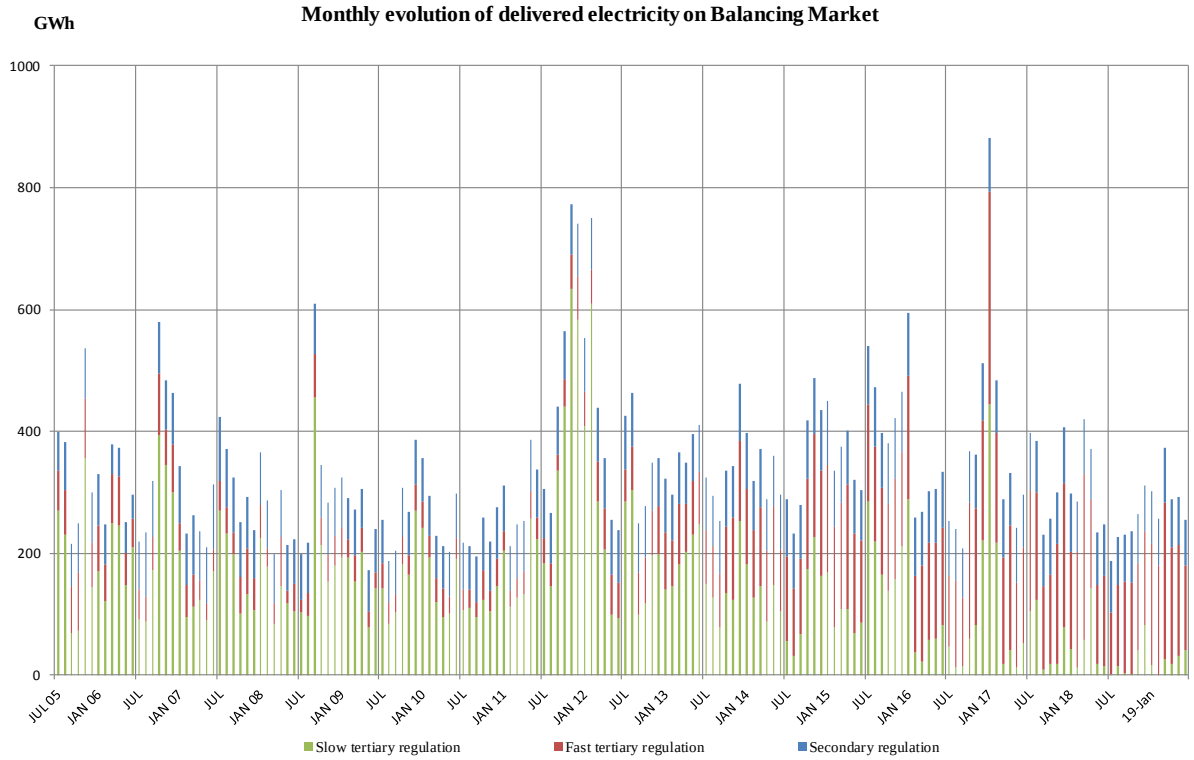
Source: Monthly reports of Opcom SA and CNTEE Transelectrica SA – Electricity Market Monitoring Unit assessment

Dispatch orders (accepted offers) received by generators determine the committed electricity on the Balancing Market. After settlement, the actual electricity delivered by generators on the Balancing Market is determined based on the measured (approved) values; the relation between the committed and delivered electricity in June 2019 is presented in the following table:

June 2019	Dispach order (GWh)	Delivered electricity (GWh)	Deviation (%)
Secondary regulation	**74**	**74**	
upward	29	29	
downward	45	45	
Fast tertiary regulation	**147**	**140**	**5**
upward	25	24	6
downward	122	116	5
Slow tertiary regulation	**41**	**40**	**0**
upward	0	0	0
downward	41	40	0
TOTAL	**263**	**254**	
upward	55	53	
downward	208	201	
INTERNAL CONSUMPTION		**4258**	
% share of traded volumes from internal consumption		***6.0%***	

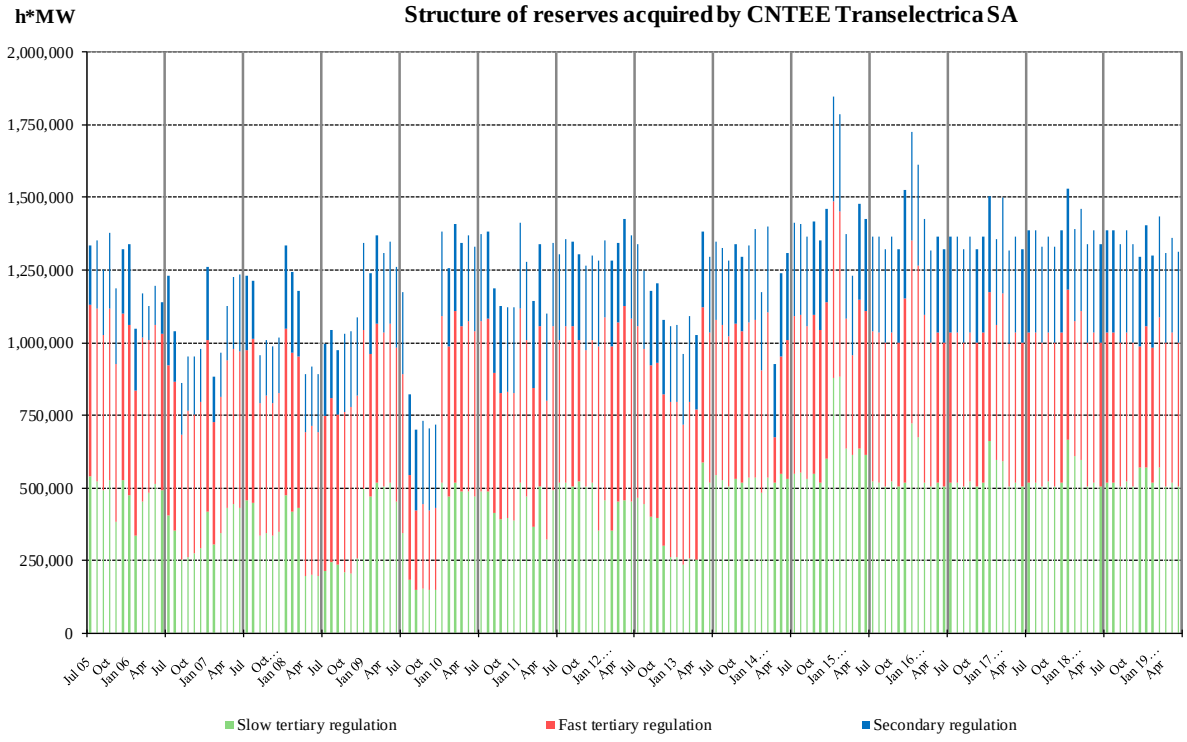
Source: Monthly reports of CNTEE Transelectrica SA – Electricity Market Monitoring Unit assessment

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



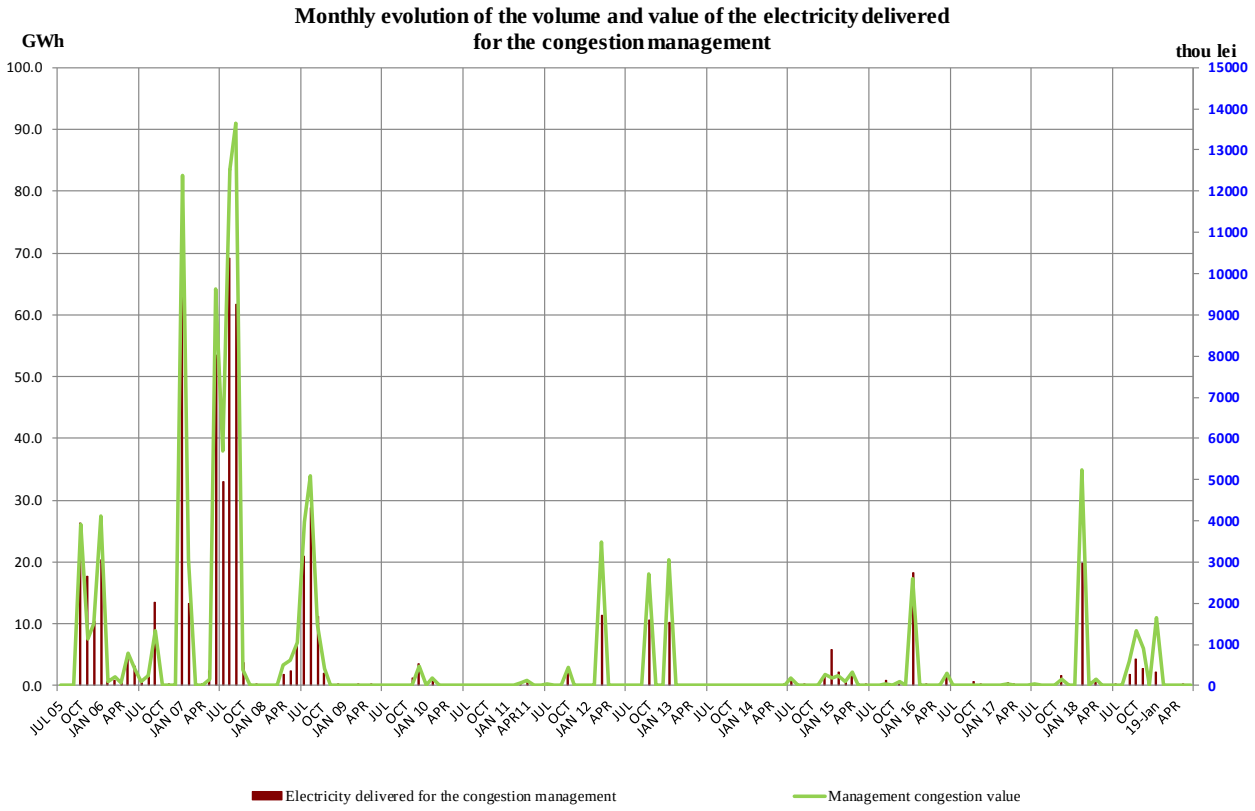
Source: Monthly reports of CNTEE Transelectrica SA – Electricity Market Monitoring Unit assessment

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



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

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



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

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

Producers

In June 2019, the structure of electricity sale obligations contracted before the delivery interval by the electricity generators with dispatchable units was the following:

-GWh-

Trade type	June 2018	June 2019
Thermal, hydro and nuclear producers, regulated contracts with last resort suppliers	-	392.77
Negotiated contracts, to suppliers	28.39	17.76
Contracts concluded on the Opcom centralized markets:	3263.59	3470.02
CMBC-EA	*1637.56*	*1492.31*
CMBC-CN	*765.91*	*805.36*
CM-OTC	*860.13*	*1172.36*
CMUS	73.32	7.20
DAM	1045.71	1072.86
ID	5.10	9.27
Supply contracts to final customers, from which:	418.14*	387.16
Households	*0.46*	*0.49*
Non-households	*417.68**	*386.67*
Total	**4834.26***	**5357.03**

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

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

Suppliers

In June 2019, on the electricity market there were active 94 undertakings having as the main activity that of electricty supply; out of these, 30 are suppliers that only operate on the wholesale electricity market (some of which have a license for electricity trading) and 61 are suppliers that are also active on the retail electricity market (including the last resort suppliers, that are active both on the regulated and the competitive segments of the REM).

Suppliers acting exclusively on WEM

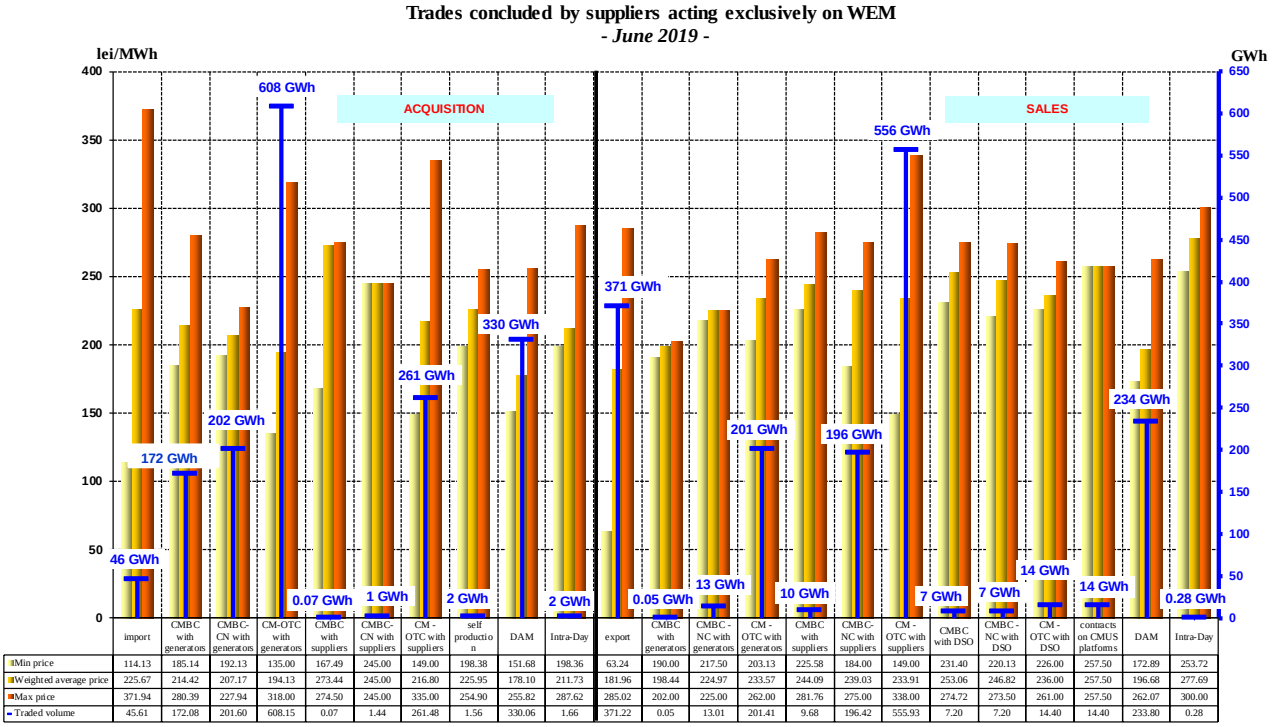
The following table illustrates the activity carried out by suppliers active only on WEM, presenting the structure by market segments/participants of the total acquisitions and sales made by these suppliers in June 2019, compared to the similar period in 2018:

-GWh-

Trades structure of suppliers acting exclusively on WEM	**June 2018**	**June 2019**
Buy		
Import	143.81	45.61
Negotiated trades with producers	8.20	0.00
Contracts concluded on Opcom centralized markets, out of which:	978.09	1244.82
- *on CMBC-EA with producers*	*83.28*	*172.08*
- *on CMBC-CN with producers*	*192.25*	*201.60*
- *on CM-OTC with producers*	*320.77*	*608.15*
- *on CMBC-EA with other suppliers*	*0.00*	*0.07*
- *on CMBC-CN with other suppliers*	*54.00*	*1.44*
- *on CM-OTC with other suppliers*	*327.79*	*261.48*
production from own sources	1.75	1.56
DAM	283.21	330.06
ID	0.62	1.66
Sell		
Export	161.42	371.22
Contracts concluded on Opcom centralized markets, out of which:	739.22	1005.29
- *on CMBC-EA with producers*	*0.01*	*0.05*
- *on CMBC-CN with producers*	*0.07*	*13.01*
- *on CM-OTC with producers*	*0.19*	*201.41*
- *on CMBC-EA with other suppliers*	*2.88*	*9.68*
- *on CMBC-CN with other suppliers*	*88.70*	*196.42*
- *on CM-OTC with other suppliers*	*629.38*	*555.93*
- *on CMBC-EA with DO*	*0.00*	*7.20*
- *on CMBC-CN with DO*	*7.20*	*7.20*
- *on CM-OTC with DO*	*10.80*	*14.40*
CMUS with last resort suppliers	19.20	14.40
DAM	494.71	233.80
ID	0.65	0.28

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

The following graph presents the lowest, average and highest prices by categories of trades concluded by the suppliers acting exclusively on WEM (traders), in June 2019.



	import	CMBC with generators	CMBC-CN with generators	CM-OTC with generators	CMBC with suppliers	CMBC-CN with suppliers	CM - OTC with suppliers	self production	DAM	Intra-Day	export	CMBC with generators	CMBC - NC with generators	CM - OTC with generators	CMBC with suppliers	CMBC-NC with suppliers	CM - OTC with suppliers	CMBC with DSO	CMBC - NC with DSO	CM - OTC with DSO	contracts on CMUS platforms	DAM	Intra-Day
Min price	114.13	185.14	192.13	135.00	167.49	245.00	149.00	198.38	151.68	198.36	63.24	190.00	217.50	203.13	225.58	184.00	149.00	231.40	220.13	226.00	257.50	172.89	253.72
Weighted average price	225.67	214.42	207.17	194.13	273.44	245.00	216.80	225.95	178.10	211.73	181.96	198.44	224.97	233.57	244.09	239.03	233.91	253.06	246.82	236.00	257.50	196.68	277.69
Max price	371.94	280.39	227.94	318.00	274.50	245.00	335.00	254.90	255.82	287.62	285.02	202.00	225.00	262.00	281.76	275.00	338.00	274.72	273.50	261.00	257.50	262.07	300.00
Traded volume	45.61	172.08	201.60	608.15	0.07	1.44	261.48	1.56	330.06	1.66	371.22	0.05	13.01	201.41	9.68	196.42	555.93	7.20	7.20	14.40	14.40	233.80	0.28

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

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

The table below provides aggregated data regarding the structure by market segments/REM participants of total purchases and sales made by these market participants in June 2019 compared with the similar period of 2018:

-GWh -

Trades structure of suppliers acting on REM (suppliers of last resort not included)	**June 2018**	**June 2019**
Buy		
Import	4.40	6.61
Negotiated trades with producers	23.59	22.78
Trades concluded on Opcom centralized markets, out of which:	2010.29	1977.64
- *on CMBC-EA with* producers	*936.12***	*634.59*
- *on CMBC-CN with* producers	*288.30*	*399.79*
- *on CM-OTC with* producers	*163.01*	*348.18*
- *on CMBC-EA with other suppliers*	*90.73****	*14.68*
- *on CMBC-CN with other suppliers*	*70.14*	*172.39*
- *on CM-OTC with other suppliers*	*461.98*	*408.02*
production from own sources	*29.10*	47.69
Negociated trades with non-dispatchable producers (others than under Law 220/2008)*	9.50	7.21
Negociated trades with non-dispatchable producers (amendments and additions to Law 220/2008)**	29.18***	31.71
Trades with produsumers	-	0.01
DAM	502.36***	471.28
ID	11.20	16.28

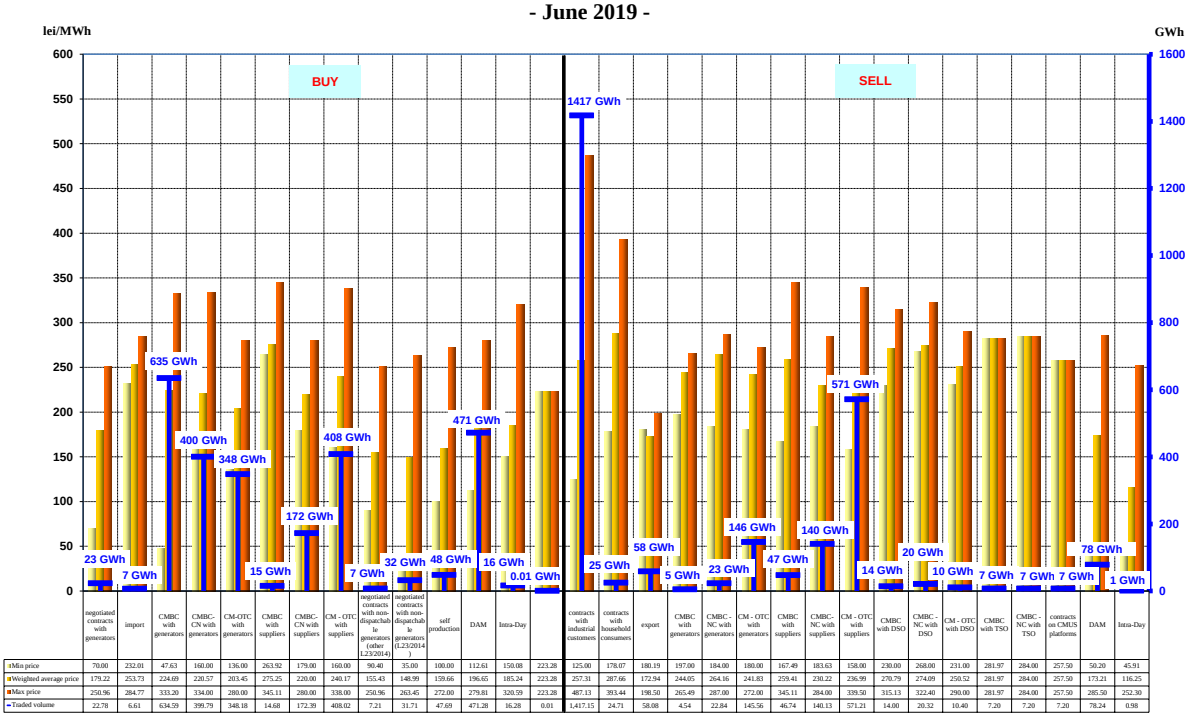
Trades' structure of suppliers acting on REM (not including suppliers of last resort)	June 2018	June 2019
Sell		
Export	18.16	58.08
Trades concluded on Opcom centralized markets, out of which:	985.65***	990.12
- *on CMBC-EA with producers*	*8.17*	*4.54*
- *on CMBC-NC with producers*	*15.85*	*22.84*
- *on CM-OTC with producers*	*22.77*	*145.56*
- *on CMBC-EA with other suppliers*	*114.48****	*46.74*
- *on CMBC-CN with other suppliers*	*173.59*	*140.13*
- *on CM-OTC with other suppliers*	*602.36*	*571.21*
- *on CMBC-EA with DO*	*17.69*	*14.00*
- *on CMBC-CN with DO*	*9.36*	*20.32*
- *on CMBC-OTC with DO*	*0.00*	*10.40*
- *on CMBC-EA with TSO*	*20.66*	*7.20*
- *on CMBC-CN with TSO*	*0.72*	*7.20*
CMUS with last resort suppliers	30.03	7.20
DAM	96.95***	78.24
ID	1.88	0.98
Households	22.44	24.71
Non-households	1489.55***	1417.15

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

Note: **negociated trades with non-dispatchable producers that do **not** fall under the provisions of Law no. 220/2008, with subsequent modifications and additions.*
*** negociated trades with non-dispatchable producers that fall under the provisions of Law no. 220/2008, with subsequent modifications and additions.*
****The differences with June 2018 Electricity Market Monitoring Report are determined by the corrections reported by the market participants that were included in the current report.*

The breakdown by sources type/destination of the volumes traded, the average and extreme prices (highest and lowest) for June 2019, for suppliers active on the REM and WEM are shown in the following graph:

Trades concluded by suppliers active on WEM and REM
suppliers of last resort not included
- June 2019 -



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

Suppliers of last resort

Trades' structure on the WEM of suppliers of last resort (made before the delivery interval) to supply final clients under the regulated, US and last resort regime and inactive clients is shown in the table below for June 2019, compared with the similar period of 2018:

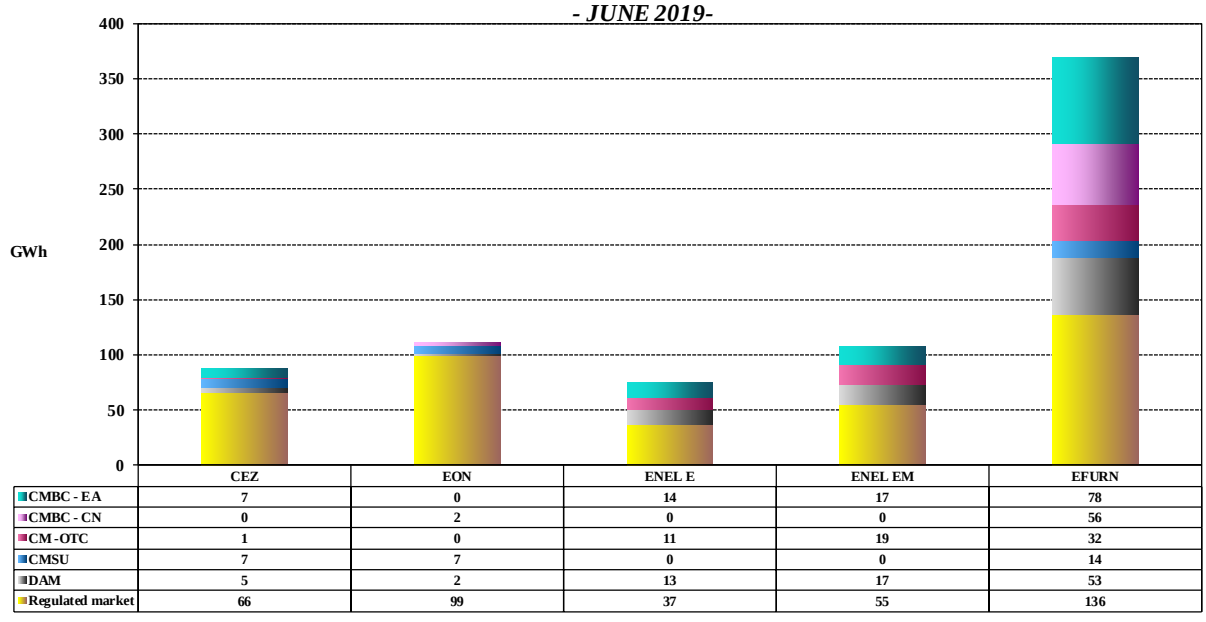
- GWh -

Structure of trades concluded by suppliers of last resort to supply final clients (regulated, Universal Service and last resort regime and inactive clients)	**June 2018**	**June 2019**
Regulated contracts with producers		392.77
Negociated trades with non-dispatchable producers (changes and additions to Law 220/2008)*	0.03	0.01
Trades concluded on Opcom centralized markets, out of which:	472.19	237.96
- *trades on CMBC-EA with producers*	*127.71*	*108.70*
- *trades on CMBC-CN with producers*	*52.49*	*7.38*
- *trades on CM-OTC with producers*	*46.78*	*14.52*
- *trades on CMBC-EA with other suppliers*	*14.58*	*7.27*
- *trades on CMBC-CN with other suppliers*	*60.92*	*51.04*
- *trades on CM-OTC with other suppliers*	*169.72*	*49.05*
Trades with prosumers	-	0.03
Trades on CMUS:	122.55	28.80
- *trades on CMUS with producers*	*73.32*	*7.20*
- *trades on CMUS with suppliers*	*49.23*	*21.60*
Trades concluded on DAM:	157.27	51.31
- *buy*	*176.03*	*91.15*
- *sell*	*18.76*	*39.84*
Trades concluded on ID:	0.07	0.0007
- *buy*	*0.07*	*0.0007*
- *sell*	*0.00*	*0.00*

Note: **negotiated trades with non-dispatchable producers that fall under the provisions of Law no. 220/2008, with subsequent amendments and additions.*

The structure of the electricity bought by the suppliers of last resort for the final consumers supplied under regulated, US and last resort regime and for inactive clients for June 2019 is presented in the following graph:

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



	CEZ	EON	ENEL E	ENEL EM	EFURN
CMBC - EA	7	0	14	17	78
CMBC - CN	0	2	0	0	56
CM -OTC	1	0	11	19	32
CMSU	7	7	0	0	14
DAM	5	2	13	17	53
Regulated market	66	99	37	55	136

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

In accordance with the provisions of the *Regulation for competitive selection in order to designate suppliers of last resort*, approved by ANRE Order no. 26/2018 as amended by ANRE Order no. 17/2019, ANRE has designated, as obligated suppliers of last resort for each network area, until 30 June 2022, E.ON Energie Romania SA, Enel Energie SA, Enel Energie Muntenia SA, Electrica Furnizare SA and CEZ Vanzare SA. Also, ANRE has designated as optional suppliers of last resort Electrica Furnizare, CEZ Vanzare SA, E.ON Energie Romania SA, Enel Energie SA, Engie Romania SA, Getica 95 Com SRL, SPEEH Hidroelectrica SA, MET Romania Energy SA, Restart Energy One SRL and Tinmar Energy SRL, for the period between 1 March 2019 and 28 February 2020, for different network areas. Also, Enel Energie Muntenia SA held, since 1 July 2018, the status of optional supplier of last resort for the areas of Moldova, Oltenia, North of Muntenia, North of Transylvania and South of Transylvania.

