



ROMANIAN ENERGY REGULATORY AUTHORITY

DEPARTMENT FOR MONITORING, REMIT



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# ELECTRICITY MARKET MONITORING REPORT

## NOVEMBER 2019

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

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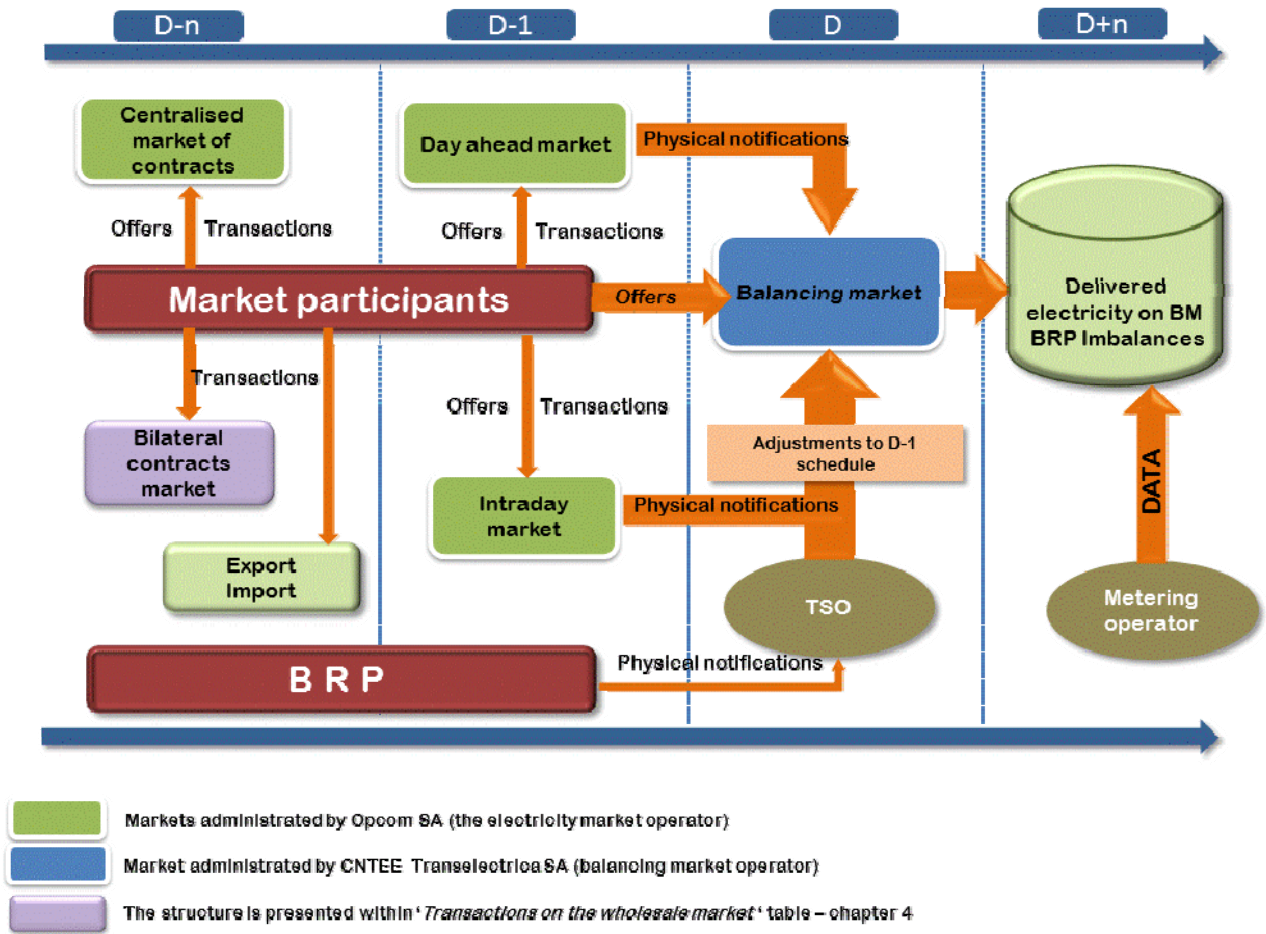
## I. MAIN EVENTS IN THE DEVELOPMENT OF THE ROMANIAN ELECTRICITY MARKET

- **GD 365/1998** – vertically integrated monopoly – 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 opening at 10%;
- **GD 627/2000** – CONEL holding is dissolved;
- **September 2000** – launch of the compulsory electricity spot market in Romania, operated 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;
  - mandatory balancing market, with TSO as single counterparty;
  - financial responsibilities for balancing are allocated to the BRP;
- **GD 644/2005** – electricity market opening at 83.5%;
- **November 2005** – launch of the green certificates market;
- **December 2005** – launch of the centralized market for bilateral contracts;
- **March 2007** – launch of the centralized market for partially standardized bilateral contracts with continuous negotiation;
- **GD 638/2007** – fully opening of electricity and gas markets;
- **July 2007** – rules for capacity market 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 concluded;
- **August/October 2010** – launch of bilateral coordinated auctions for capacity allocation on interconnections with Hungary and Bulgaria;
- **July 2011** - launch of the intraday market;
  - **GD 930/2010** – SC Electrica Furnizare SA established through the merger of the former last resort suppliers Electrica Furnizare Muntenia Nord, Electrica Furnizare Transilvania Nord and Electrica Furnizare Transilvania Sud;
- **June 2012** – a new entity obtains the generation license and enters on the electricity market - Complexul Energetic Oltenia SA, established in a dual system through the merger of the former SNLO Tg. Jiu, Complexul Energetic Turceni, Complexul Energetic Rovinari and Complexul Energetic Craiova (GD 1024/2011);
- **July 2012** – Law no. 123/2012 on electricity and natural gas enters into force;
- **September 2012** – the application of the first stage of the timetable of phasing out 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** – Law no. 160/2012 on the organisation and functioning of the Romanian Energy Regulatory Authority entered into force;
- **November 2012** - a new entity obtains the generation license and enters the electricity market - Complexul Energetic Hunedoara SA, established through the merger of the former Electrocentrale Deva and Electrocentrale Paroseni (GD 1023/2011);
- **December 2012** – launch of the organised electricity market for large customers;
- **July 2013** – launch of centralized market trading with continuous double negotiation of bilateral contracts for electricity;
- **August 2013** – removal of injection transmission tariff for the imported and respectively of the extraction transmission tariff for the exported quantities, and of the corresponding system services;
- **December 2013** – removal of the export tariffs applied by the electricity market operator;

- certification with conditions for CNTEE Tranelectrica SA as an independent transmission and system operator;
- application of last stage of the phasing out calendar for removal of the regulated tariffs applied to the final non-household clients who do not use their eligibility rights;
- **August 2014** – CNTEE Tranelectrica SA certification as NPS transmission system operator following the „independent system operator” model;
- **October 2014** – entry into force of Law no. 127/2014 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 Law no. 203/2016 amending Law no. 123/2012 on electricity and natural gas;
- **July 2018** - entry into force of Law no. 167/2018 amending and supplementing Law no. 123/2012 on electricity and natural gas;
- **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;
- **July 2019** – introduction of the centralized market for electricity from renewable sources supported by green certificates.
- **November 2019** – launch of the Single Intraday Coupling (SIDC) through continuous trading of the Intraday electricity markets of Romania, Bulgaria, Hungary, Croatia, The Czech Republic, Poland, Slovenia, Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Latvia, Lithuania, Norway, Sweden, Holland, Portugal and Spain.

## II. WHOLESALE ELECTRICITY MARKET

### 1. Structure of the wholesale electricity market





No.	Category	No.	Category
<b>K</b>	<b>Electricity Suppliers acting exclusively on the wholesale market</b>		<b>Electricity Suppliers acting also on the retail market</b>
1	AIK Energy Ltd	12	Cyeb SRL
2	Axpo Energy Romania SRL	13	EFT Furnizare SRL
3	CEZ as	14	Egger Romania SRL
4	Danske Commodities/s Aarhus	15	Elcata MHC SRL
5	EDF Trading Limited	16	Electric Planners SRL
6	Elpetra Energy E.A.D.	17	Electrificare CFR SRL
7	Energi Danmark A/S	18	Electrocarbon SA
8	Energo-Pro Trading EAD	19	Electromagnetica SA
9	Energovia EOOD	20	Elsid SA
10	Energy Deta SRL	21	Enel Trade Romania SRL
11	Energy Supply D.O.O	22	Energia Gas & Power SRL
12	Enero Furnizare SRL	23	Energy Distribution Services SRL
13	Eolian Project SRL	24	Engie Romania SA
14	EVN Trading South East Europe	25	Energy Trade Activ SRL
15	Evobits Information Technology	26	Enol Grup SA
16	Ezpada AG	27	Entrex Services SRL
17	Ezpada s.r.o.	28	GDM Logistic SRL
18	Flavus Investitii SRL	29	Getica 95 Com SRL
19	Freepoint Commodities Europe Ltd	30	Grenerg SRL
20	GEN I trgovanje in prodaja elektricne energije doo	31	Hermes Energy International SRL
21	Holding Slovenske Elektrarne	32	ICCO Energy SRL
22	Interenergo Energetski, Inzeniring d.o.o.	33	ICPE Electrocond Technologies SA
23	Lord Energy SRL	34	Imperial Development SRL
24	Met RO NRG	35	Industrial Energy SA
25	MFT Energy A/S	36	Izvor de Lumina SRL
26	MVM Partner Zrt	37	Luxten LC SA
27	Neptun SA	38	MET Romania Energy SA
28	Nis Petrol SRL	39	Monsson Trading SRL
29	OMV Gas Marketing & Trading GmbH	40	Next Energy Parteners SRL
30	Petrol, Slovenska energetska druzba	41	Nova Power&Gas SRL
31	Ritam-4-TB ood	42	P.C. Management & Consulting SRL
32	Statkraft Markets GmbH	43	Photovoltaic Green Project SRL
		44	Plenerg SRL
<b>L</b>	<b>Electricity Suppliers acting also on the retail market</b>	45	QMB Energy SRL
1	A Energy Ind SRL	46	RCS&RDS SA
2	Absolute Energy SRL	47	Renovatio Trading SRL
3	Aderro G.P. Energy SRL	48	RES Energy Solutions SA
4	Alive Capital SRL	49	Restart Energy One SRL
5	Alro SA	50	Romelectro SA
6	Anchor Grup SA	51	Stock Energy SRL
7	Apuron Energy SRL	52	Tinmar Energy SA
8	Aqua Energia SA	53	Transenergo Com SA
9	CET Arad SA	54	Transformer Energy Supply SRL
10	Cotroceni Park SA	55	Uzinsider General Contractor SA
11	Crest Energy SRL	56	Veolia Energie România SA
		57	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. 167/2019, 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](http://www.transelectrica.ro).

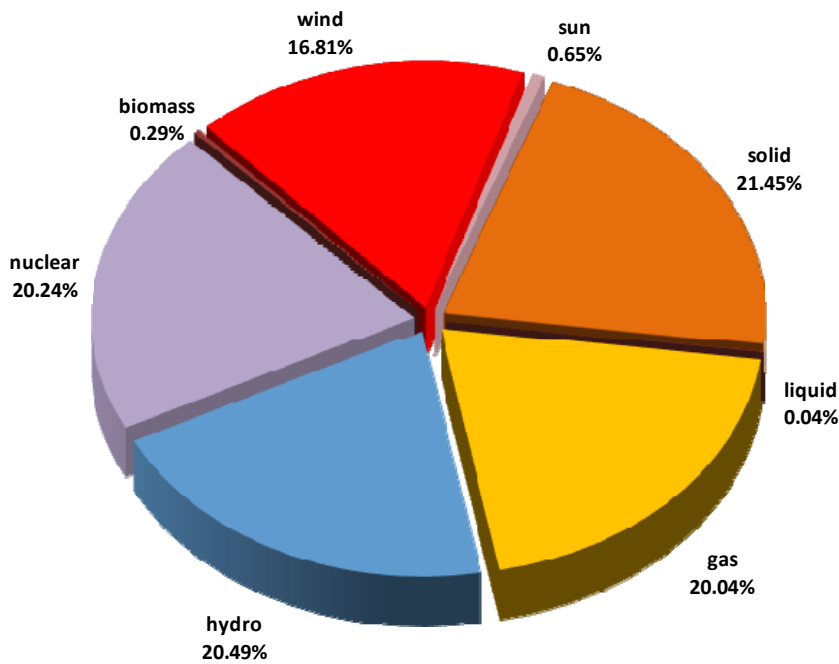
The monitored electricity generation license holders are producers holding dispatchable groups, which, according to the *Regulation for programming production units and dispatchable consumers*, approved by the ANRE Order no. 32/2013 are classified under the following power categories:

- 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”.