According to the *Methodology for setting the regulated tariffs and the prices applied by suppliers of last resort to final clients* (approved by ANRE Order no. 11/2019), during 1 March 2019 – 28 February 2022, the electricity consumption of household clients that have concluded regulated energy supply contracts with suppliers of last resort is to be paid at regulated tariffs on voltage levels approved by ANRE Orders no. 27, 28, 29, 30 and 31 of 2019 for each network area corresponding to obligated suppliers of last resort, respectively regulated tariffs on voltage levels approved by ANRE by Order no. 32/2019 for all network areas in the case of optional suppliers of last resort.

Therefore, starting with 1 March 2019, for every network area and voltage level, suppliers of last resort apply in the household and non-household final clients bills from their portfolio, the following types of approved tariffs/ endorsed prices by ANRE, to which are added the regulated tariffs for the transmission service, ancillary services and distribution service:

- *obligated suppliers of last resort – regulated tariffs* to household clients, *Universal Service price* to non-household final clients that benefit from Universal Service, *inactive clients price* to non-household final clients that did not use their eligibility right and do not fulfill the conditions or did not request to be supplied under the Universal Service regime and the *last resort price* to non-household final clients taken over because of not having secured the supply from any other source.

  Universal Service price and *inactive clients price* are determined by adding the electricity acquisition components and the supply component for that client category to which is added the adjustment component related to the Universal Service price or inactive clients price. *The last resort price* is determined monthly, starting from the weighted average price on DAM for the month for which it is calculated, plus the supply component.

- *optional suppliers – regulated tariffs* to household clients and *Universal Service price* to non-household final clients that benefit from Universal Service (price formula determined by applying a discount on the Universal Service price of the obligated supplier of last resort for that network area).

Based on the provisions of the ANRE Order no. 10/2019, in order to ensure the consumption of household clients at regulated tariffs, suppliers of last resort buy the necessary electricity on the basis of regulated sale and purchase contracts concluded with the electricity producers for which ANRE has established (through decisions, for the period 1 March 2019 – 31 December 2019) obligations to sell fixed quantities at a regulated price. Suppliers of last resort ensure household clients consumption needs also through acquisitions from prosumers, through contracts concluded on the centralized markets, DAM, ID and BM.

ANRE Order no. 27/2018 for the approval of the *Regulation for organizing and conducting the auctions on the centralized market for the universal service* amended the terms of participation of the suppliers of last resort to CMUS for the purchase of electricity intended to cover the consumption of

final clients supplied under a regulated and Universal Service regime, the participation in the auction sessions becoming, thus, voluntary.

The structure of electricity trades of suppliers of last resort on the WEM made before the delivery interval for Universal Service/regulated supply is presented in the following table for June 2019, compared with the similar period of 2018:

-GWh-

Trades structure of suppliers of last resort for Universal Service/regulated supply	**June 2018**		**June 2019**	
	Quantity [GWh]	**Average price [lei/MWh]**	**Quantity [GWh]**	**Average price [lei/MWh]**
Regulated contracts with producers	-	-	392.77	160.79
Trades on Opcom centralized markets:	459.05	198.80	186.80	*256.39*
- *trades on CMBC-EA with producers*	*127.40*	*200.58*	*88.00*	*246.81*
- *trades on CMBC-CN with producers*	*52.25*	*214.67*	*7.20*	*220.63*
- *trades on CM-OTC with producers*	*43.00*	*173.60*	*7.20*	*259.00*
- *trades on CMBC-EA with other suppliers*	*14.39*	*195.63*	*7.20*	*231.48*
- *trades on CMBC-CN with other suppliers*	*57.29*	*201.46*	*46.80*	*271.57*
- *trades on CM-OTC with other suppliers*	*164.73*	*198.33*	*30.40*	*274.49*
Trades with prosumers	0.00	-	0.02	223.30
Trades on CMUS, out of which:	122.55	178.18	28.80	257.50
- with producers	*73.32*	*170.32*	*7.20*	*257.50*
- with other suppliers	*49.23*	*189.88*	*21.60*	*257.50*
Trades on DAM:	129.80	-	*39.60*	246.63
- buy	*148.49*	*248.59*	*77.25*	*212.78*
- sell	*18.69*	*174.31*	*37.64*	*177.17*
Trades concluded on ID:	0.05	-	*0.00*	-
- *buy*	*0.05*	*258.28*	*0.00*	*0.00*
- *sell*	*0.00*	*0.00*	*0.00*	*0.00*
TOTAL	**711.44**	**206.29**	**648.00**	**197.89**

Note: **negotiated trades with non-dispatchable producers that fall under the provisions of Law no. 220/2008, with subsequent amendments and additions.*

WEM trades structure of suppliers of last resort made before the delivery interval, for supplying electricity to inactive clients in June 2019 is shown in the following table:

- GWh -

Trades structure of suppliers of last resort to supply inactive clients	**June 2019**	
	Quantity [GWh]	**Average price [lei/MWh]**
Negociated contracts with non-dispatchable producers (changes and additions to Law 220/2008)*	0.01	72.99
Trades on centralized contracts markets:	49.38	246.52
- *on CMBC-EA with producers*	*20.70*	*230.28*
- *on CMBC-CN with producers*	*0.18*	*237.42*
- *on CM-OTC with producers*	*6.88*	*261.01*
- *on CMBC-EA with other suppliers*	*0.07*	*306.19*
- *on CMBC-CN with other suppliers*	*4.24*	*268.62*
- *on CM-OTC with other suppliers*	*17.32*	*254.61*
Trades with prosumers	0.0031	223.36
Trades on DAM, of which:	*10.67*	247.27
- buy	*12.85*	*226.88*
- *sell*	*2.18*	*127.11*
Trades on ID, of which:	*0.0007*	*283.69*
- buy	*0.0007*	*282.57*
- *sell*	*0.00*	*0.00*
TOTAL	**60.07**	**246.62**

Note: **negotiated trades with non-dispatchable producers that fall under the provisions of Law no. 220/2008, with subsequent amendments and additions.*

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

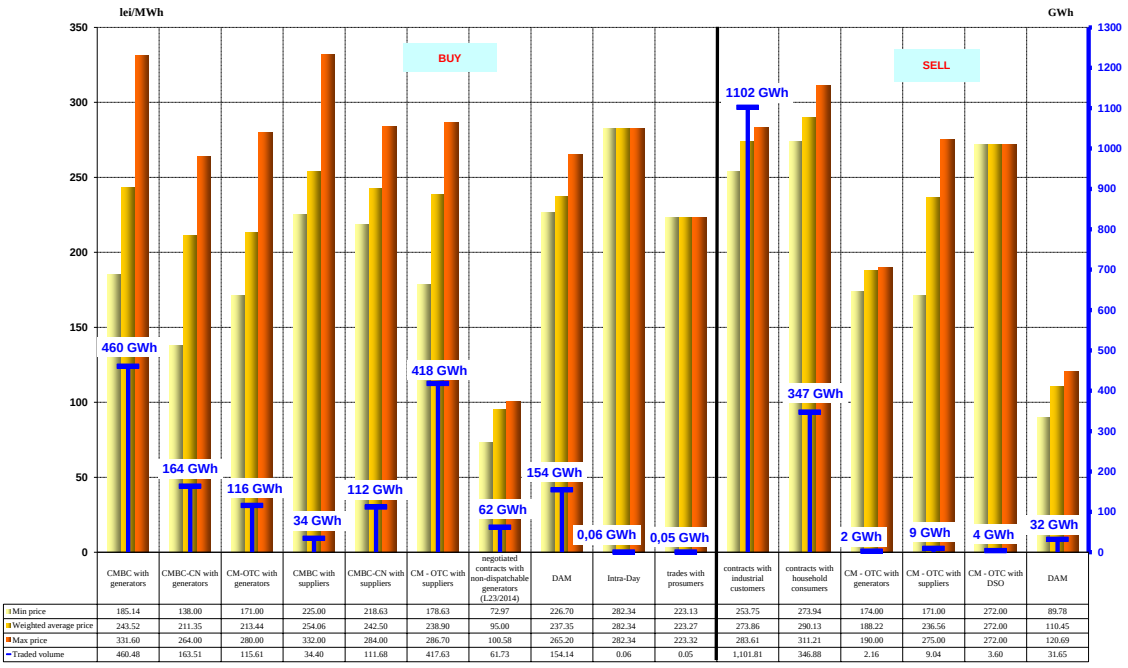
-GWh-

Structure of trades made by suppliers of last resort for the competitive segment of REM	**June 2018**	**June 2019**
Buy		
Trades on centralized contracts markets, of which:	1163.29	1303.31
- *on CMBC-EA with producers*	*244.19*	*460.48*
- *on CMBC-CN with producers*	*185.68*	*163.51*
- *on CM-OTC with producers*	*333.01*	*115.61*
- *on CMBC-EA with other suppliers*	*12.06*	*34.40*
- *on CMBC-CN with other suppliers*	*77.22*	*111.68*
- *on CM-OTC with other suppliers*	*311.13*	*417.62*
Negociated trades with non-dispatchable producers (amendments and additions to Law 220/2008)*	39.59	*61.73*
Trades with prosumers	-	0.05
Trades on DAM	203.90	154.14
Trades on ID	0.11	0.06
Sell		
Trades on centralized contracts markets:	38.88	14.80
- *on CM-OTC with other producers*	*0.00*	*2.16*
- *on CM-OTC with other suppliers*	*38.88*	*9.04*
- *on CMBC-OTC with DO*	*0.00*	*3.60*
Trades on DAM	20.54	31.65
Trades on ID	0.00	0.00
Households	191.49	346.88
Non-households	1120.66	1101.81

Note: **negotiated trades with non-dispatchable producers that fall under the provisions of Law no. 220/2008, with subsequent amendments and additions.*

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

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



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

Main distribution operators

The following table shows the electricity acquisition structure of the main distribution operators made before the delivery interval to cover the distribution networks losses, for June 2019 compared with the similar previous period:

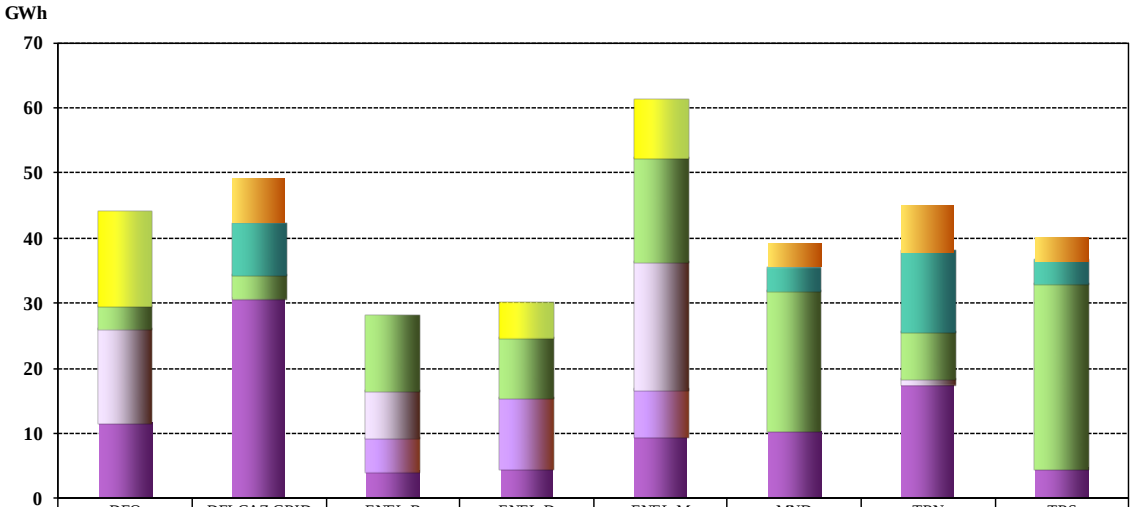
- GWh -

Structure of trades	June 2018	June 2019
Trades on centralized contracts markets:	296.07	243.33
- *CMBC-EA with producers*	*222.23*	*101.03*
- *CMBC-CN with producers*	*28.80*	*42.16*
- *CM-OTC with producers*	*0.00*	*23.04*
- *CMBC-EA with suppliers*	*17.69*	*21.20*
- *CMBC-CN with suppliers*	*16.56*	*27.52*
- *CM-OTC with suppliers*	*10.80*	*28.39*
Trades on ID	42.16	91.62
- *buy*	*57.55*	*92.82*
- *sell*	*15.39*	*1.20*
Trades on DAM:	0.02	0.10
- *buy*	*0.02*	*0.10*
- *sell*	*0.00*	*0.00*

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

Electricity acquisition structure of the main distribution operators in June 2019 is presented in the following graph:

Structure of electricity acquisitions of distribution operators to cover distribution network losses
- JUNE 2019 -



	DEO	DELGAZ GRID	ENEL-B	ENEL-D	ENEL-M	MND	TRN	TRS
CMBC-EA from suppliers	0	7	0	0	0	4	7	4
CMBC-NC from suppliers	0	8	0	0	0	4	12	4
CM-OTC from suppliers	14	0	0	5	9	0	0	0
CMBC-EA from producers	4	4	12	9	16	22	7	28
CMBC-NC from producers	14	0	7	0	20	0	1	0
CM-OTC from producers	0	0	5	11	7	0	0	0
DAM	12	31	4	5	10	10	17	5
ID	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00

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

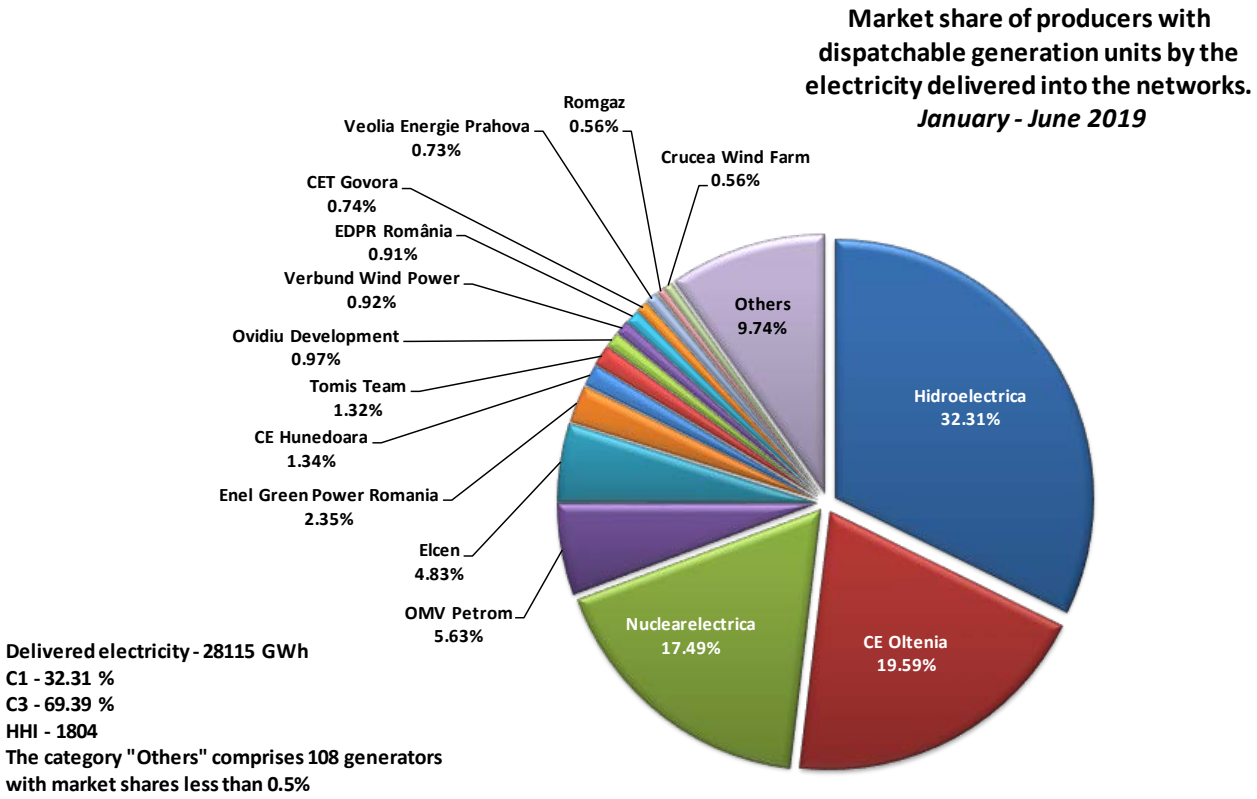
6. Concentration indicators for the wholesale electricity market and its components

Concentration indicators and market shares of electricity producers

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

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

Concentration indicators - June 2019 -	**C1 (%)**	**C3 (%)**	**HHI**
Value	**48.34**	**83.06**	**2955**



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

A component of the WEM on which direct competition between producers is manifested is the Balancing Market (BM). The values of concentration indicators on this market for June 2019 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:

Structure/concentration indicators of BM - JUNE 2019 -	Regulation					
	Secondary		Fast tertiary		Slow tertiary	
	upward	downward	upward	downward	upward	downward
C1 - % -	74	72	72	56	0	99.9
C3 - % -	100	100	96	98	0	100
HHI	6090	5928	5647	4782	0	9984

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

Under EGO no. 26/2018 on the adoption of certain measures for the safety and security of electricity supply of the NPS, it was approved ANRE President Decision no. 2047/2018 regarding the acquisition at a regulated price for the period between 1 January – 31 December 2019 from the producer CE Hunedoara SA of a quantity of ancillary services representing slow tertiary reserve for a capacity of 400 MW. Also, CNTEE Transelectrica SA organized auctions to buy reserves on all types of regulation.

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

Concentration indicators on Ancillary Services Market - June 2019 -		Secondary reserve	Fast tertiary reserve	Slow tertiary reserve
regulated component	contracted quantity (h*MW)	-	-	288000
	C1 (%)	-	-	100.0
	C3 (%)	-	-	100.0
competitive component	contracted quantity (h*MW)	312210	498000	216000
	C1 (%)	72.3	85.6	58.0
	C3 (%)	100.0	95.8	100.0
	HHI	5997	7398	5127

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

Concentration Indicators for the Day Ahead Market

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

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

Concentration indicators on DAM - June 2019 -	C1 (%)	C3 (%)	HHI
Selling	27.85	43.81	1010
Buying	8.11	22.95	375

Source: Monthly reports of Opcom SA

7. Prices evolution on wholesale electricity market

Starting with 19 November 2014, the Romanian DAM is coupled with the spot markets from Hungary, Slovakia and the Czech Republic based on the price coupling mechanism, known as 4M MC. This coordinated corelation mechanism uses an unique pan-European method for price coupling of regions (called *Price Coupling of Regions* - PCR) in order to fulfil the harmonization of national European markets and create the internal European electricity market. The coupled functioning is based on the coupling algorithm recommended by ACER (Euphemia) and its goal is maximizing the social welfare of the entire area of the coupled markets.

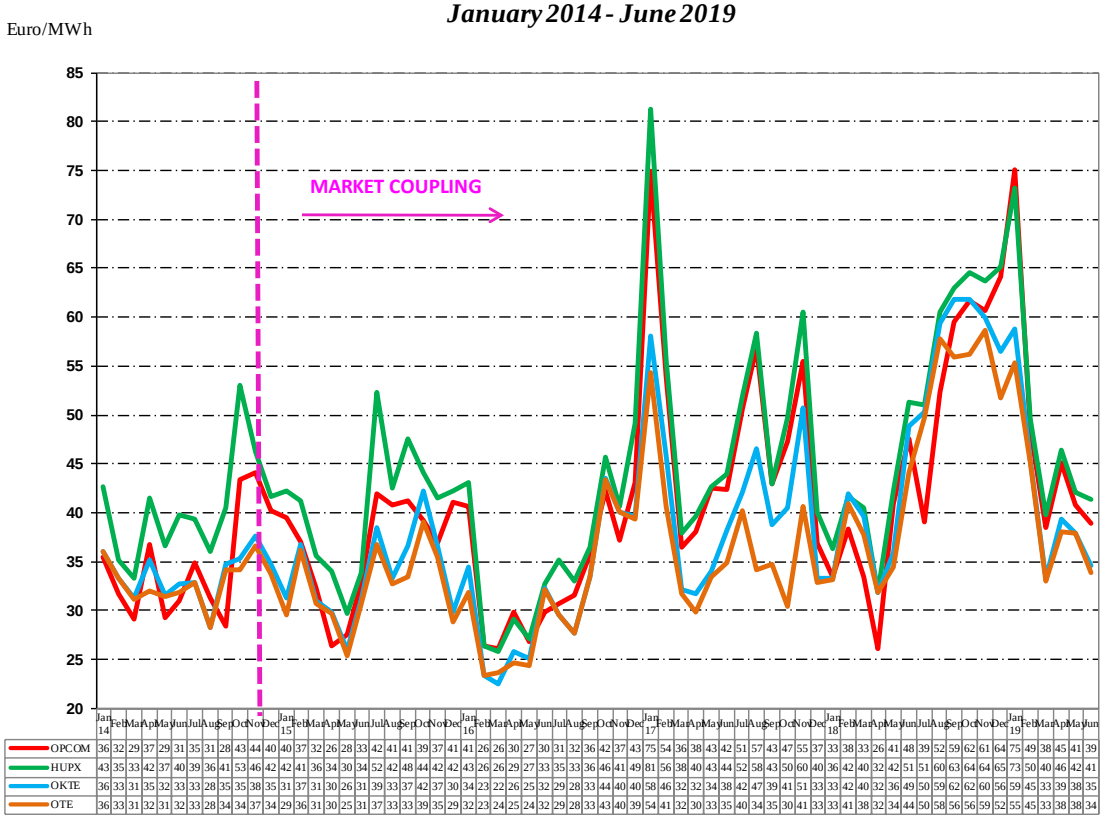
The coupling mechanism is developed through the coupling operators OTE-Czech Republic, EPEX Spot (operating as services supplier for OKTE-Slovakia and HUPX-Hungary) and, from 17 January 2017, OPCOM-Romania (PCR member from 1 January 2016). After succesfully implementing the changes and tests performed, OPCOM operates in its own name the coupling solution implemented in the 4M MC operational mechanism, all processes being performed under the security conditions of the coupled functioning of the day-ahead markets. Coupling operators are acting as *Coordinators* on a monthly rotation basis.
According to EU legislation, coordinated cross-border capacity allocation is under the governance of the TSOs from the 4 countries and the allocation model used is that of implicit allocation on DAM of the available interconnection capacity.

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

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

Particularly, for the Hungarian border, if 80% of the lowest value of the ATC calculated monthly for sub-periods is lower than 80 MW, interconnection capacity for monthly allocation will be 80% from the ATC calculated for each sub-period, to which is added the allocated capacity at the yearly auction returned to TSO.
The next graph presents the monthly average spot prices of the 4 markets involved in the 4M MC coupling mechanism starting with 1 January 2014, before and after the onset of coupled operation.

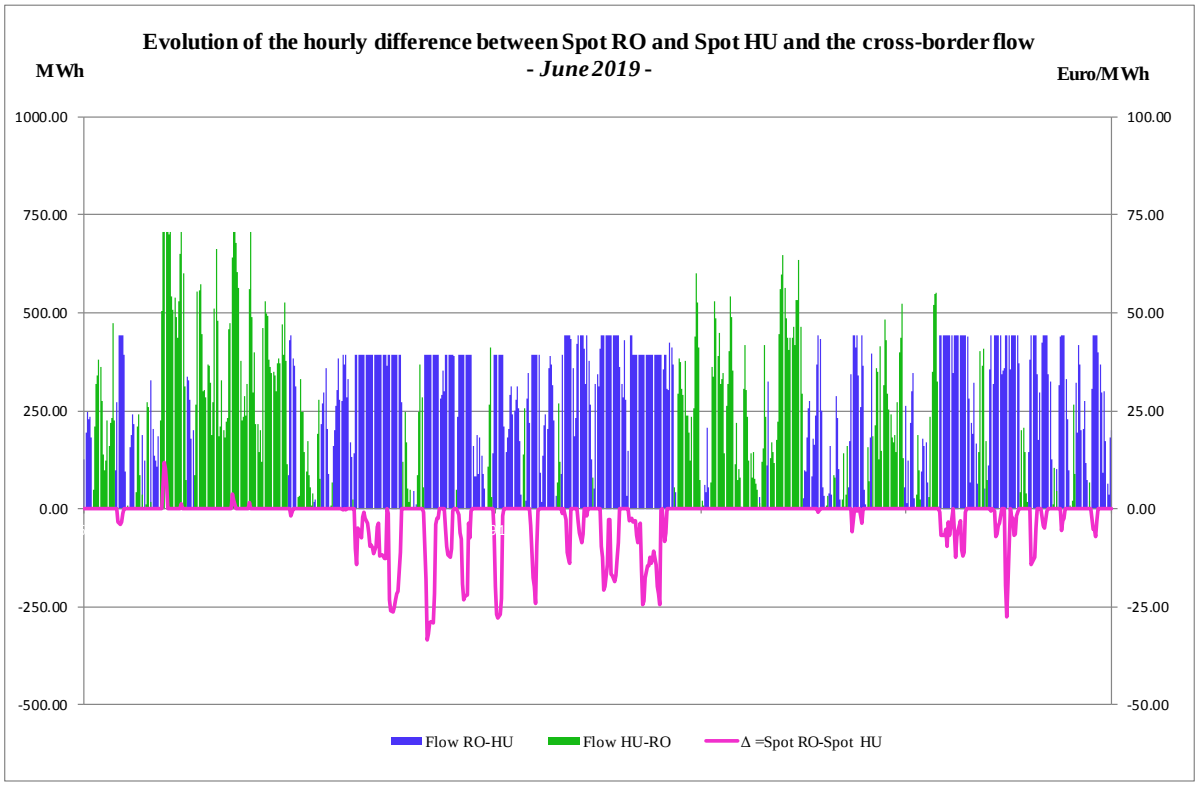
Hourly average spot prices on the 4 spot markets that are part of the market coupling project
January 2014 - June 2019



	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	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 19	Feb	Mar	Apr	May	Jun
OPCOM	36	32	29	37	29	31	35	31	28	43	44	40	40	37	32	26	28	33	42	41	41	39	37	41	41	26	26	30	27	30	31	32	36	42	37	43	75	54	36	38	43	42	51	57	43	47	55	37	33	38	33	26	41	48	39	52	59	62	61	64	75	49	38	45	41	39
HUPX	43	35	33	42	37	40	39	36	41	53	46	42	42	41	36	34	30	34	52	42	48	44	42	42	43	26	26	29	27	33	35	33	36	46	41	49	81	56	38	40	43	44	52	58	43	50	60	40	36	42	40	32	42	51	51	60	63	64	64	65	73	50	40	46	42	41
OKTE	36	33	31	35	32	33	28	35	35	38	35	31	37	31	30	26	31	39	33	37	42	37	30	34	23	22	26	25	32	29	28	33	44	40	40	58	46	32	32	34	38	42	47	39	41	51	33	33	42	40	32	36	49	50	59	62	62	60	56	59	45	33	39	38	35
OTE	36	33	31	32	31	32	33	28	34	34	37	34	29	36	31	30	25	31	37	33	33	39	35	29	32	23	24	25	24	32	29	28	33	43	40	39	54	41	32	30	33	35	40	34	35	30	41	33	33	41	38	32	34	44	50	58	56	56	59	52	55	45	33	38	38	34