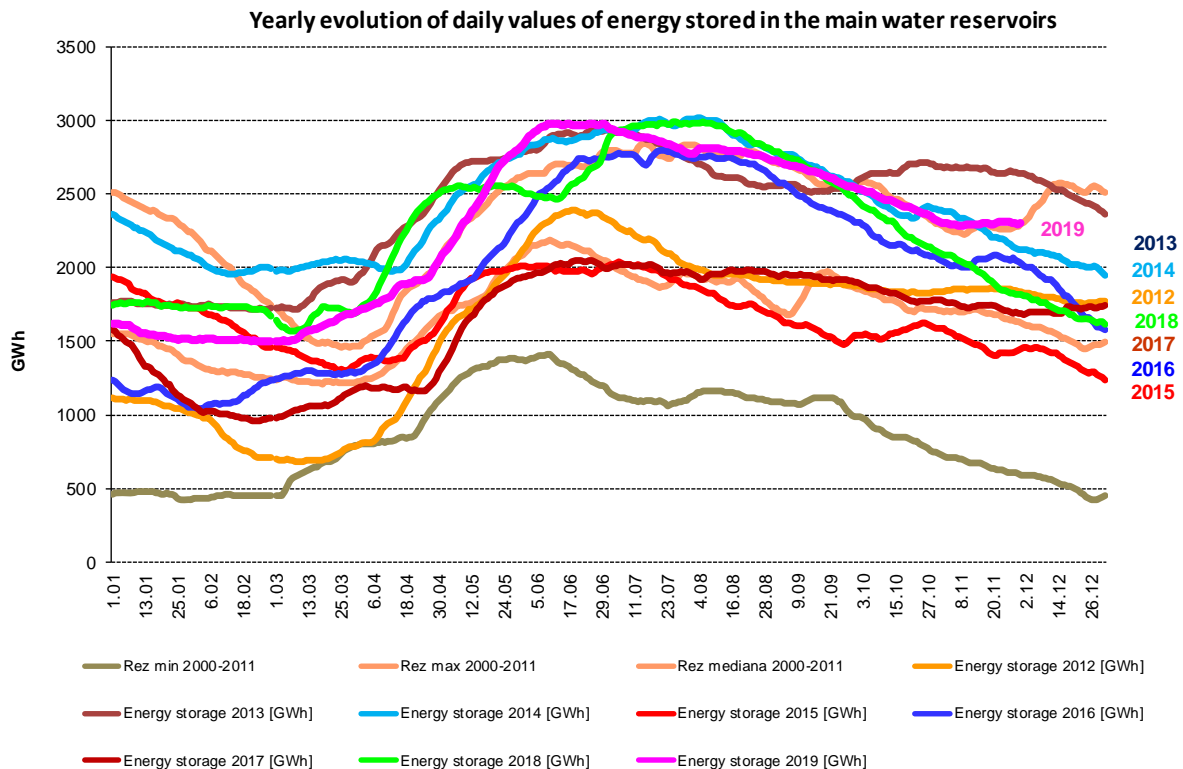
### 3. Generation structure of the National Power System on resources types

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



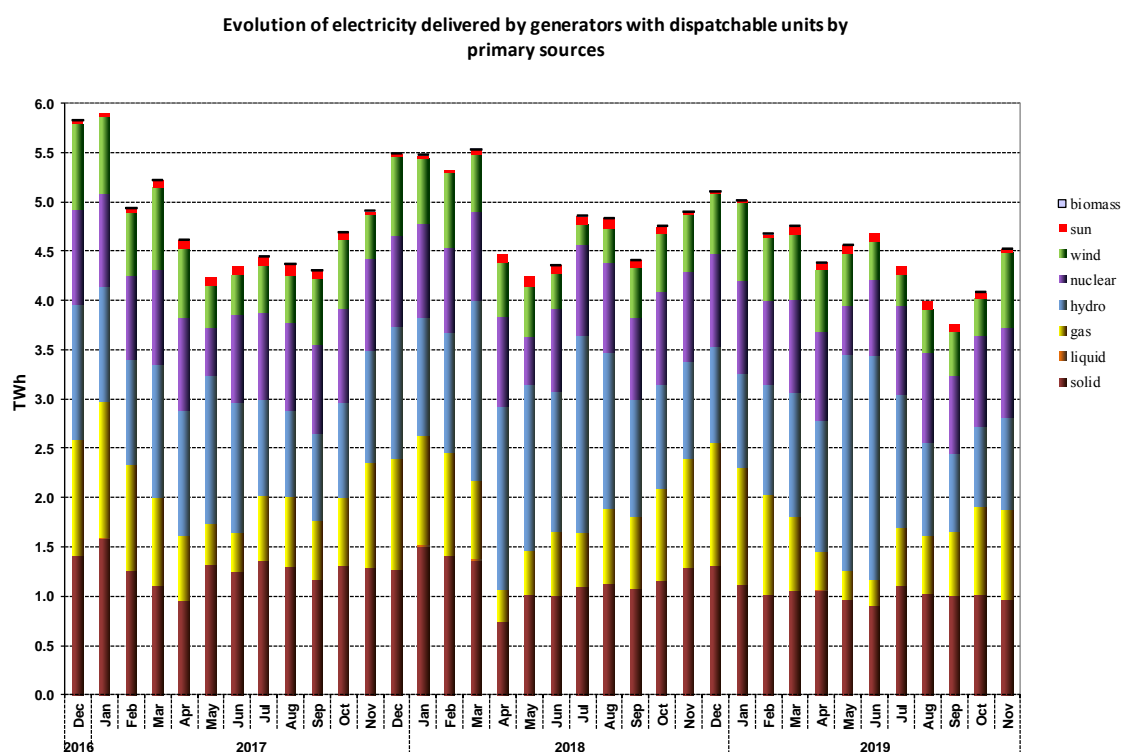
Source: Monthly reports of producers – Electricity Market Monitoring Unit assessment

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



Source: Monthly reports of 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 November 2019, compared to the data for the similar period of 2018:

Nr. crt.	INDICATOR	UM	November 2018	November 2019	%	Jan-Nov 2018	Jan-Nov 2019	%
0	1	2	3	4	$5=4/3*100$	6	7	$8=7/6*100$
1	Generated electricity	TWh	5.24	4.82	91.99	56.51	51.96	91.95
2	Delivered electricity	TWh	4.91	4.53	92.26	53.20	48.87	91.86
3	Import	TWh	0.33	0.49	148.49	2.46	4.47	181.71
4	Export	TWh	0.37	0.35	94.60	5.15	3.10	60.20
5	Internal consumption (2+3-4)	TWh	4.88	4.66	95.50	50.51	50.24	99.47
6	Consumption of household customers:	TWh	1.07	1.06	99.07	11.52	11.78	102.26
6.1	- on US/ regulated regime	TWh	0.74	0.67	90.54	8.79	7.66	87.15
6.2	- on the competitive market	TWh	0.33	0.39	118.19	2.72	4.12	151.47
7	Consumption of non-household customers:	TWh	3.13	2.98	95.21	34.06	33.50	98.36
7.1	- on US and last resort regime and inactive clients	TWh	0.08	0.09	112.50	0.90	0.91	101.12
7.2	- on the competitive market	TWh	3.05	2.89	94.76	33.16	32.59	98.29
8	Transmission–Injection component	TWh	4.80	4.44	92.50	51.95	47.69	91.80
9	Transmission–Extraction component	TWh	4.80	4.62	96.25	50.64	50.45	99.63
10	Actual transmission grid losses	TWh	0.09	0.08	88.89	1.00	0.88	88.00
11	Heat generated for delivery	Tcal	1331.51	1022.50	76.80	10500.23	9835.78	93.68
12	Heat in co-generation	Tcal	1010.57	741.97	73.42	7763.21	7268.04	93.63

**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 neighbouring 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. 81/2019);
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).

**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 include 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). Also at Opcom, starting with September 2019, the centralized market for electricity from renewable sources supported by green certificates has become functional (CME-RES-GC).

After the entry into force of Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management (CACM Regulation), started the elaboration and approval by all the regulatory authorities or by ACER of its subsequent documents, which will allow single Day-ahead price coupling and correlation through continuous trading of the Intraday markets.

New ID trading rules are in line with EU legislation (*Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management - CACM Regulation*) and with the subsequent secondary legislation approved by ACER decisions (*ACER Decisions in accordance with CACM Regulation: no. 05/14 November 2017 – applying the provisions of Article 54 - harmonised maximum and minimum clearing prices for all bidding zones participating in the single intraday coupling, no. 4/24 April 2018 applying Article 59 - setting the intraday cross-zonal gate opening and intraday cross-zonal gate closure times, no. 8/26 July 2018 – applying the provisions of Article 37 – adopting the methodology and the common set of requirements for the price coupling algorithm and for the continuous trading matching algorithm*).

Thus, if until the delivery day 19 November 2019, inclusive, the Romanian ID functioned independently of the intraday markets in other countries of the European Union (EU), starting with 15:00 CET of the trading day 19 November 2019, Romanian ID operates coupled with the markets in the other 20 EU countries participating in the European SIDC Project - Single Intra-Day Coupling, formerly known as XBID.

Besides the existing centralized markets, which ensure the transparent, public, centralized and non-discriminatory legal requirements, there 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 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. By the same Law, it was allowed the possibility of aggregating 2 or more producers of electricity from renewable sources regardless of the technology used to participate in the competitive energy markets, by derogation from the provisions of Article 23(1) and Article 28 b) and c) of Law no. 123/2012. As a result, the specific regulatory framework has been modified to reflect the possibility of the aggregate entity's participation in trading on centralized electricity markets.

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.