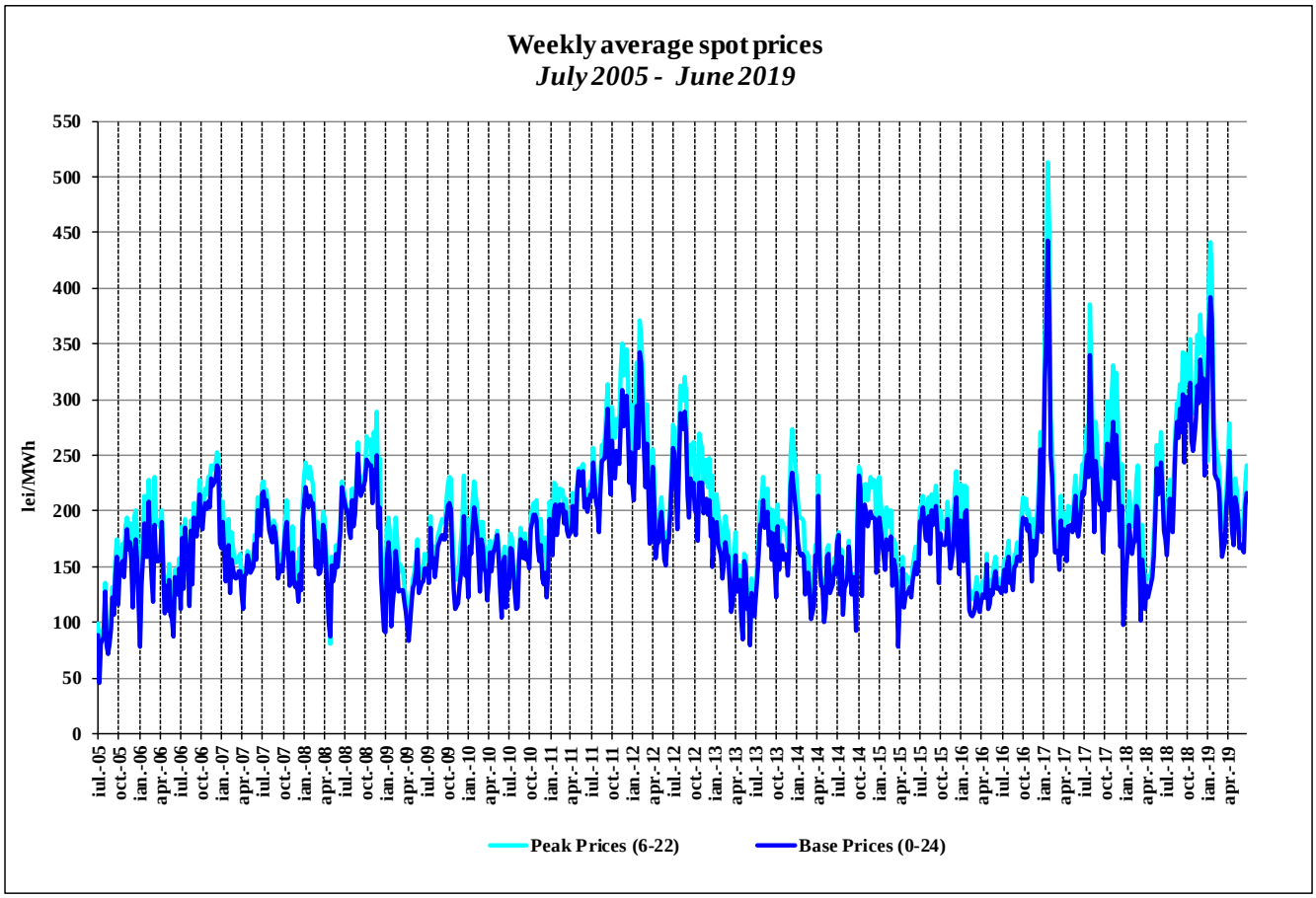
Source: Monthly reports of Opcom SA – Electricity Market Monitoring Unit assessment

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



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

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



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

On Romania's borders with Hungary, Bulgaria and Serbia, interconnection capacity allocation is done through market mechanisms, bilaterally coordinated on both directions, for 100% of the allocation capacity, through long and short term auctions.

On the border with Serbia, the allocation is made through auctions organized by CNTEE Transelectrica SA for annual, monthly and intraday allocation, and through daily auctions organized by the EMS (Serbian TSO), in accordance with the agreements signed between the two TSOs.

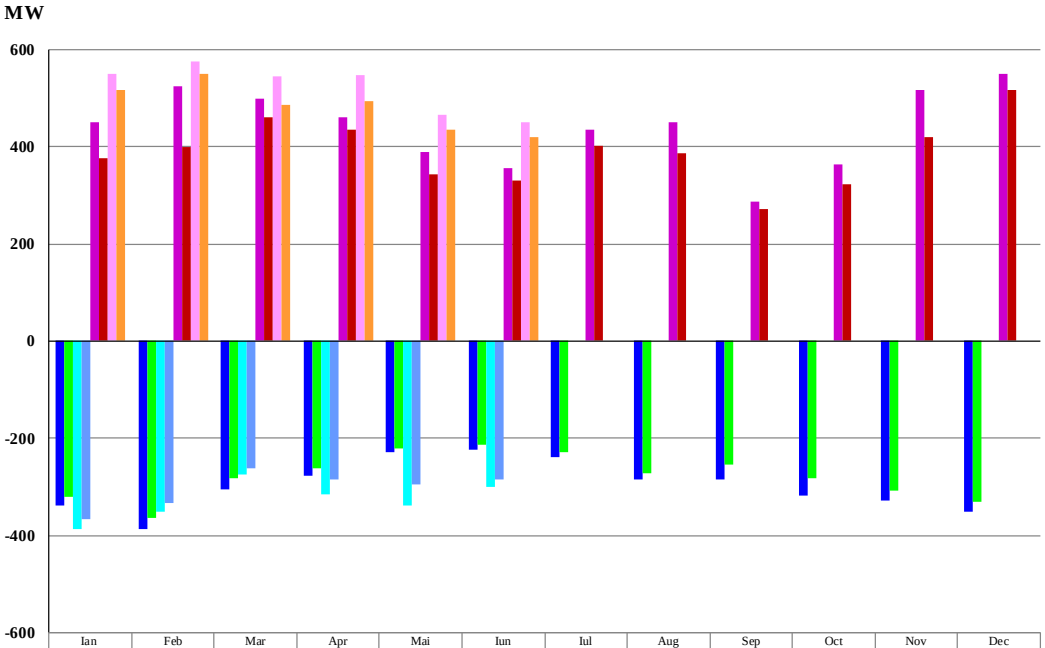
On the border with Ukraine the allocation is made by CNTEE Transelectrica SA through auctions for annual and monthly allocation, the use of interconnection capacities depending on the written agreement of Ukrenergo (Ukraine TSO).

Starting with 2019, on the borders with Bulgaria and Hungary, the auctions for the annual and monthly allocation are made by the Joint Allocation Office (JAO), which has become, starting with 1 October 2018, the Single Allocation Platform (SAP) that organizes auctions for cross-border capacity allocation for all European TSOs.

Daily auctions on the border with Bulgaria are organized by CNTEE Transelectrica SA.

The following chart shows the monthly average values of the net transfer capacity (NTC) of the NPS with the aforementioned neighboring energy systems and the average transfer capacity allocated at long-term export and import auctions.

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

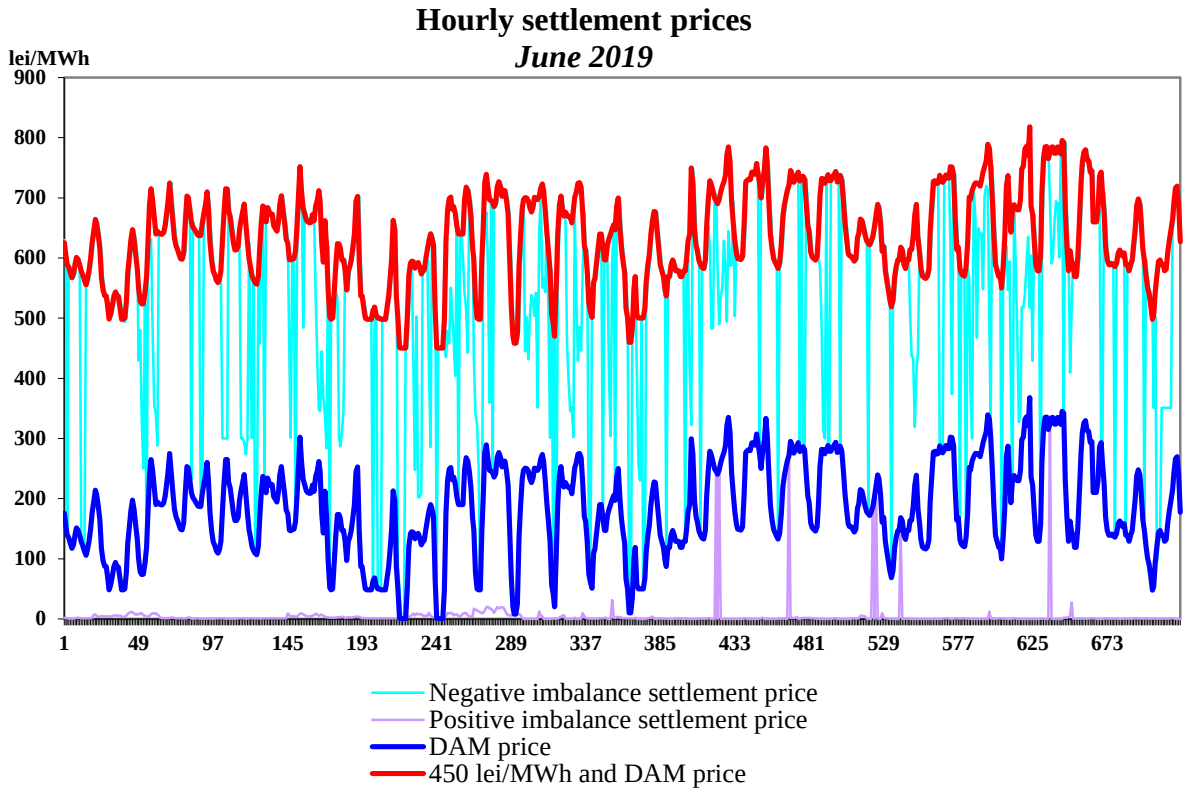


	Ian	Feb	Mar	Apr	Mai	Iun	Iul	Aug	Sep	Oct	Nov	Dec
NTC export 2018 (MW)	-338	-388	-306	-277	-228	-224	-240	-286	-285	-318	-328	-350
LT export allocation 2018 (MW)	-320	-364	-281	-262	-220	-214	-228	-272	-253	-282	-309	-330
NTC export 2019 (MW)	-388	-350	-274	-317	-338	-301						
LT export allocation 2019 (MW)	-367	-332	-262	-284	-295	-286						
NTC import 2018 (MW)	450	525	500	462	388	355	434	450	287	363	517	550
LT import allocation 2018 (MW)	376	400	461	434	343	331	401	387	271	323	419	518
NTC import 2019 (MW)	550	575	544	547	465	450						
LT import allocation 2019 (MW)	518	550	486	494	435	420						

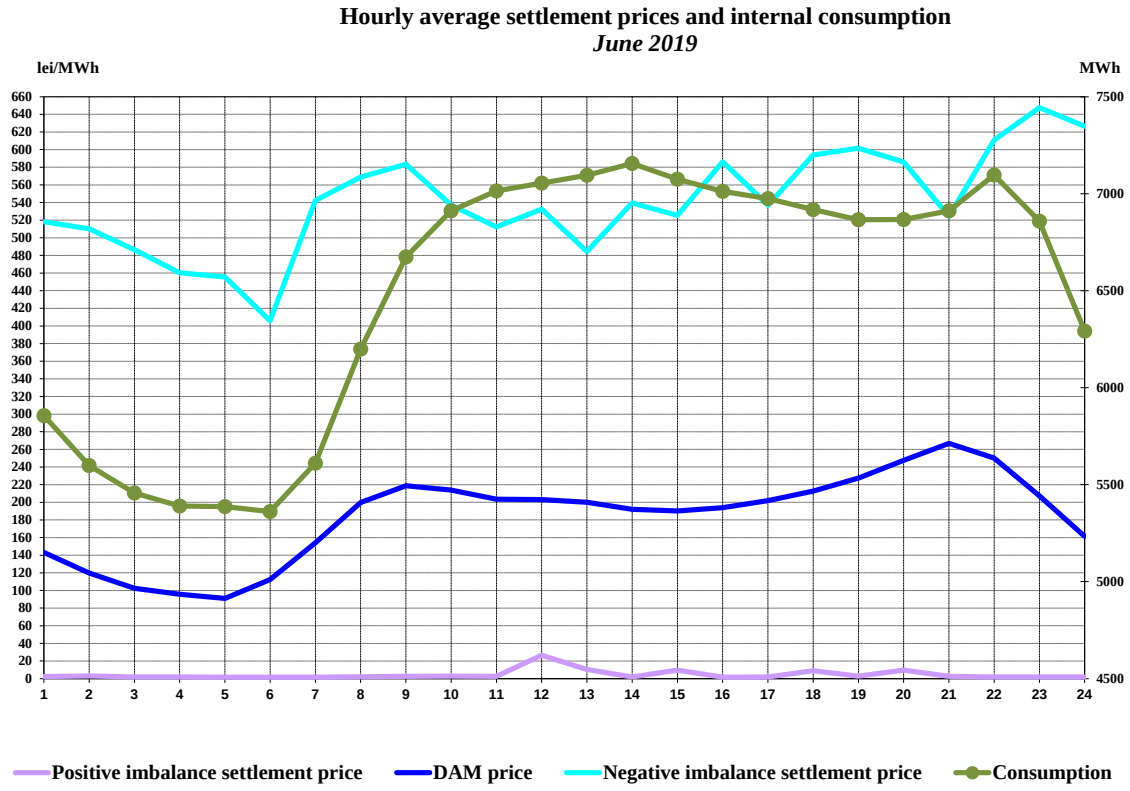
Source: Monthly reports of CNTEE Transelectrica SA – Electricity Market Monitoring Unit assessment

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

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



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

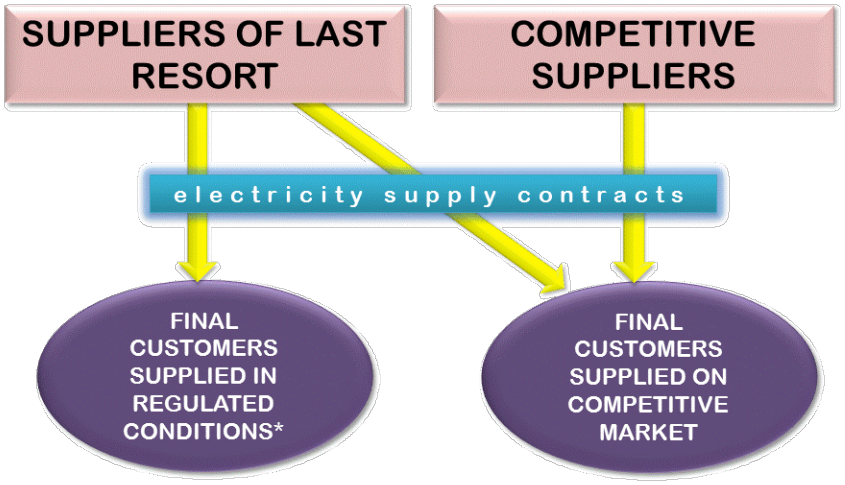


Source: Monthly reports of Opcom SA and CNTEE Transelectrica SA – Electricity Market Monitoring Unit assessment