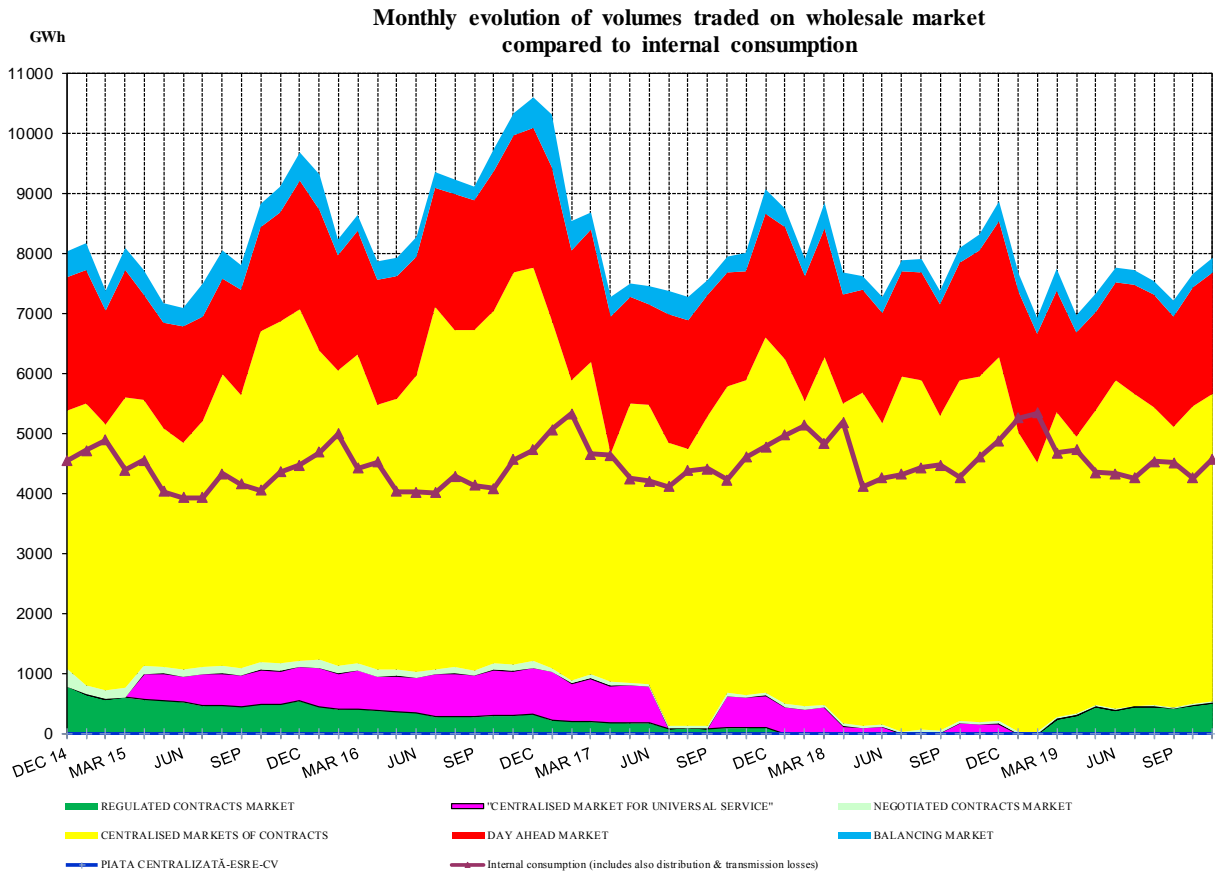
<b>WHOLESALE MARKET TRADES</b>	<b>October 2019</b>	<b>November 2019</b>	<b>November 2018</b>
<b>1. BILATERAL CONTRACTS MARKET</b>			
traded volume (GWh)	<b>492</b>	<b>539</b>	<b>32</b>
average price (lei/MWh)	215.19	217.07	174.20
% from internal consumption (%)	10.8	11.6	0.7
<b>1.1. Sales on regulated contracts</b>			
traded volume (GWh)	<b>475</b>	<b>511</b>	-
average price (lei/MWh)	216.03	219.87	-
% from internal consumption (%)	10.4	11.0	-
<b>1.2. Sales on negotiated contracts<sup>1)</sup></b>			
traded volume (GWh)	<b>16</b>	<b>27</b>	<b>32</b>
average price (lei/MWh)	190.82	164.91	174.20
% from internal consumption (%)	0.4	0.6	0.7
<b>2. EXPORT</b>			
traded volume (GWh) <sup>2)</sup>	<b>170</b>	<b>354</b>	<b>366</b>
average price (lei/MWh)	223.03	186.02	246.50
% from internal consumption (%)	3.7	7.6	7.5
<b>3. CENTRALIZED MARKETS OF BILATERAL CONTRACTS</b>			
traded volume (GWh)	<b>4965</b>	<b>5116</b>	<b>5749</b>
average price (lei/MWh)	248.20	248.97	217.78
% from internal consumption	108.6	109.7	117.9
<b>3.1. Extended auction mechanism CMBC-EA<sup>3)</sup></b>			
traded volume (GWh)	<b>1544</b>	<b>1601</b>	<b>1881</b>
average price (lei/MWh)	241.91	246.49	203.88
% from internal consumption	33.8	34.3	38.6
<b>3.2. Continuous negotiation mechanism CMBC-CN<sup>3)</sup></b>			
traded volume (GWh)	<b>1312</b>	<b>1324</b>	<b>1306</b>
average price (lei/MWh)	234.78	236.97	212.90
% from internal consumption	28.7	28.4	26.8
<b>3.3. CM-OTC mechanism<sup>3)</sup></b>			
traded volume (GWh)	<b>2108</b>	<b>2191</b>	<b>2562</b>
average price (lei/MWh)	261.17	258.03	230.47
% from internal consumption	46.1	47.0	52.5

WHOLESALE MARKET TRADES	October 2019	November 2019	November 2018
<b>3.4. CME-RES-GC</b>			
traded volume (GWh)	<b>0.65</b>	<b>0.2</b>	
average price (lei/MWh)	254.4	249.2	-
% from internal consumption	0.014	0.004	
<b>4. CENTRALIZED MARKET FOR UNIVERSAL SERVICE - CMUS</b>			
traded volume (GWh)	<b>0.00</b>	<b>0.00</b>	<b>158</b>
average price (lei/MWh)	0.00	0.00	256.36
% from internal consumption	0.00	0.00	3.2
<b>5. DAY AHEAD MARKET</b>			
traded volume (GWh)	<b>1976</b>	<b>2019</b>	<b>2105</b>
average price (lei/MWh) <sup>4)</sup>	272.67	203.53	282.48
% from internal consumption	43.2	43.3	43.2
<b>6. INTRADAY MARKET</b>			
traded volume (GWh)	<b>24</b>	<b>35</b>	<b>5.8</b>
average price (lei/MWh) <sup>5)</sup>	133.61	151.10	131.09
% from internal consumption	0.5	0.7	0.1
<b>7. BALANCING MARKET</b>			
traded volume (GWh)	<b>236</b>	<b>252</b>	<b>263</b>
% from internal consumption	5.2	5.4	5.4
upward volume (GWh)	<b>56</b>	<b>59</b>	<b>189</b>
average price for negative imbalance (lei/MWh)	663.78	556.18	682.27
downward volume (GWh)	<b>181</b>	<b>193</b>	<b>74</b>
average price for positive imbalance (lei/MWh)	10.81	5.64	36.66
<b>INTERNAL CONSUMPTION (GWh)</b> <i>(distribution and transmission losses included)</i>	<b>4573</b>	<b>4663</b>	<b>4877</b>

- 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 Tranelectrica 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 a weighted average of the hourly closing prices with the traded volumes was 211.60 lei/MWh in November 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.

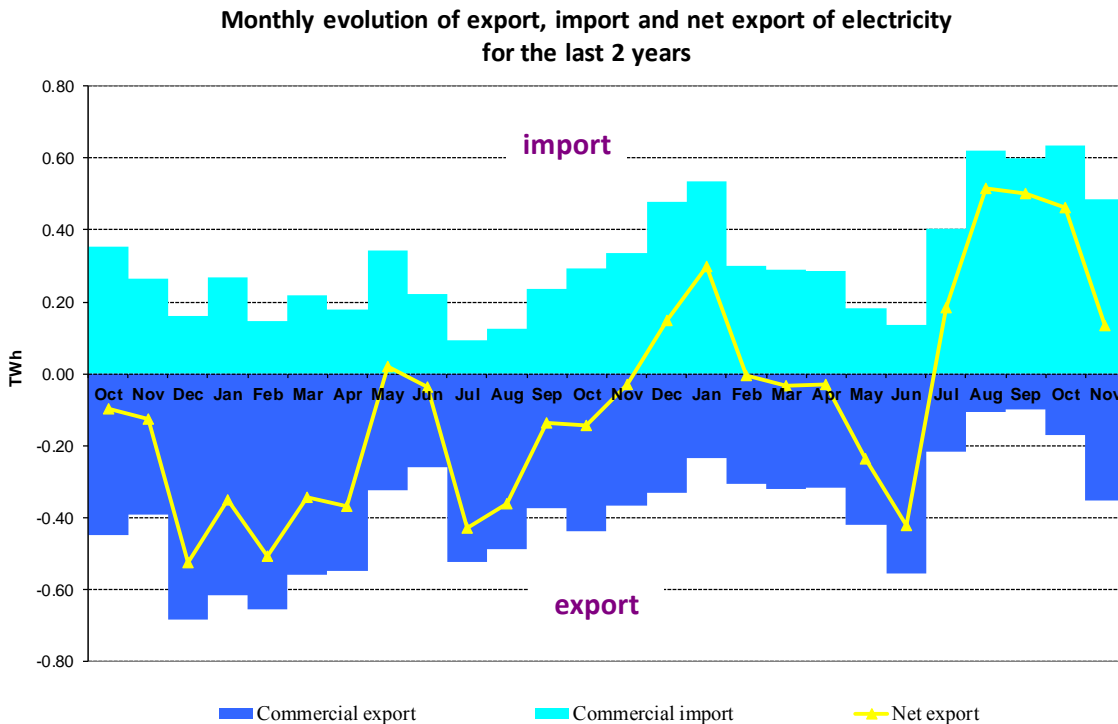
The following graph presents the evolution of the relation between the volumes sold on each market and the estimated internal consumption for the period December 2014 – November 2019:



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

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

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

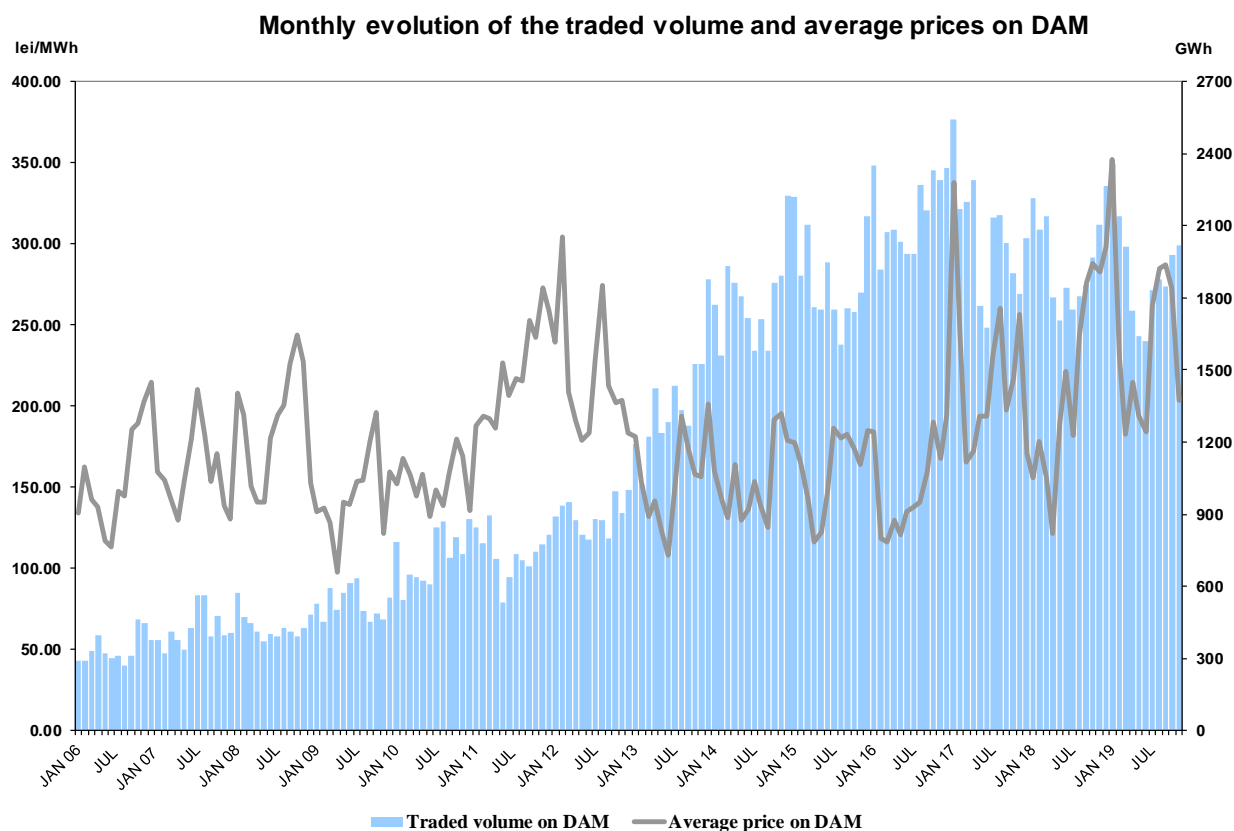


Source: Monthly reports of CNTEE Transelectrica SA – Electricity Market Monitoring Unit assessment

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.

<b>Import/Export Trades</b>	<b>October 2019</b>	<b>November 2019</b>	<b>November 2018</b>
<b>Export</b>			
traded volume (GWh)	<b>170</b>	<b>354</b>	<b>366</b>
average price (lei/MWh)	223.03	186.02	246.51
% from internal consumption	3.7	7.6	7.5
<b>of which, through coupled DAM</b>			
traded volume (GWh)	<b>44</b>	<b>117</b>	<b>113</b>
average price (lei/MWh)	246.26	173.87	223.57
% from internal consumption	1.0	2.51	2.3
<b>of which, through coupled ID</b>			
volum tranzacționat (GWh)		<b>1.56</b>	
preț mediu (lei/MWh)	-	178.44	-
% din consumul intern		0.03	
<b>Import</b>			
traded volume (GWh)	<b>634</b>	<b>487</b>	<b>334</b>
average price (lei/MWh)	286.80	233.66	305.41
% from internal consumption	13.9	10.4	6.9
<b>of which, through coupled DAM</b>			
traded volume (GWh)	<b>141</b>	<b>80</b>	<b>113</b>
average price (lei/MWh)	285.55	239.79	344.65
% from internal consumption	3.1	1.7	2.3
<b>of which, through coupled ID</b>			
traded volume (GWh)		<b>3</b>	
average price (lei/MWh)	-	208.56	-
% from internal consumption		0.06	

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



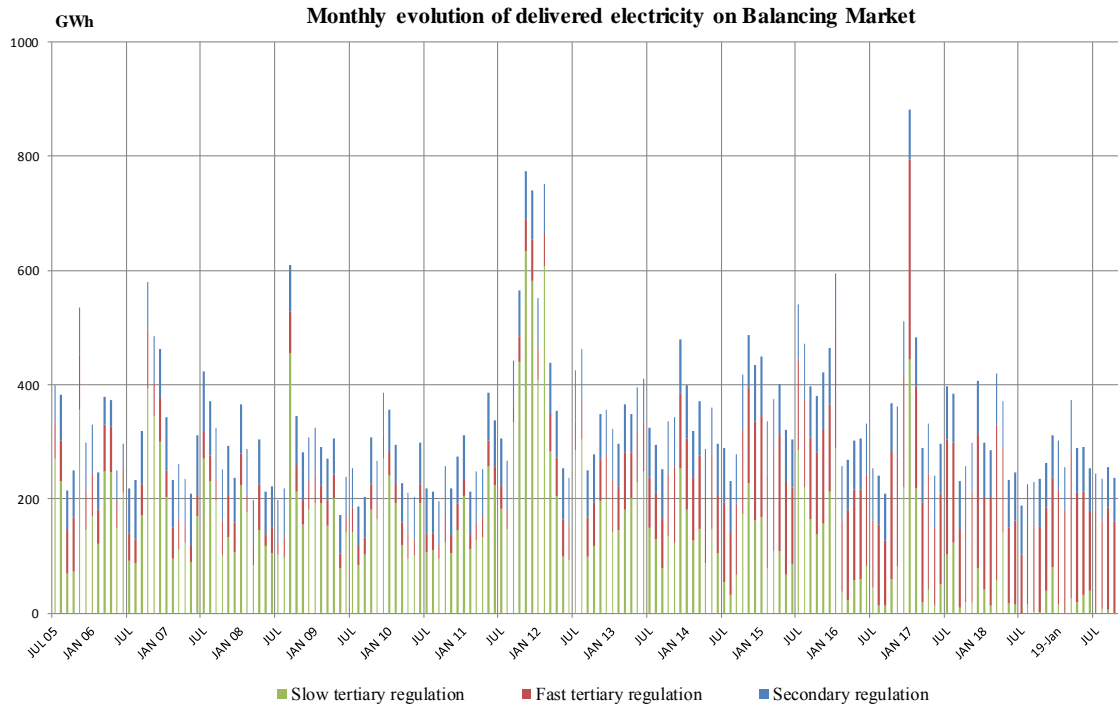
Source: Monthly reports of Opcom SA and CNTEE Tranelectrica SA – Electricity Market Monitoring Unit assessment

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 November 2019 is presented in the following table:

November 2019	Dispatch order (GWh)	Delivered electricity (GWh)	Deviation (%)
<b>Secondary regulation</b>	<b>79</b>	<b>79</b>	
<i>upward</i>	26	26	
<i>downward</i>	53	53	
<b>Fast tertiary regulation</b>	<b>180</b>	<b>173</b>	<b>4</b>
<i>upward</i>	34	33	3
<i>downward</i>	146	140	4
<b>Slow tertiary regulation</b>	<b>0</b>	<b>0</b>	<b>0</b>
<i>upward</i>	0	0	0
<i>downward</i>	0	0	0
<b>TOTAL</b>	<b>259</b>	<b>252</b>	
<i>upward</i>	60	59	
<i>downward</i>	199	193	
<b>INTERNAL CONSUMPTION</b>		<b>4663</b>	
<i>% share of traded volumes from internal consumption</i>		<i>5.4%</i>	

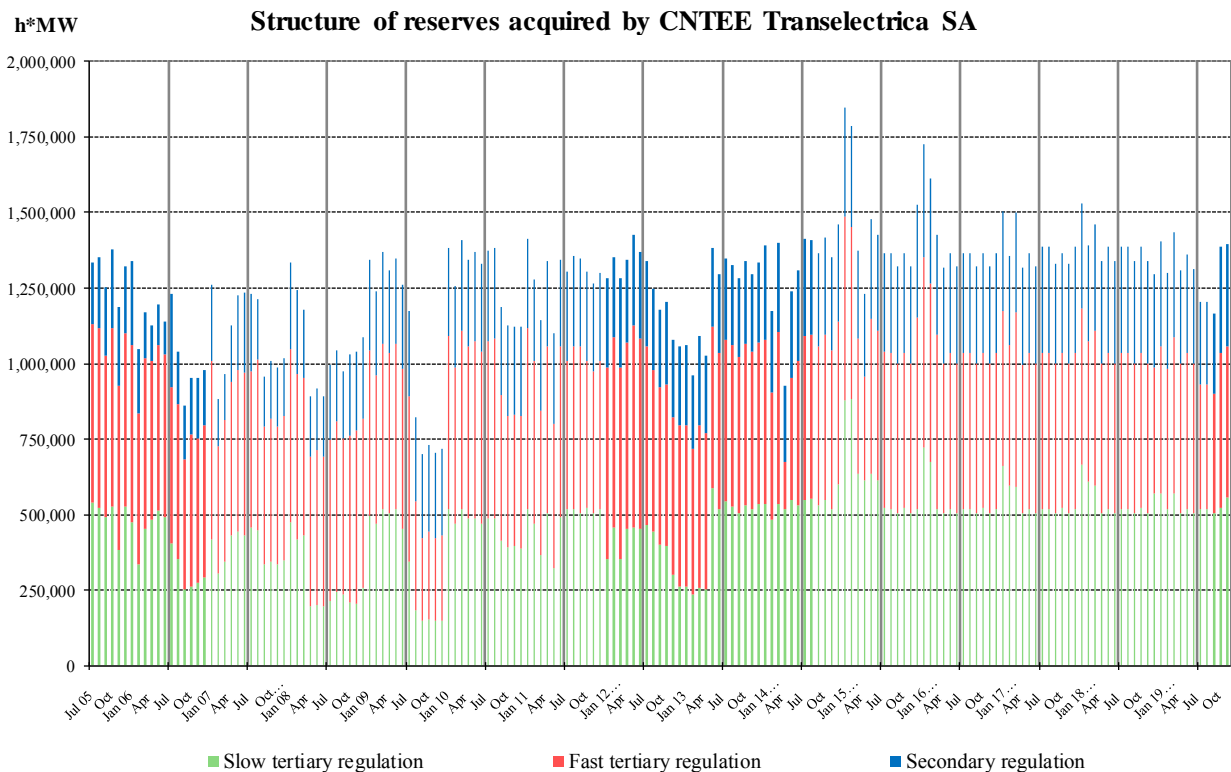
Source: Monthly reports of CNTEE Tranelectrica SA – Electricity Market Monitoring Unit assessment

The structure of the balancing electricity delivered in the system on each type of regulation between July 2005 – November 2019 is presented in the graph below:



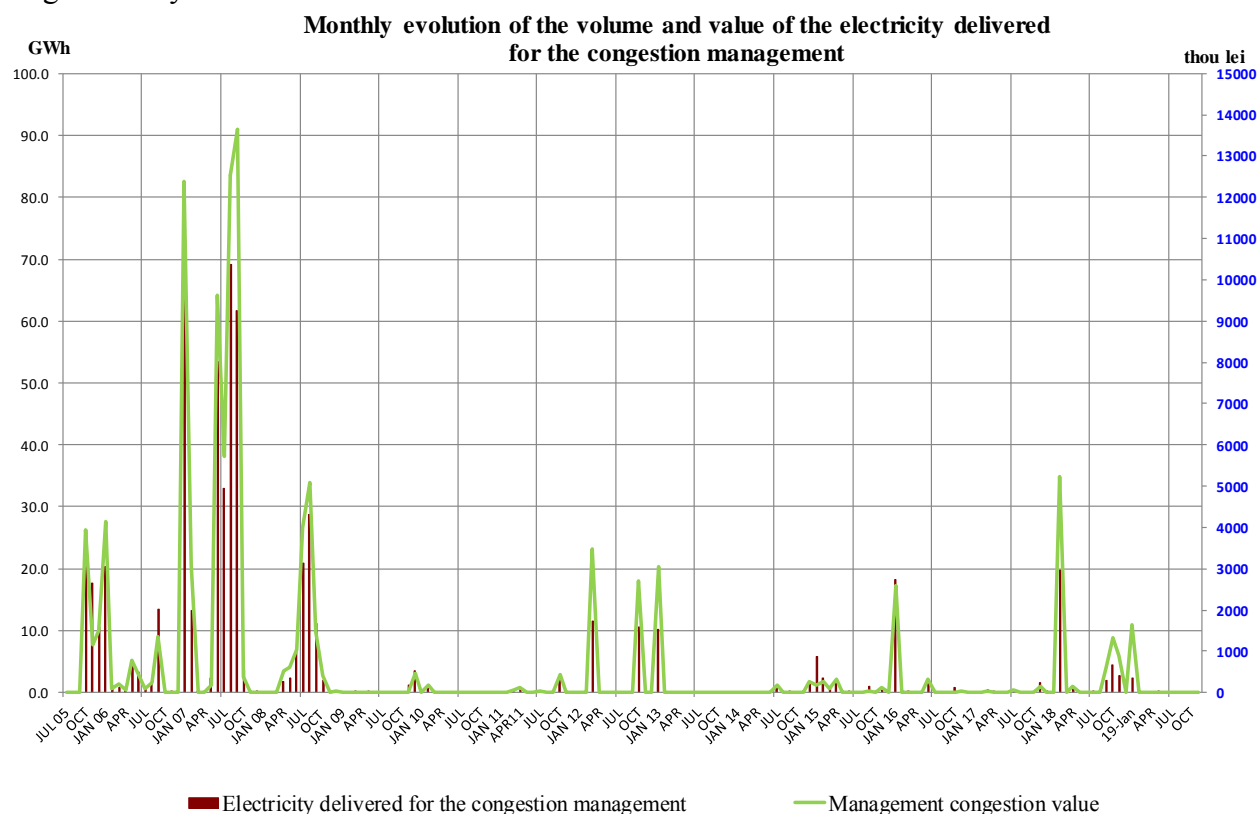
Source: Monthly reports of CNTEE Tranelectrica SA – Electricity Market Monitoring Unit assessment