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

III. RETAIL ELECTRICITY MARKET

1. Structure of the retail electricity market

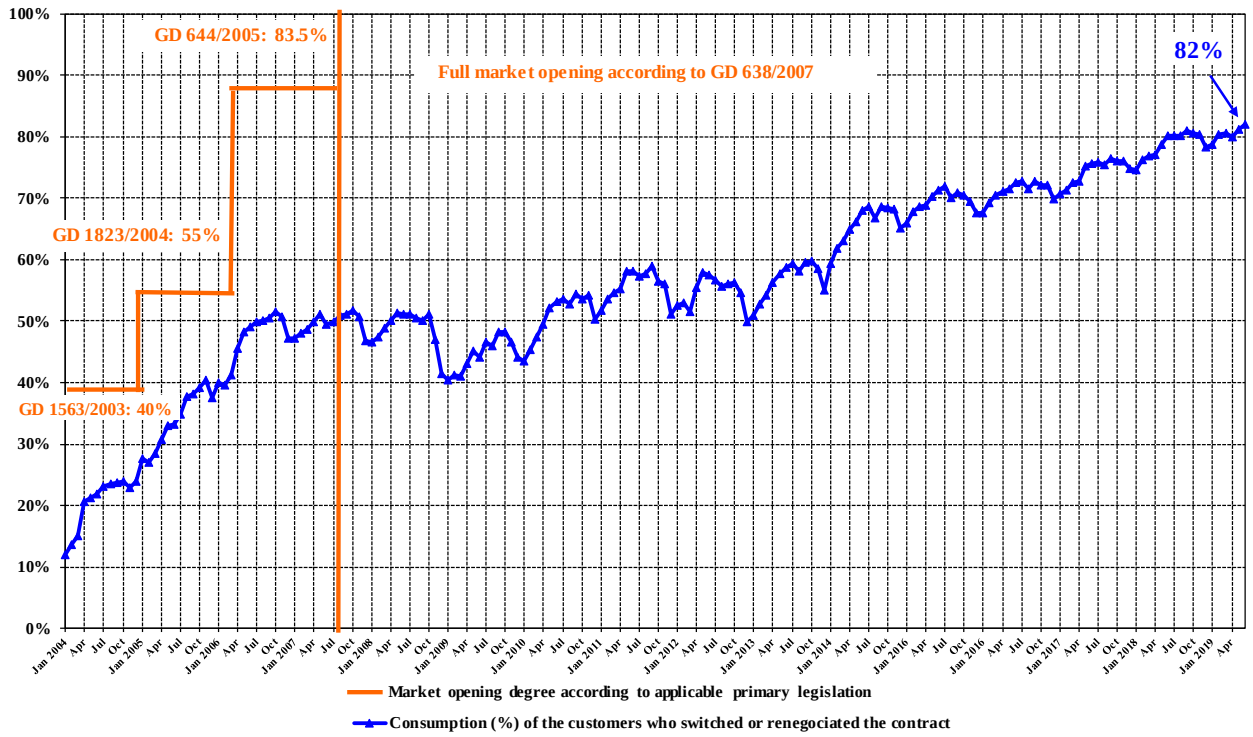


* according to art. 53 (2) and art. 55 (1) from Electricity and Gas Law no. 123/2012

2. Electricity market opening degree

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

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

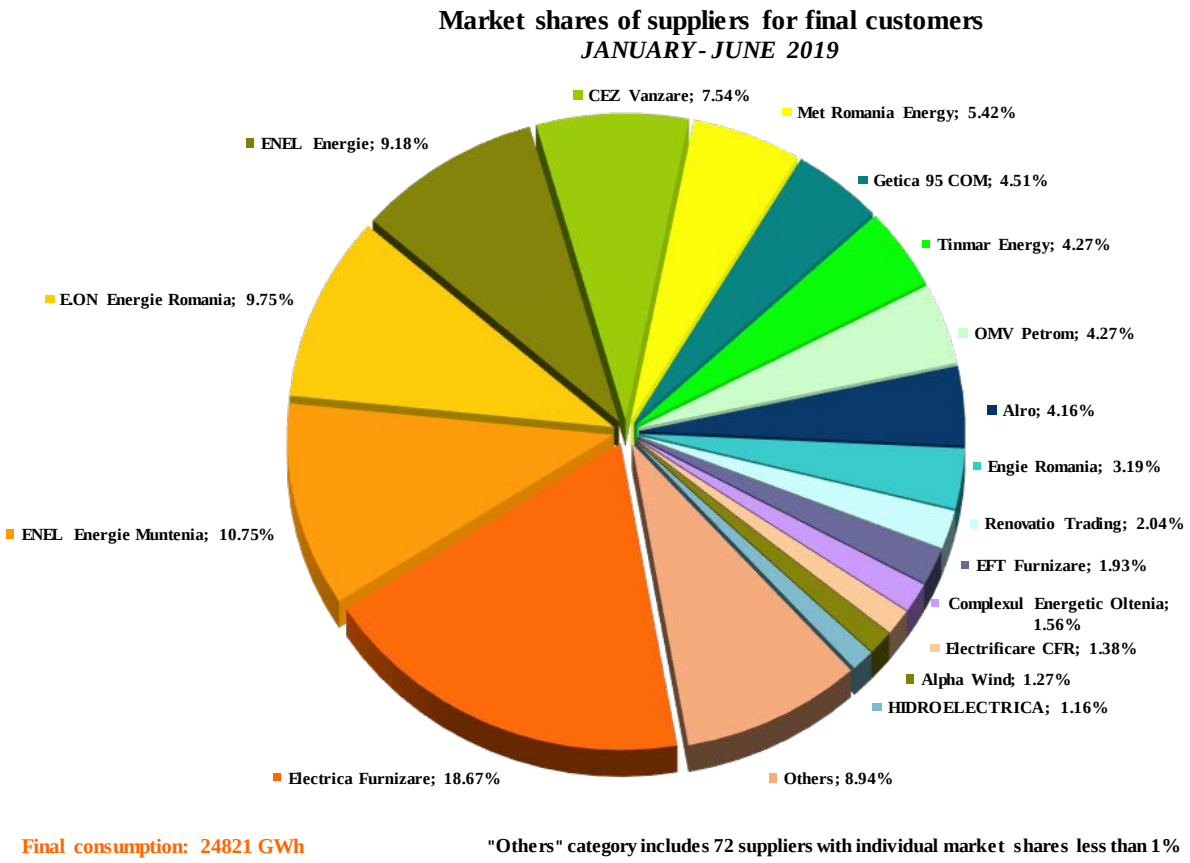


Source: Monthly reports of suppliers of final customers– Electricity Market Monitoring Unit assessment

3. Market shares of electricity suppliers

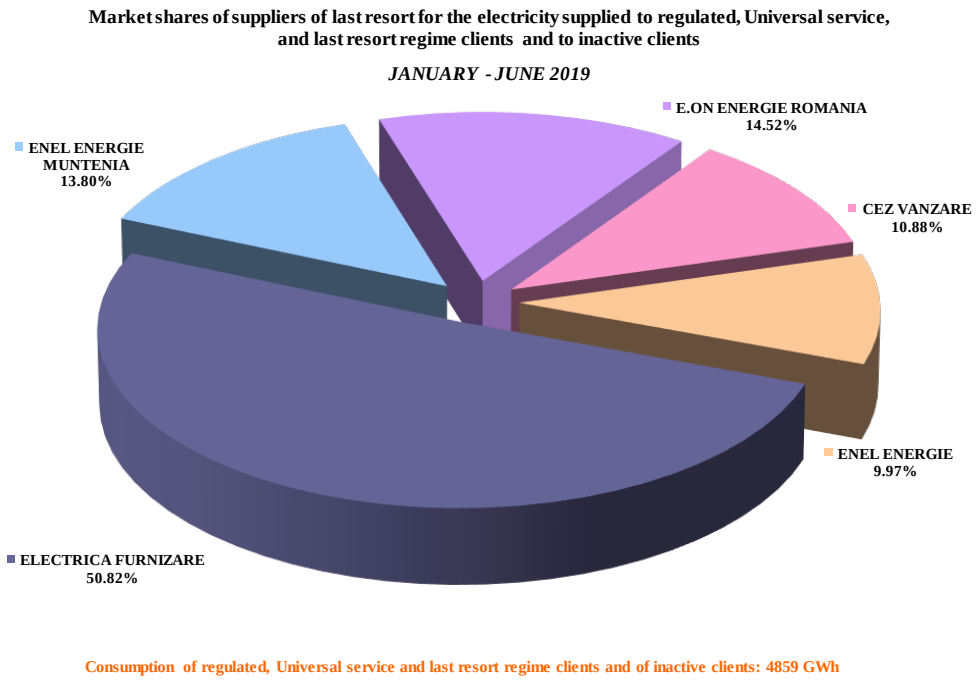
In the following three graphs are presented the market shares of electricity suppliers on the retail market, calculated:

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



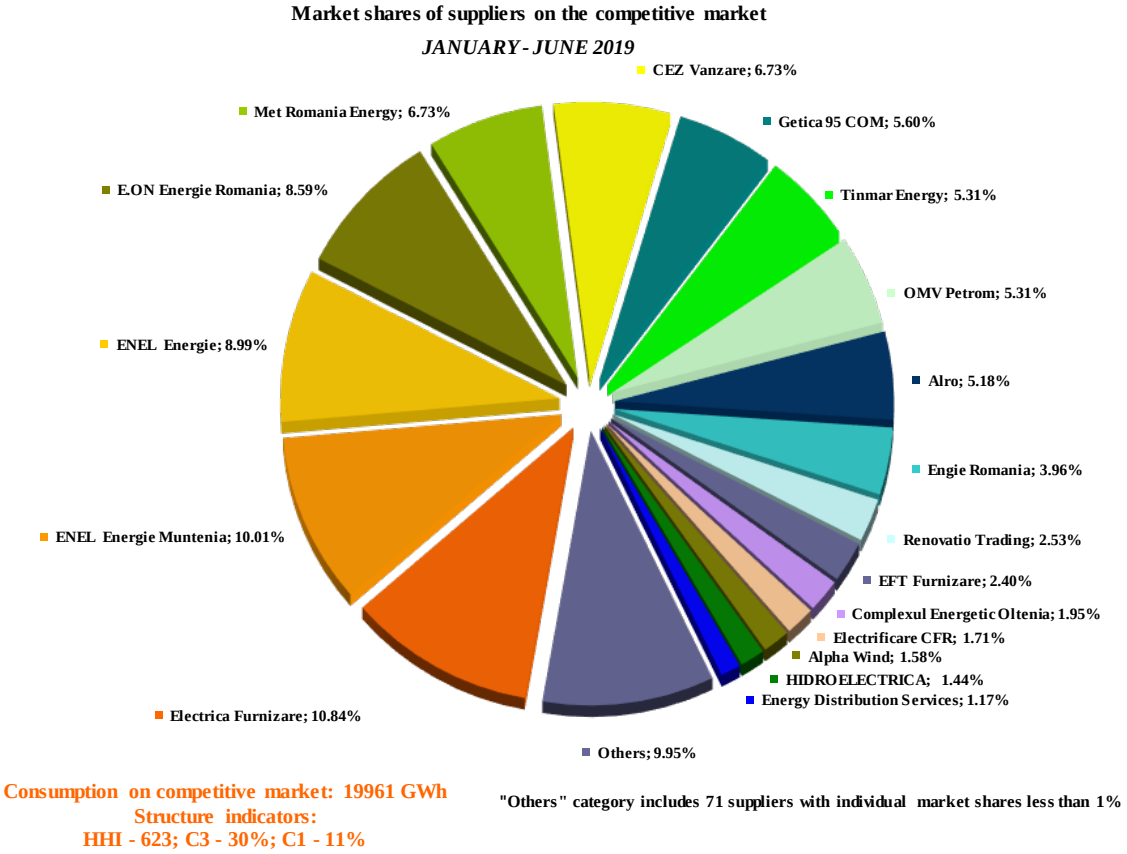
Source: Monthly reports of suppliers for final customers – Electricity Market Monitoring Unit assessment

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



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

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



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

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

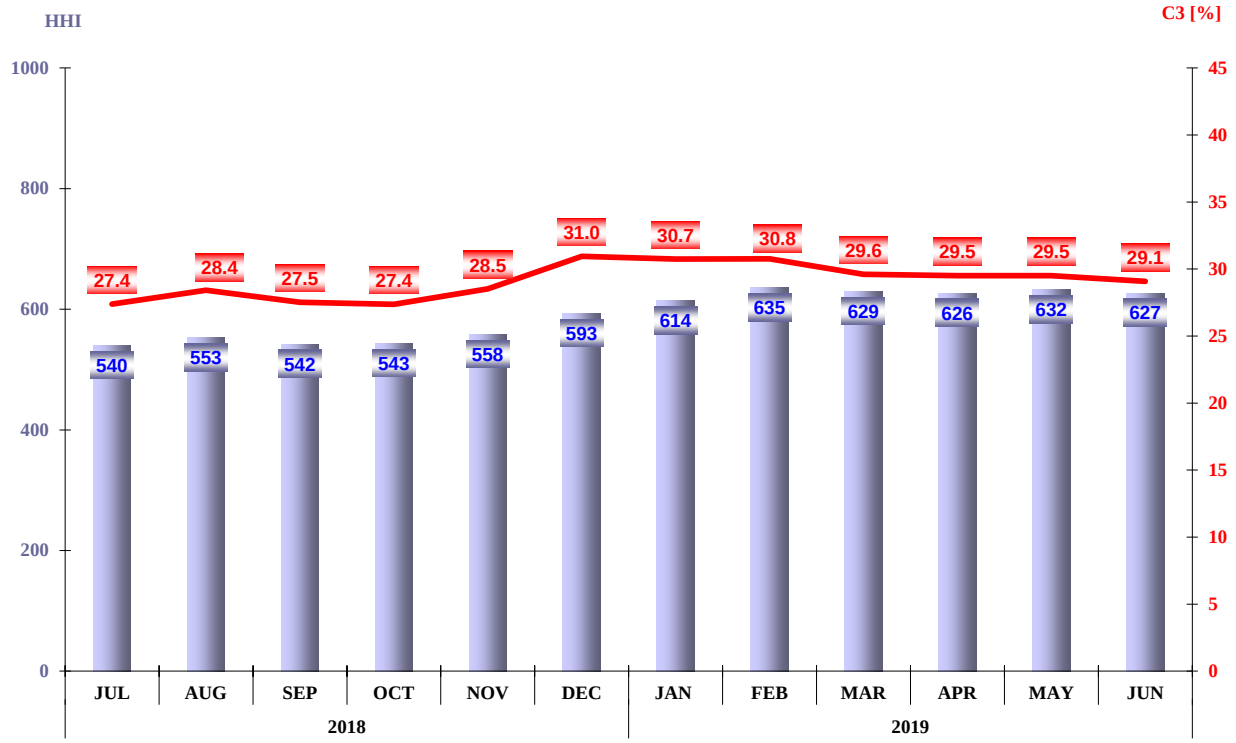
Number of suppliers	Share of sales to final customers from total sales trades			
	100%	75% - 100%	50% - 75%	<50%
Competitive	13	19	5	19
Of last resort	0	5	0	0