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



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

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



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

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

### Producers

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

Trade type	November 2018	November 2019
Thermal, hydro and nuclear producers, regulated contracts with last resort suppliers	-	511.43
Negotiated contracts, to suppliers	32.30	27.39
Contracts concluded on the Opcom centralized markets:	3760.76	2915.48
<i>CMBC-EA</i>	<i>1757.13</i>	<i>1454.96</i>
<i>CMBC-CN</i>	<i>955.88</i>	<i>801.31</i>
<i>CM-OTC</i>	<i>1047.75</i>	<i>659.04</i>
<i>CME-RES-GC</i>	-	<i>0.18</i>
CMUS	72.00	0.00
DAM	1290.00	1318.96
ID	3.19	28.54
Supply contracts to final customers, out of which:	404.86*	325.79
<i>Households</i>	<i>0.34</i>	<i>0.28</i>
<i>Non-households</i>	<i>404.52*</i>	<i>325.51</i>
<b>Total</b>	<b>5563.10*</b>	<b>5127.60</b>

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

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

## Suppliers

In November 2019, 94 undertakings having as the main activity that of electricity supply were active on the electricity market; out of these, 32 are suppliers that only operate on the wholesale electricity market (some of which have a license for electricity trading) and 62 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

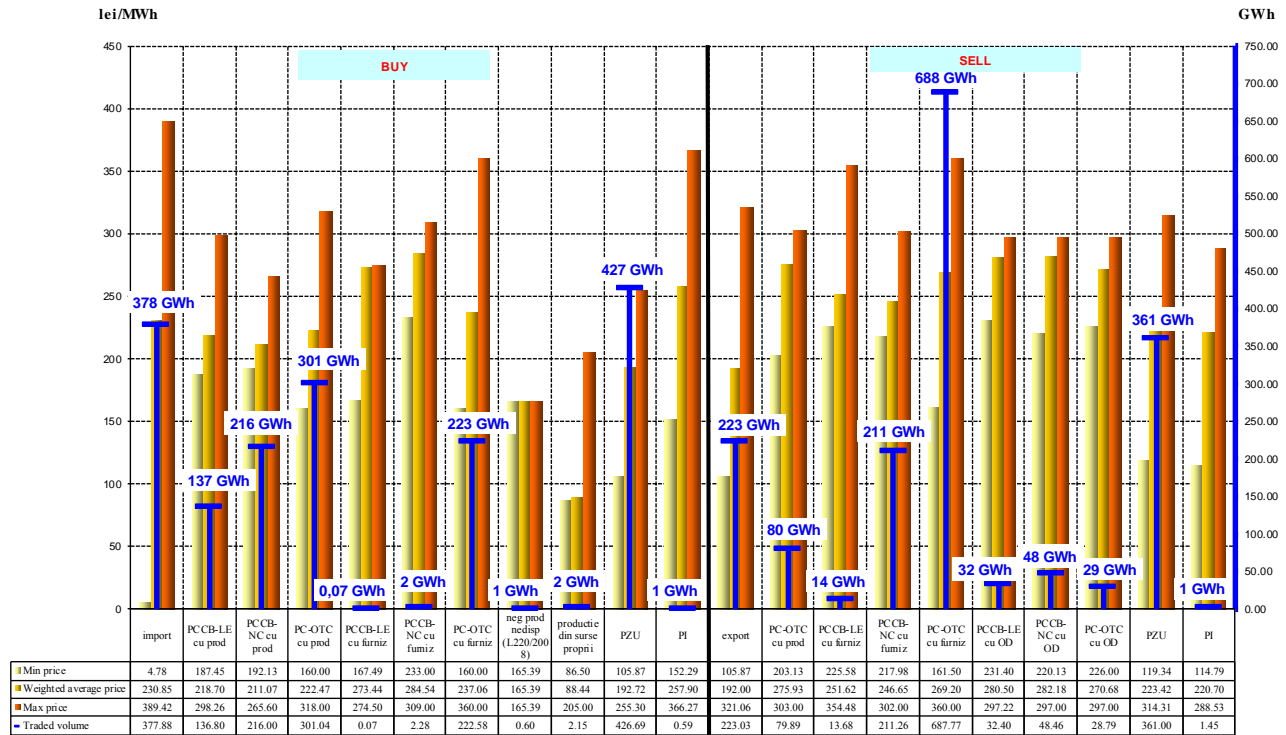
The following table illustrates the activity carried out by suppliers active only on WEM, presenting the structure by market segments/participants of the total acquisitions and sales made by these suppliers in November 2019, compared to the similar period in 2018:

	-GWh-	
Trades structure of suppliers acting exclusively on WEM	November 2018	November 2019
<b>Buy</b>		
Import	165.07	377.88
Negotiated trades with producers	11.69	0.00
Contracts concluded on Opcom centralized markets, out of which:	1319.93	878.77
- on CMBC-EA with producers	82.96	136.80
- on CMBC-CN with producers	224.59	216.00
- on CM-OTC with producers	572.64	301.04
- on CMBC-EA with other suppliers	0.00	0.07
- on CMBC-CN with other suppliers	10.80	2.28
- on CM-OTC with other suppliers	428.93	222.58
production from own sources	1.63	2.15
DAM	317.63	426.69
ID	0.00	0.59
<b>Sell</b>		
Export	242.77	223.03
Contracts concluded on Opcom centralized markets, out of which:	973.81	1102.24
- on CM-OTC with producers	39.58	79.89
- on CMBC-EA with other suppliers	9.36	13.68
- on CMBC-CN with other suppliers	165.87	211.26
- on CM-OTC with other suppliers	710.53	687.77
- on CMBC-EA with DO	3.60	32.40
- on CMBC-CN with DO	26.88	48.46
- on CM-OTC with DO	17.99	28.79
CMUS with last resort suppliers	81.62	0.00
DAM	520.22	361.00
ID	0.61	1.45

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 November 2019.

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



Source: Monthly reports of 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 acquisitions and sales made by these market participants in November 2019 compared with the similar period of 2018:

	-GWh -	
Trades' structure of suppliers acting on REM (suppliers of last resort not included)	November 2018	November 2019
<b>Buy</b>		
Import	55.86	23.76
Negotiated trades with producers	23.40	27.50
Trades concluded on Opcom centralized markets, out of which:	2116.67	1947.69
- on CMBC-EA with producers	962.44	579.47
- on CMBC-CN with producers	364.20	370.87
- on CM-OTC with producers	198.28	197.82
- on CMBC-EA with other suppliers	46.56	33.83
- on CMBC-CN with other suppliers	110.25	159.15
- on CM-OTC with other suppliers	434.94	605.54
- on CME-RES-GC with producers	-	1.01
production from own sources	9.81	11.86
Negotiated trades with non-dispatchable producers (others than under Law 220/2008)*	3.96	4.34
Negotiated trades with non-dispatchable producers (amendments and additions to Law 220/2008)**	9.97	13.67
Trades with prosumers	-	0.004
DAM	331.26	601.09
ID	4.06	27.43

Trades' structure of suppliers acting on REM (not including suppliers of last resort)	November 2018	November 2019
<b>Sell</b>		
Export	10.00	12.33
Trades concluded on Opcom centralized markets, out of which:	969.36	1062.73
- on CMBC-EA with producers	5.54	0.00
- on CMBC-CN with producers	16.90	27.36
- on CM-OTC with producers	25.80	51.86
- on CMBC-EA with other suppliers	69.59	60.54
- on CMBC-CN with other suppliers	111.18	138.08
- on CM-OTC with other suppliers	663.68	596.48
- on CMBC-EA with DO	18.00	32.40
- on CMBC-CN with DO	29.39	75.89
- on CMBC-OTC with DO	11.51	65.73
- on CMBC-EA with TSO	17.78	7.20
- on CMBC-CN with TSO	0.00	7.20
CMUS with last resort suppliers	4.80	0.00
DAM	59.23	75.48
ID	0.48	0.69
Households	25.81	27.12
Non-households	1484.38	1450.05

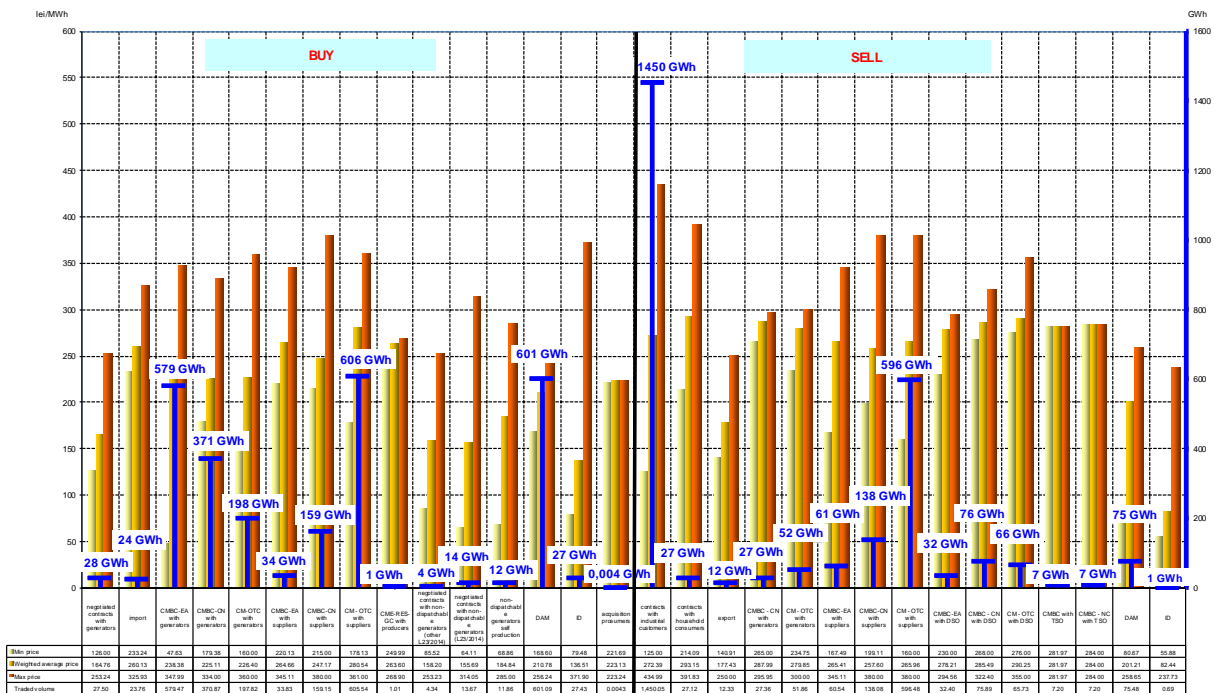
Source: Monthly reports of the competitive suppliers – Electricity Market Monitoring Unit assessment

Note: \*negotiated trades with non-dispatchable producers that do not fall under the provisions of Law no. 220/2008, with subsequent modifications and additions.