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

4. Concentration indicators of the competitive retail electricity market

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

Herfindahl-Hirschman (HHI) and Concentration Ratio of the three main suppliers delivering electricity on competitive market (C3)



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

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

Indicators - June 2019	Consumption bands - Non-household customers							
	IA	IB	IC	ID	IE	IF	IG	Total
C1 - % -	28	20	18	14	18	15	21	**11**
C3 - % -	78	49	44	34	42	35	53	**28**
HHI	2165	1187	979	709	956	763	1280	**599**
Consumption - GWh -	146	357	340	655	389	234	785	**2906**
No. of SUPPLIERS	60	71	63	59	23	18	13	**81**
No. of suppliers of last resort	5	5	5	5	5	4	3	**5**
No. of competitive suppliers	41	49	43	42	13	10	5	**55**
No. of producers	14	17	15	12	5	4	5	**21**

Indicators -June 2019	Consumption bands - Household customers					
	DA	DB	DC	DD	DE	Total
C1 - % -	50	33	31	33	38	**38**
C3 - % -	92	80	77	77	71	**83**
HHI	3714	2281	2170	2412	2236	**2600**
Consumption - GWh -	128	122	66	42	14	**372**
No. of SUPPLIERS	36	34	38	37	37	45
No. of suppliers of last resort	5	5	5	5	5	**5**
No. of competitive suppliers	27	26	29	29	28	**34**
No. of producers	4	3	4	3	4	**6**

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

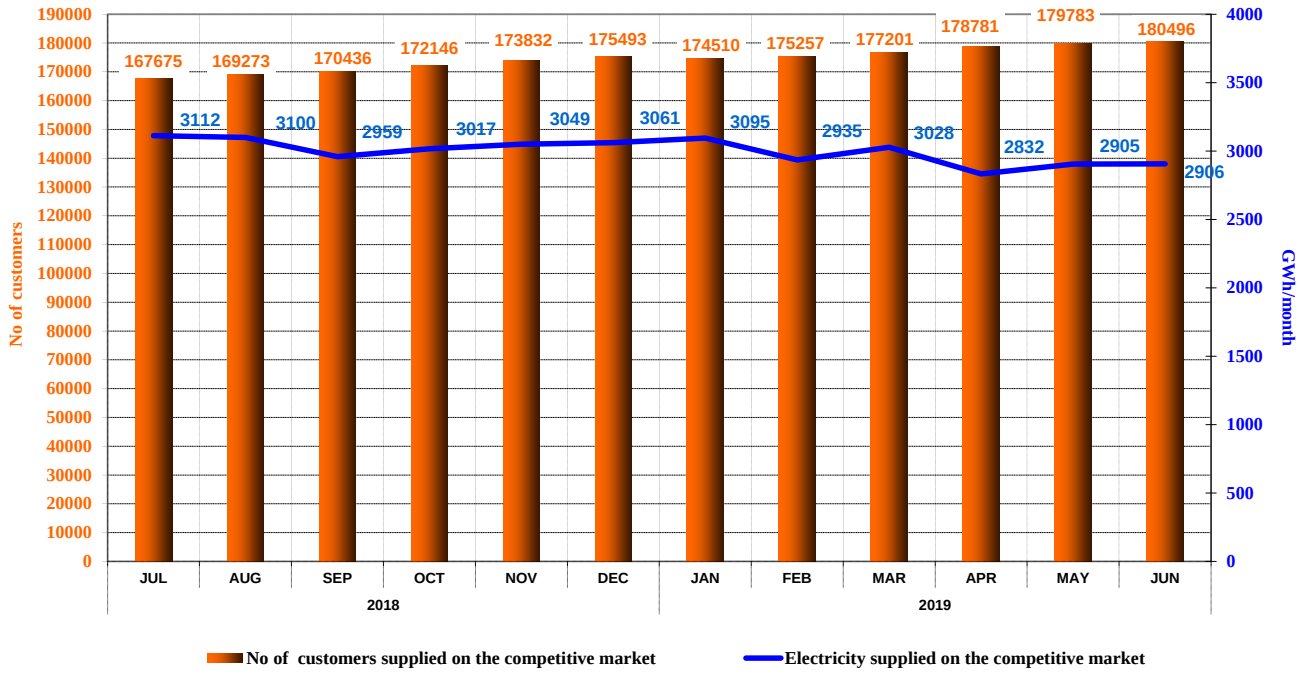
5. The evolution of the number of clients and of the electricity delivered

The number of final clients supplied under competitive conditions is shown on a monthly basis over the last 12 months. Also, it is presented the structure on categories of clients for June 2019, according to the provisions of Regulation (EU) no. 2016/1952 of the European Parliament and of the Council. The tables below present in detail the consumption ranges corresponding to each consumption band:

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

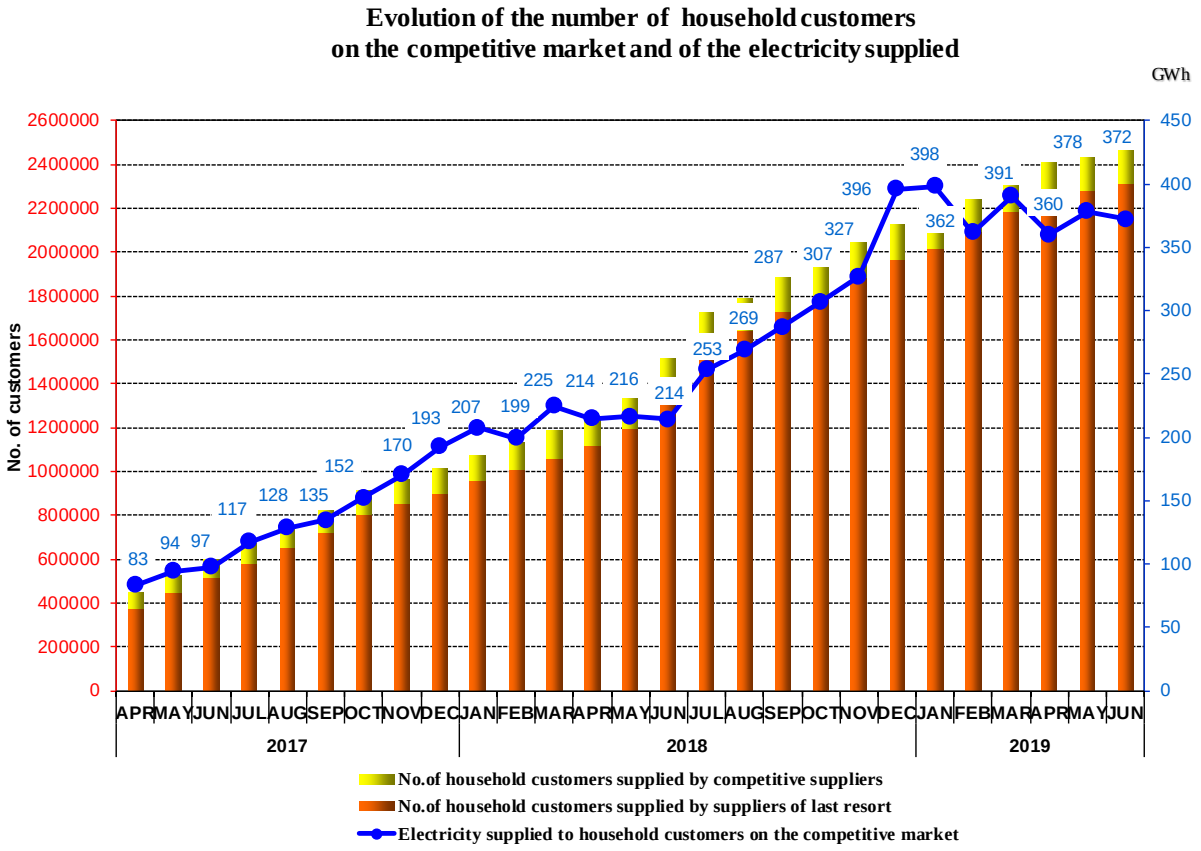
Household customers	Annual electricity consumption (kWh):	
DA		<1000
DB	>=1000	<2500
DC	>=2500	<5000
DD	>=5000	<15000
DE	>=15000	

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

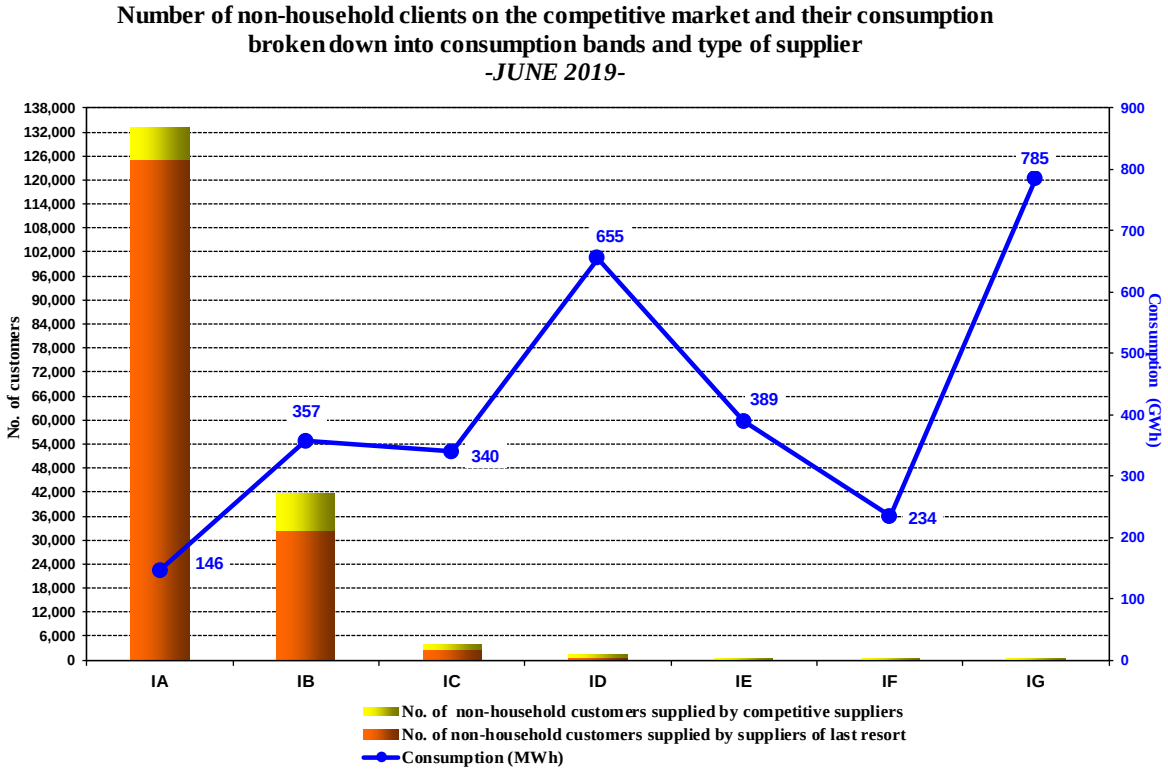


Source: Monthly reports of competitive suppliers – Electricity Market Monitoring Unit assessment

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

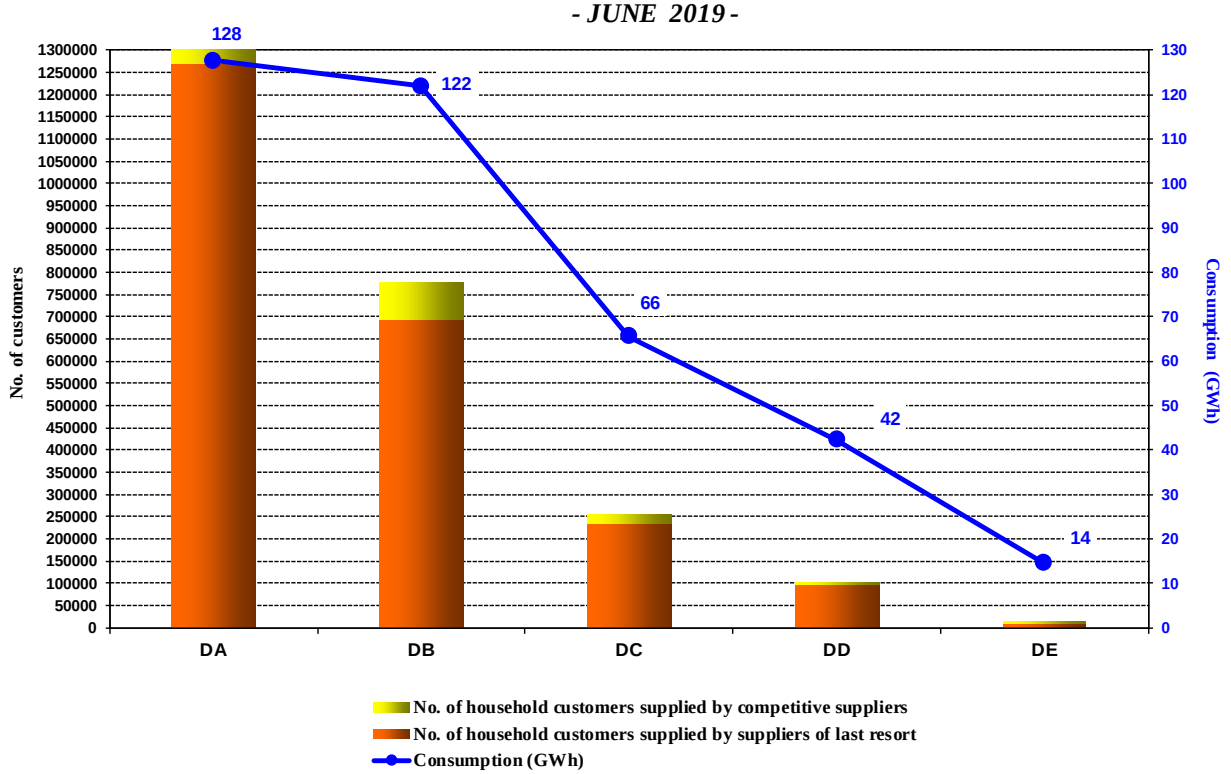


Source: Monthly reports of suppliers – Electricity Market Monitoring Unit assessment