\*\* negotiated trades with non-dispatchable producers that fall under the provisions of Law no. 220/2008, with subsequent modifications and additions. The differences with November 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, highest and lowest prices for November 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 - NOVEMBER 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 November 2019, compared with the similar period of 2018:

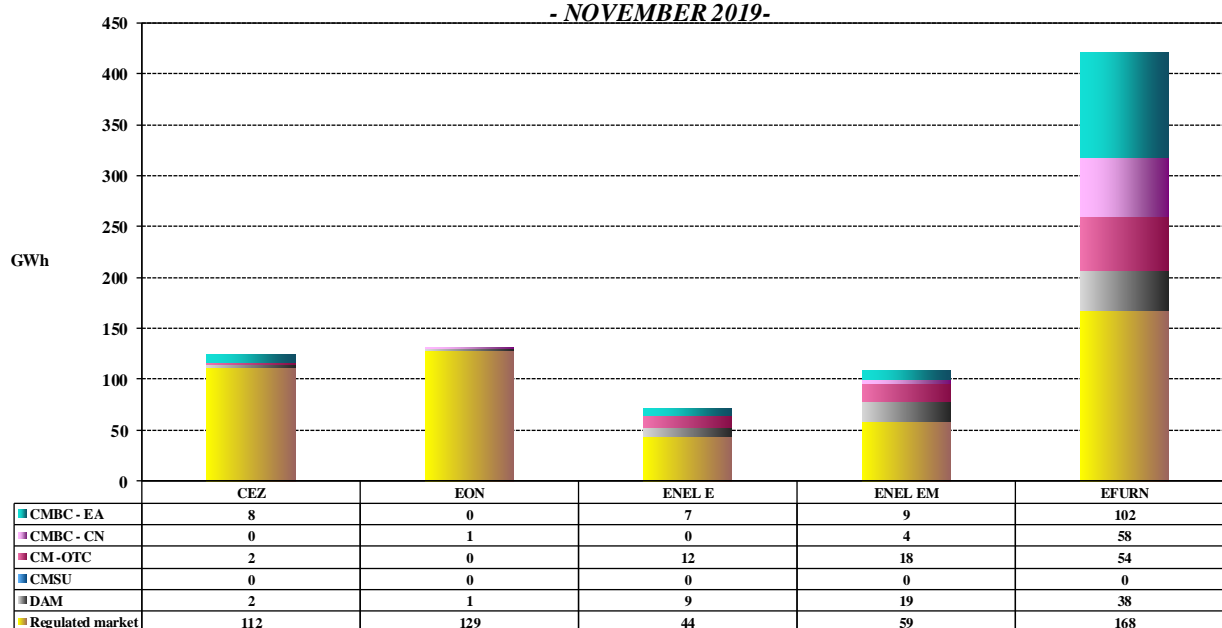
- GWh -

Structure of trades concluded by suppliers of last resort to supply final clients (regulated, Universal Service and last resort regime and inactive clients)	November 2018	November 2019
Regulated contracts with producers	-	511.43
Negotiated trades with non-dispatchable producers (changes and additions to Law 220/2008)*	0.004	0.0004
Trades concluded on Opcom centralized markets, out of which:	457.31	275.34
- trades on CMBC-EA with producers	124.14	115.37
- trades on CMBC-CN with producers	33.13	21.78
- trades on CM-OTC with producers	42.69	14.70
- trades on CMBC-EA with other suppliers	13.82	10.95
- trades on CMBC-CN with other suppliers	73.78	41.61
- trades on CM-OTC with other suppliers	169.74	70.94
Trades with prosumers	-	0.02
Trades on CMUS:	158.42	0.00
- trades on CMUS with producers	72.00	0.00
- trades on CMUS with suppliers	86.42	0.00
Trades concluded on DAM:	197.79	-23.65
- buy	226.16	69.28
- sell	28.37	92.93
Trades concluded on ID:	0.11	-0.001
- buy	0.11	0.00
- sell	0.00	0.001

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 November 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)  
- NOVEMBER 2019-



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

In accordance with the *Regulation for competitive selection to designate suppliers of last resort*, approved by ANRE Order no. 26/2018 and amended by ANRE Order no. 17/2019, ANRE has designated as obligated suppliers of last resort for each network area, until 30 June 2022, the following suppliers: 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, for different network areas, the following suppliers: 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. 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 households 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 at 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 bills of household and non-household final clients from their portfolio, the following types of approved tariffs/ authorised 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 households, *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 fulfil the conditions or did not request to be supplied under the Universal Service regime and the *last resort price* to non-household final clients supplied by the obligated suppliers of last resort because of not having secured the supply from any other source.

*Universal Service price* and *inactive clients price* are calculated by adding the electricity acquisition components and the supply component for that client category, to which is also 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 households 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 ANRE Order no. 10/2019, in order to ensure the consumption of households 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 set (by decision, for the period between 1 March 2019 – 31 December 2019) obligations to sell fixed quantities at a regulated price. Suppliers of last resort ensure households 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 estimated 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 November 2019, compared with the similar period of 2018:

-GWh-

Trades' structure of suppliers of last resort for Universal Service/regulated supply	November 2018		November 2019	
	Quantity [GWh]	Average price [lei/MWh]	Quantity [GWh]	Average price [lei/MWh]
Regulated contracts with producers	-	-	511.43	219.87
Trades on Opcom centralized markets:	419.27	235.29	225.28	251.19
- trades on CMBC-EA with producers	120.16	216.98	96.82	249.55
- trades on CMBC-CN with producers	30.10	216.43	21.60	218.96
- trades on CM-OTC with producers	38.97	248.37	7.20	259.00
- trades on CMBC-EA with other suppliers	13.68	228.37	10.80	240.11
- trades on CMBC-CN with other suppliers	73.65	243.25	38.16	264.68
- trades on CM-OTC with other suppliers	142.71	247.65	50.70	259.18
Trades with prosumers	-	-	0.01	223.22
Trades on CMUS, out of which:	158.42	256.36	0.00	0.00
- with producers	72.00	241.44	0.00	0.00
- with other suppliers	86.42	268.79	0.00	0.00
Trades on DAM:	177.88	-	-38.54	-
- buy	204.16	333.45	53.56	238.14
- sell	26.28	237.37	92.10	199.67
Trades concluded on ID:	0.05	-	-0.0011	-
- buy	0.05	522.00	0.00	0.00
- sell	0.00	0.00	0.0011	30.40
<b>TOTAL</b>	<b>755.62</b>	<b>266.18</b>	<b>698.18</b>	<b>234.04</b>

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 November 2019 is shown in the following table:

- GWh -

Trades' structure of suppliers of last resort to supply inactive clients	November 2019	
	Quantity [GWh]	Average price [lei/MWh]
Negotiated contracts with non-dispatchable producers (changes, additions to Law 220/2008)*	0.0004	179.22
Trades on centralized contracts markets:	46.62	263.18
- on CMBC-EA with producers	18.55	247.52
- on CMBC-CN with producers	0.17	237.75
- on CM-OTC with producers	5.86	259.93
- on CMBC-EA with other suppliers	0.15	301.23
- on CMBC-CN with other suppliers	3.45	270.09
- on CM-OTC with other suppliers	18.43	278.62
Trades with prosumers	0.002	222.70
Trades on DAM, of which:	13.96	232.87
- buy	14.61	228.57
- sell	0.65	136.21
<b>TOTAL</b>	<b>60.58</b>	<b>256.19</b>

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

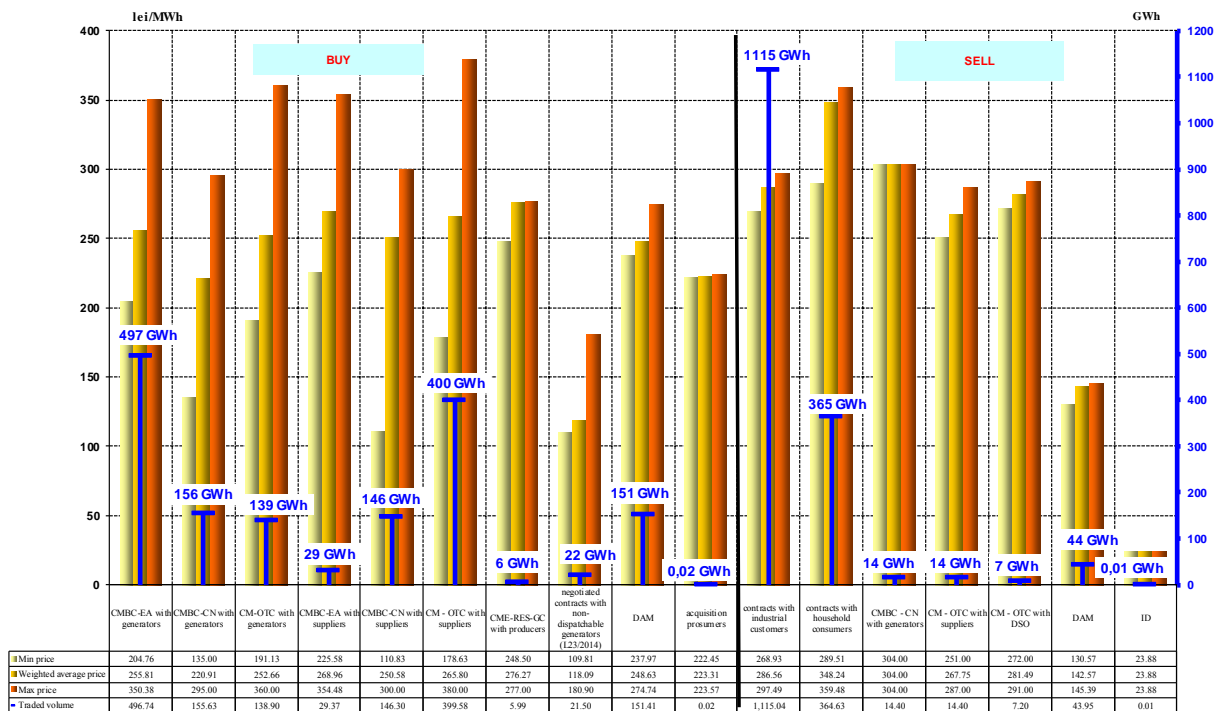
The following table presents the electricity acquisition structure of suppliers of last resort before the delivery interval, corresponding to the competitive segment of REM for November 2019, compared to the similar period of 2018:

	<b>-GWh-</b>	
<b>Structure of trades made by suppliers of last resort for the competitive segment of REM</b>	<b>November 2018</b>	<b>November 2019</b>
<b>Buy</b>		
Trades on centralized contracts markets, of which:	1336.75	1372.51
- on CMBC-EA with producers	401.35	496.74
- on CMBC-CN with producers	228.78	155.63
- on CM-OTC with producers	219.88	138.90
- on CMBC-EA with other suppliers	18.57	29.37
- on CMBC-CN with other suppliers	82.21	146.30
- on CM-OTC with other suppliers	385.96	399.58
- on CME-RES-GC with producers	-	5.99
Negotiated trades with non-dispatchable producers (amendments, additions to Law 220/2008)*	19.10	21.50
Trades with prosumers	-	0.02
Trades on DAM	159.93	151.41
Trades on ID	0.16	0.00
<b>Sell</b>		
Trades on centralized contracts markets:	45.36	36.00
- on CMBC-CN with producers	0.00	14.40
- on CM-OTC with other suppliers	45.36	14.40
- on CM-OTC with DO	0.00	7.20
Trades on DAM	51.94	43.95
Trades on ID	0.00	0.01
Households	300.82	364.63
Non-households	1161.61	1115.04

*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 November 2019:

**Trades made by suppliers of last resort for the REM - competitive segment  
- NOVEMBER 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 November 2019 compared with the similar previous period:

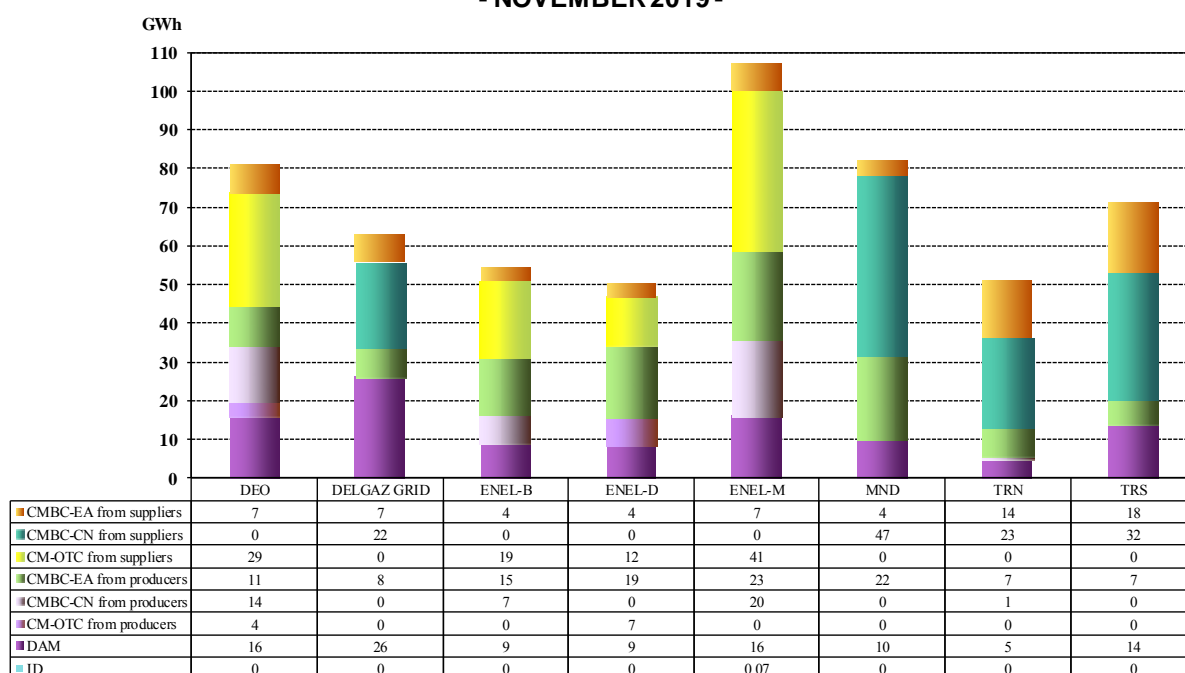
- GWh -

Structure of trades	November 2018	November 2019
Trades on centralized contracts markets:	401.98	454.86
- CMBC-EA with producers	197.59	110.91
- CMBC-CN with producers	82.79	42.29
- CM-OTC with producers	14.24	10.81
- CMBC-EA with suppliers	21.60	64.80
- CMBC-CN with suppliers	56.27	124.35
- CM-OTC with suppliers	29.50	101.71
Trades on DAM	178.77	97.88
- buy	179.09	104.53
- sell	0.32	6.64
Trades on ID:	0.11	0.07
- buy	0.11	0.07
- 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 November 2019 is presented in the following graph:

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



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

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

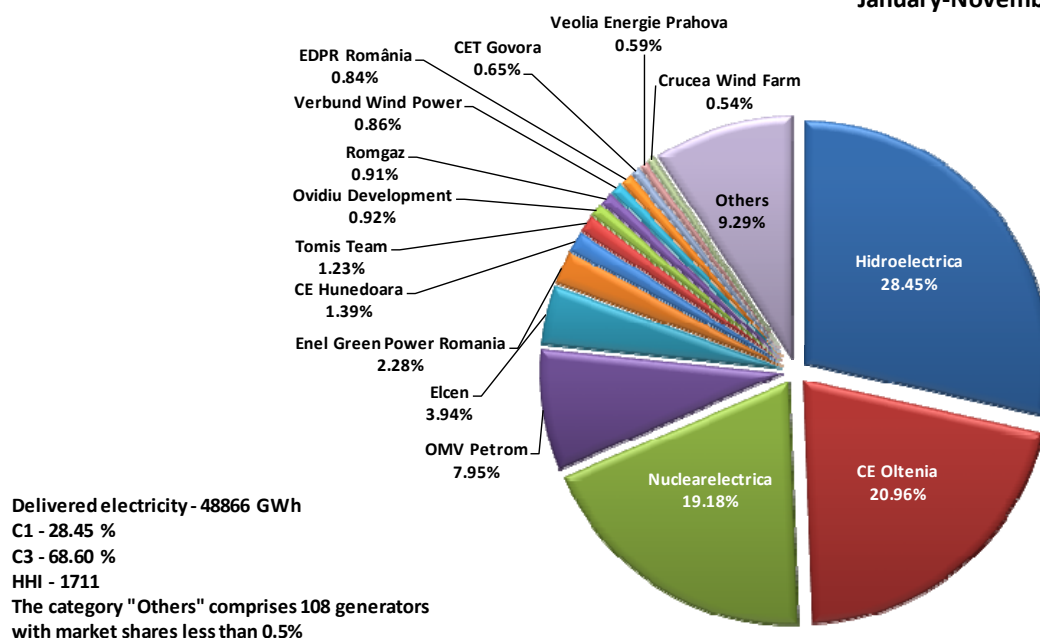
### Concentration indicators and market shares of electricity producers

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 November 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 - November 2019 -	C1 (%)	C3 (%)	HHI
Value	20.45	60.21	1372

Market share of producers with dispatchable generation units by the electricity delivered into the networks.  
January-November 2019



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

A component of the WEM on which direct competition between producers is displayed is the Balancing Market (BM). The values of concentration indicators on this market for November 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 - November 2019 -	Regulation					
	Secondary		Fast tertiary		Slow tertiary	
	upward	downward	upward	downward	upward	downward
C1 - % -	64	64	51	42	0	0
C3 - % -	99	99	93	93	0	0
HHI	4871	4901	4208	3283	0	0

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

In accordance with the provisions of Government Ordinance no. 593/2019 and Emergency Government Ordinance no. 26/2018 on the adoption of measures for the safety and security of the electricity supply of NPS, ANRE President Decision no. 1851/2019 was issued regarding the acquisition at a regulated price for the period between 1 November 2019 – 31 March 2020 from the producer Electrocentrale Galati SA of a quantity of ancillary services representing slow tertiary reserve for a capacity of 77 MW and 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, are shown the concentration indicators by types of reserves (secondary, fast tertiary and slow tertiary).

Concentration indicators on Ancillary Services Market - November 2019 -		Secondary reserve	Fast tertiary reserve	Slow tertiary reserve
regulated component	contracted quantity (h*MW)	-	-	343440
	C1 (%)	-	-	83.9
	C3 (%)	-	-	100.0
competitive component	contracted quantity (h*MW)	339000	498000	216000
	C1 (%)	68.7	84.0	51.3
	C3 (%)	98.6	94.8	100.0
	HHI	5461	7132	3886

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, open for both buying and selling, for all license holders and for foreign undertakings 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 - November 2019 -	C1 (%)	C3 (%)	HHI
Selling	24.93	37.76	811
Buying	19.33	37.22	687

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 correlation 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 successfully implementing the changes and tests performed, OPCOM operates in its own name the coupling solution implemented in the 4M MC operational mechanism, all processes being performed under the security conditions of the coupled functioning of the day-ahead markets. Coupling operators are acting as *Coordinators* on a monthly rotation basis.

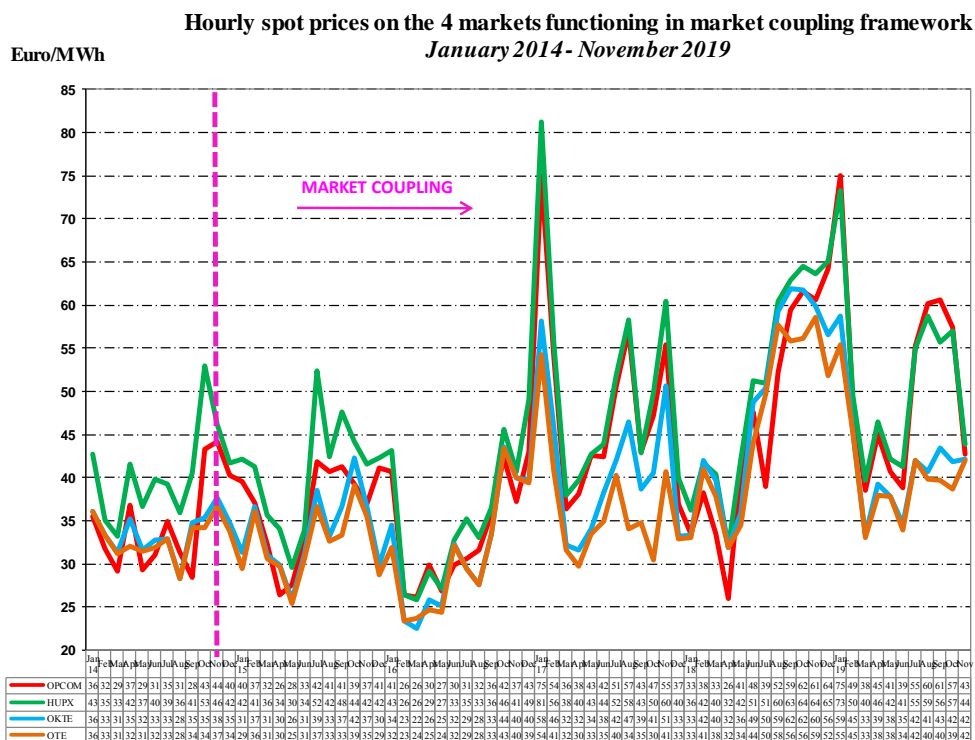
According to EU legislation, coordinated cross-border capacity allocation is under the governance of the TSOs from the 4 countries and the allocation model used is that of implicit allocation on DAM of the available interconnection capacity.

To better meet the purpose of the DAM coupling mechanism, respectively the electricity transfers 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.

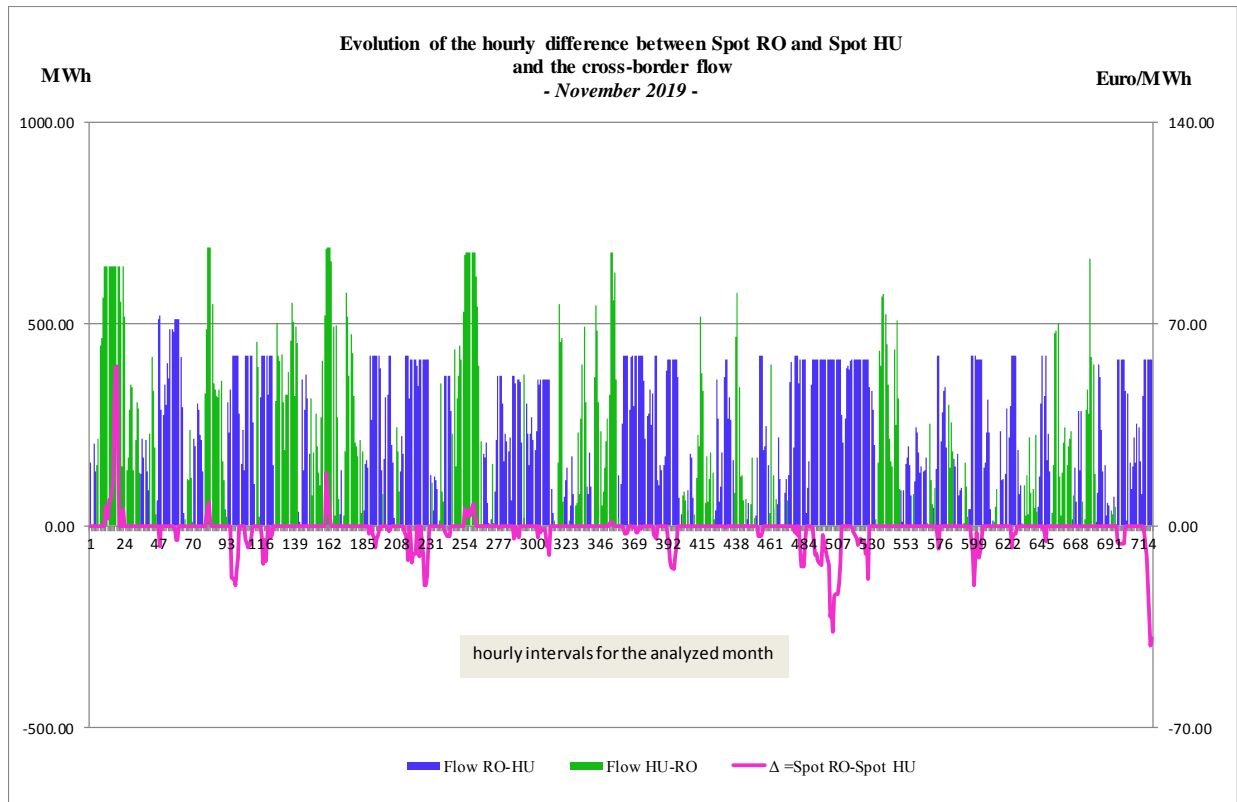
Particularly, for the Hungarian border, if 80% of the lowest value of the ATC calculated monthly for sub-periods is lower than 80 MW, interconnection capacity for monthly allocation will be 80% from the ATC calculated for each sub-period, to which is added the allocated capacity at the yearly auction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