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

Number of households on the competitive market and their consumption broken down into consumption bands and type of supplier
- JUNE 2019 -

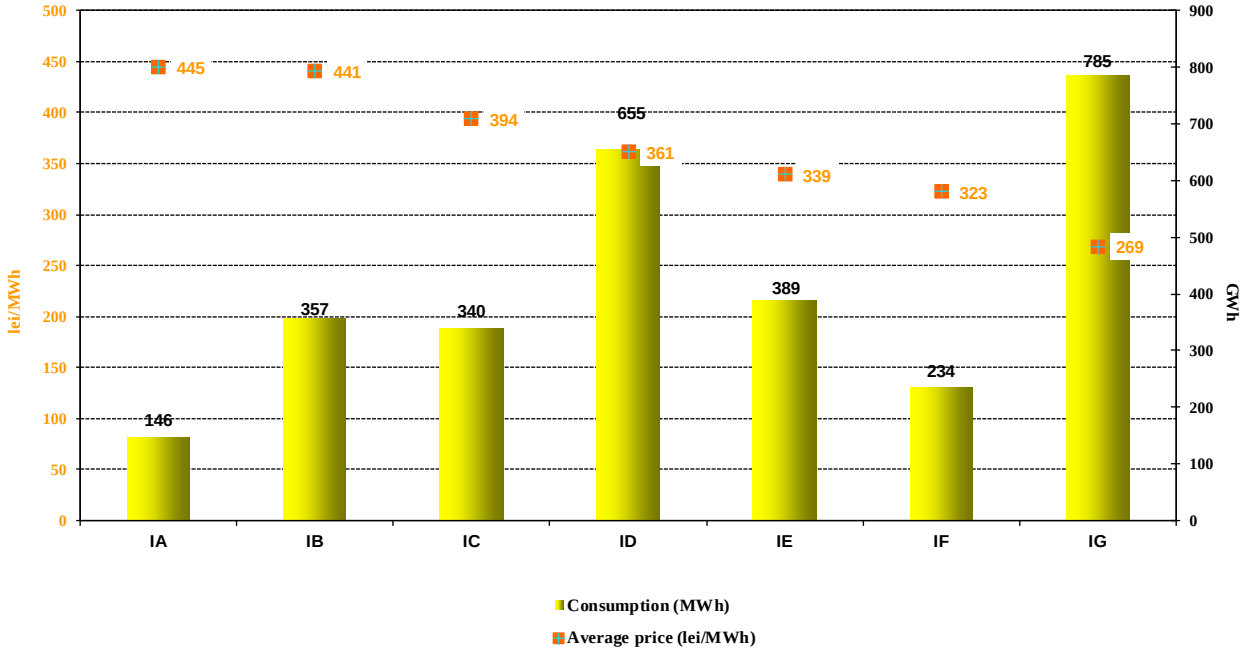


Source: Monthly reports of the suppliers – Electricity Market Monitoring Unit assessment

6. Average selling prices to final clients on the competitive market

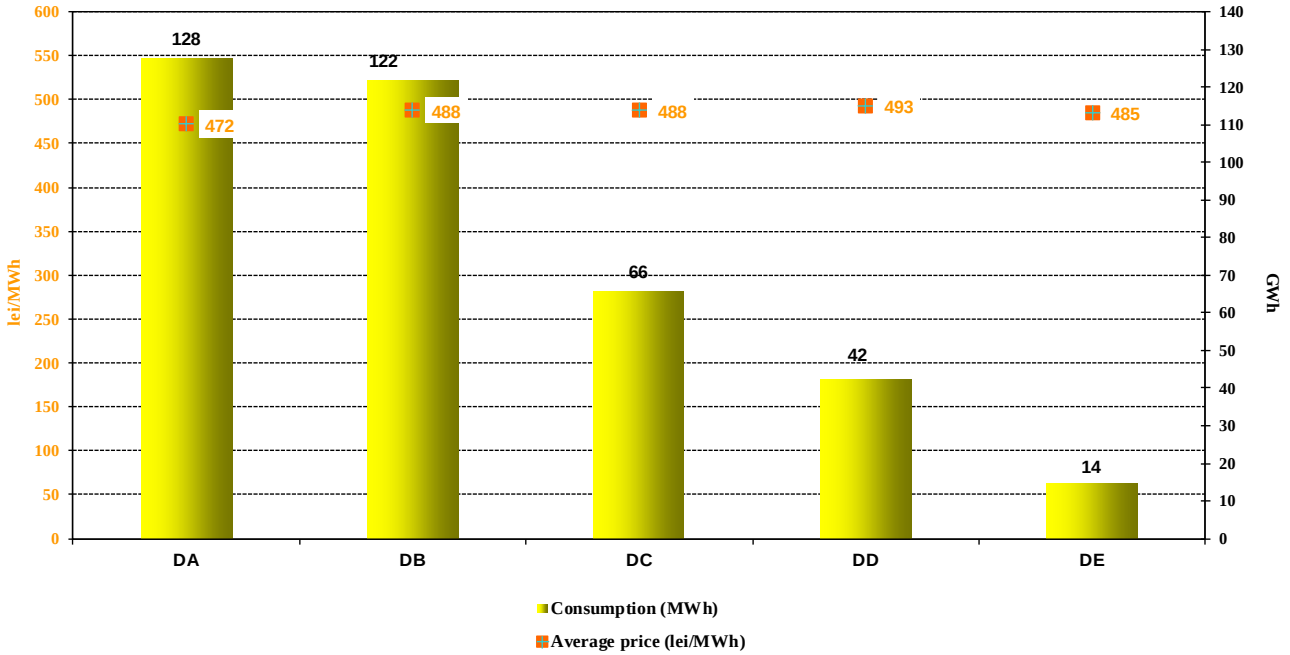
The following graphs present the average selling prices for June 2019 to household clients and non-household final clients supplied on the competitive market, based on the structure defined according to the Regulation (EU) no. 2016/1952.

Average price and electricity consumption broken down on consumption bands for non-household customers on the competitive segment of REM
- JUNE 2019-



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

Average price and electricity consumption broken down on consumption bands for household customers on the competitive segment of REM
- JUNE 2019 -



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

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

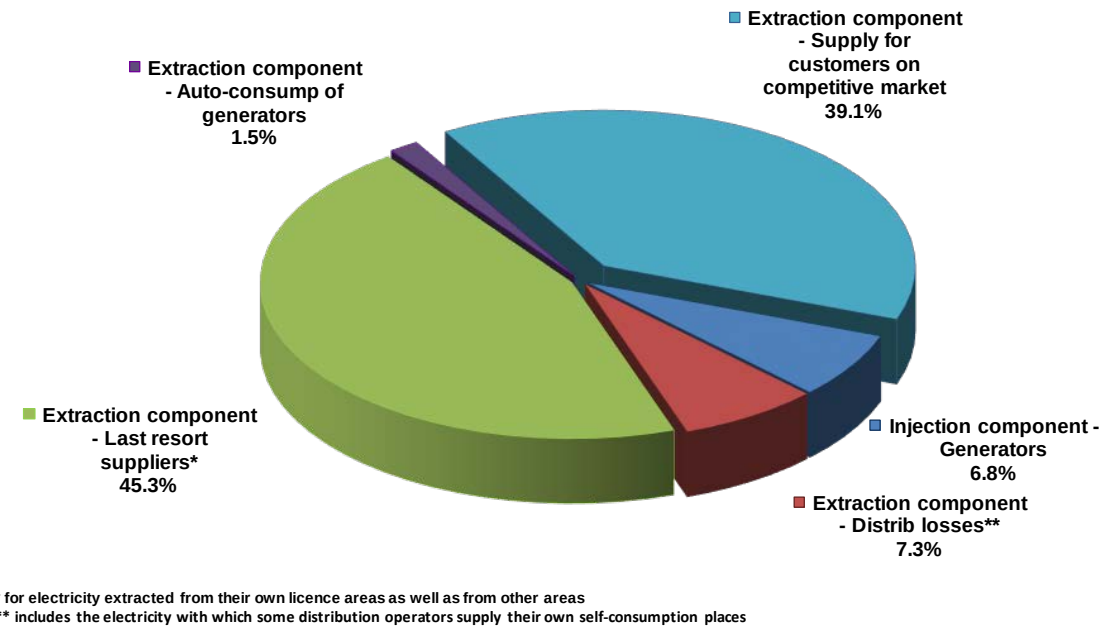
IV. TRANSMISSION AND SYSTEM OPERATOR CNTEE TRANSELECTRICA SA

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

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

The following graph presents the structure of the revenues for June 2019, following the provision of the transmission service.

CNTEE Transelectrica SA structure of revenues from transmission services
- JUNE 2019-

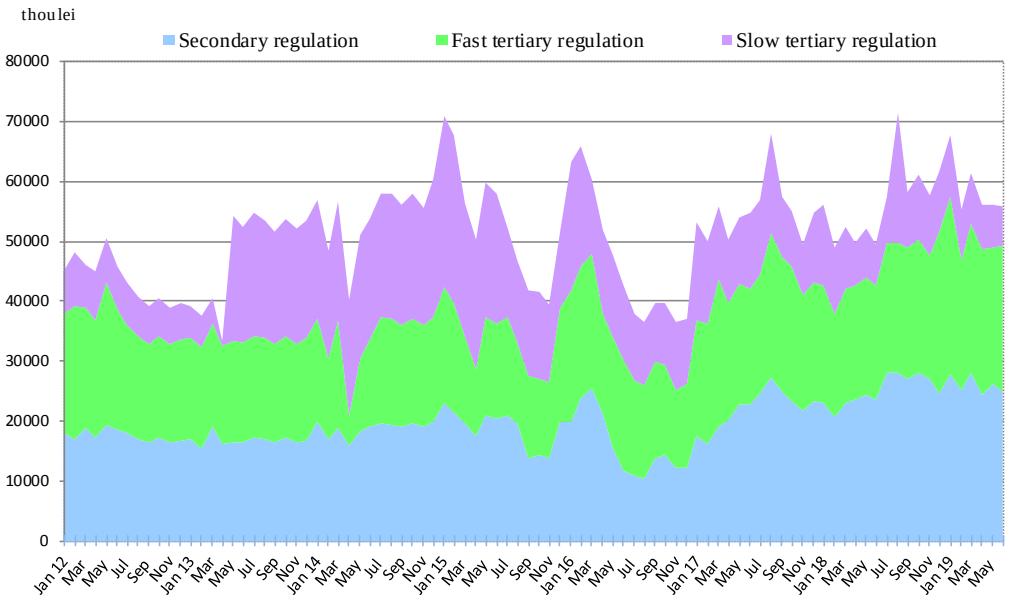


* for electricity extracted from their own licence areas as well as from other areas
** includes the electricity with which some distribution operators supply their own self-consumption places

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

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

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



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

V. MARKET RULES EVOLUTION IN JUNE 2019

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

- ANRE President Order no. 69/12.06.2019 of approval for the modification and completion of the ANRE President Order no. 183/2018 regarding the approval of the reference bonuses values for the electricity produced in high efficiency cogeneration and of the reference prices for the thermal energy produced in cogeneration, applicable in 2019;
- ANRE President Order no. 70/12.06.2019 approving the reference prices for the thermal energy delivered in SACET from power stations with cogeneration units that do not benefit from support schemes for promoting high efficiency cogeneration, applicable in the second semester of 2019;
- ANRE President Order no. 81/24.06.2019 regarding the approval of the average tariff for the transport service, the components of the transport tariff for the introduction of the electricity in the network (TG) and for the extraction of the electricity from the network (TL), the tariffs for the system service and the price regulated for reactive electricity, applied by the National Electricity Transport Company "Transelectrica" - SA, in force starting with July 1, 2019;
- ANRE President Order no. 153/24.06.2019 approving the modification of the annex to the ANRE President Order no. 202/2018 for the approval of the regulated tariff applied by the electricity market operator;
- ANRE President Order no. 155/24.06.2019 regarding the modification and completion of the Methodology for determining and monitoring the overcompensation of the activity of electricity and thermal energy production in high efficiency cogeneration benefiting from the bonus type support scheme, approved by ANRE President Order no. 84/2013;
- ANRE President Decision no. 1143/19.06.2019 regarding the approval of the quantities produced in high efficiency cogeneration units benefiting from the bonus scheme for May 2019.

VI. EXPLANATIONS AND ABBREVIATIONS

1. Explanations

- ***Internal consumption*** is calculated, in this document, as the sum of electricity delivered into the grid (described below) and the balance of trades made on the basis of the import and export contracts of the wholesale market participants;
- ***Consumption of final customers supplied under regulated, US and last resort regime*** is the consumption of final customers supplied by suppliers of last resort at regulated tariffs, US price, last resort price and inactive clients price;
- ***Consumption of final customers on competitive market*** represents the consumption of customers supplied at negociated prices or defined by standard bids;
- **Fuel consumption** represents the fuel consumed for generating electricity and heat in the power plants of monitored generators;
- ***Self-consumption of generators*** (in the graph regarding the revenues of CN Transelectrica SA) the self-consumption exclusively represents the generators consumption at consumption places other than the generation sites;

- ***Electricity delivered into the grid*** includes the electricity sold by the generators through direct lines or consumed by themselves at other consumption sites;
- ***Electricity delivered into the grid according to the transport contract*** is the electricity for which the transport service (the grid input component) is provided corresponding to the electricity delivered from the power plants with installed capacity of more than 5 MW connected to the transmission and distribution electric grids.

2. Abbreviations

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