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

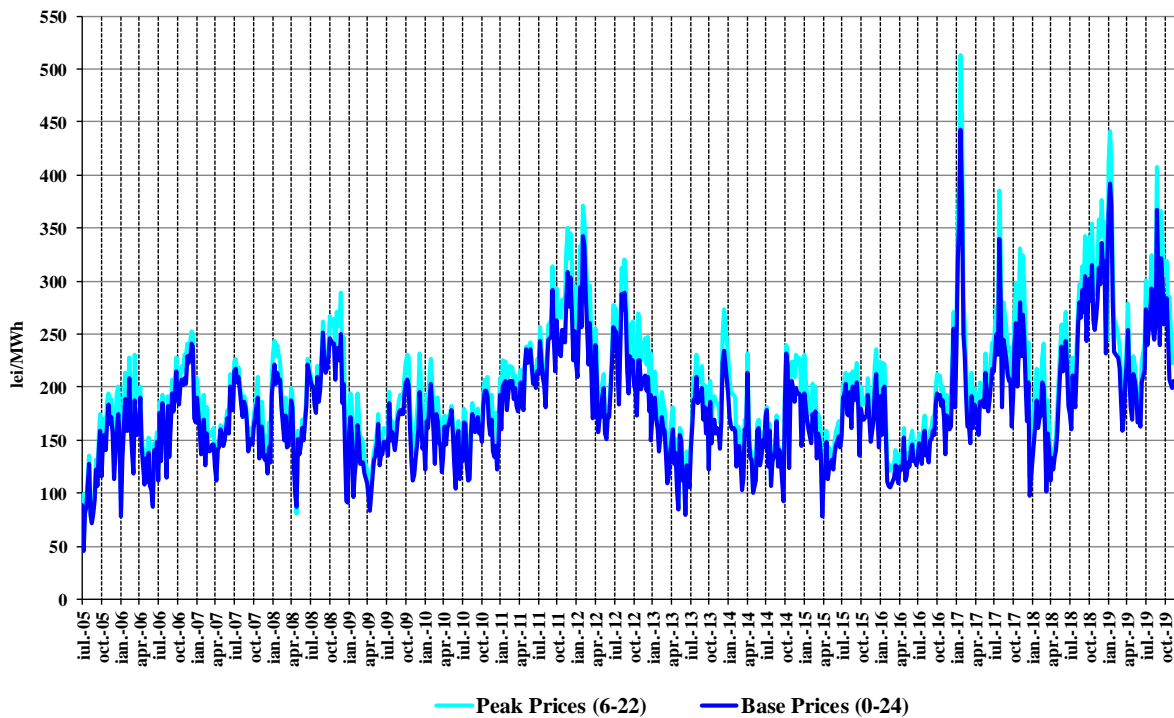
Next, the following graph presents the hourly evolution of the difference between the closing prices of the coupled DAM on the Romanian and Hungarian area, correlated with the cross-border flows on the Romanian – Hungarian border, on both directions, for November 2019.



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:

**Weekly average spot prices  
July 2005 - November 2019**



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.

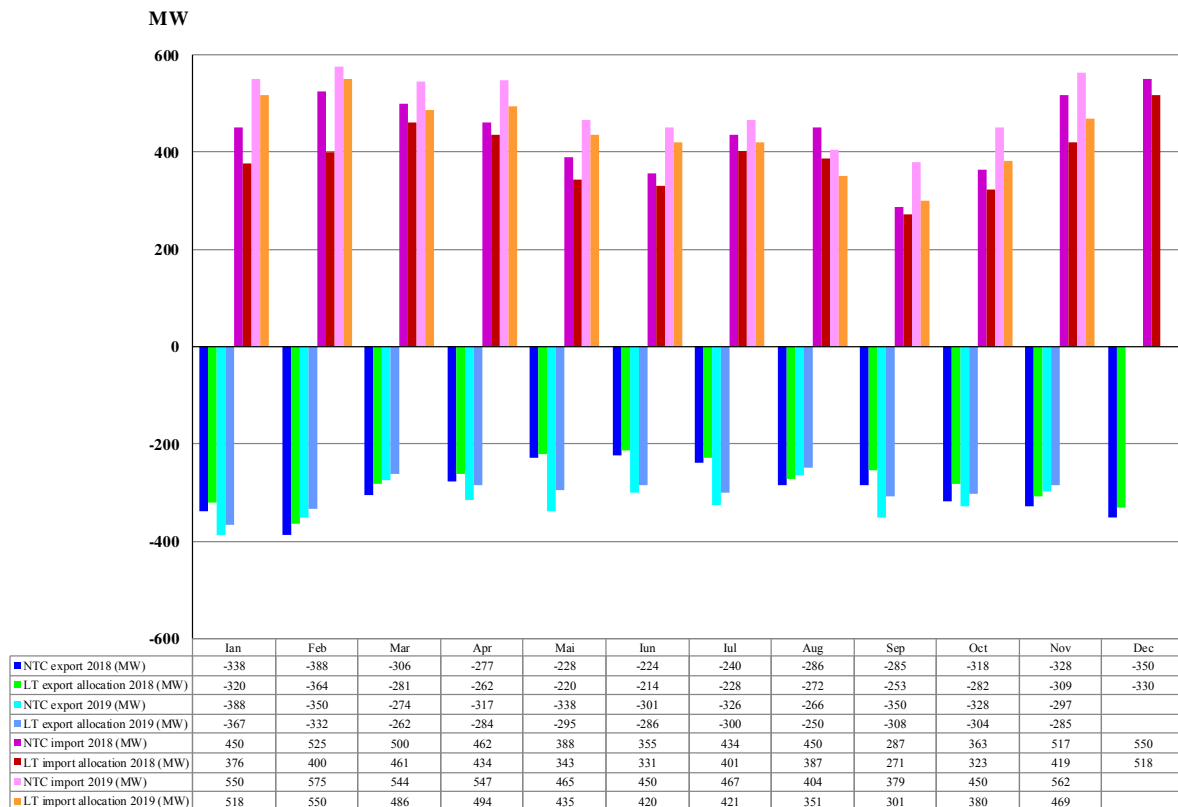
On the border with Ukraine the allocation is made by CNTEE Transelectrica SA through auctions for annual and monthly allocation, the use of interconnection capacities depending on the written agreement of Ukrenergo (Ukraine TSO).

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 neighbouring 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



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

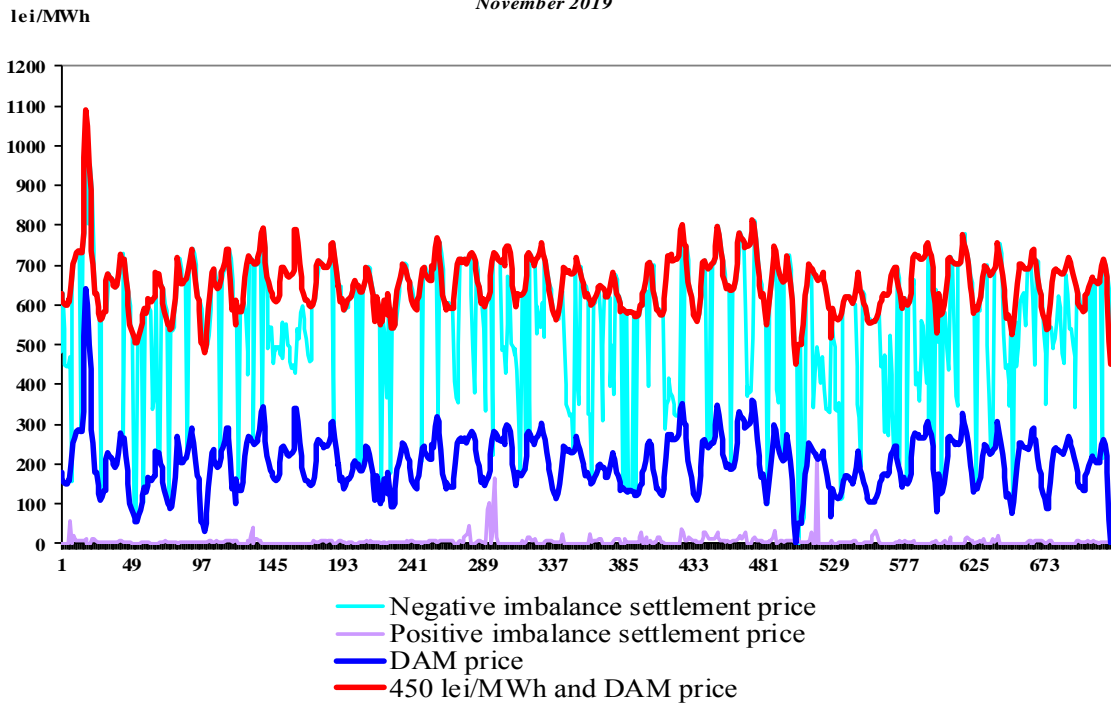
In order to cover the differences between planned/contracted values of consumption and generation and their values in real time, the system operator (CNTEE Transelectrica SA) operates the balancing market (BM), "buying" or "selling" electricity at prices determined by the merit order of dispatchable 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.

**Hourly settlement prices**

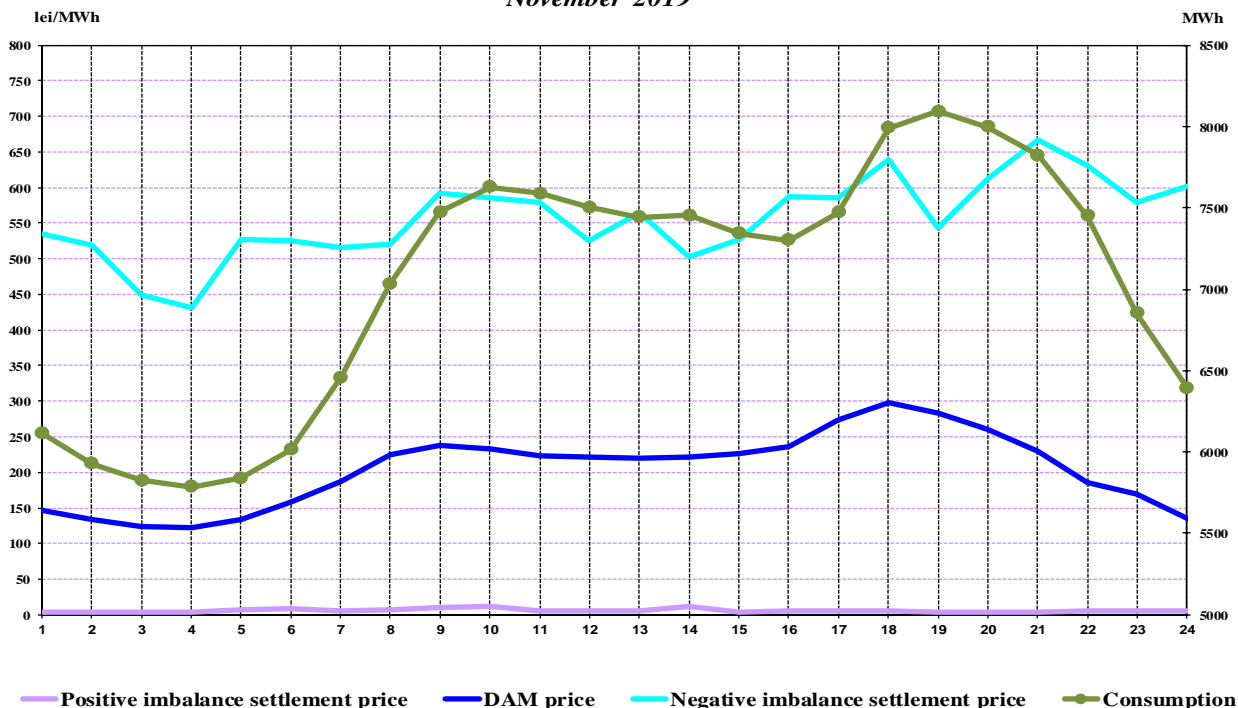
November 2019



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

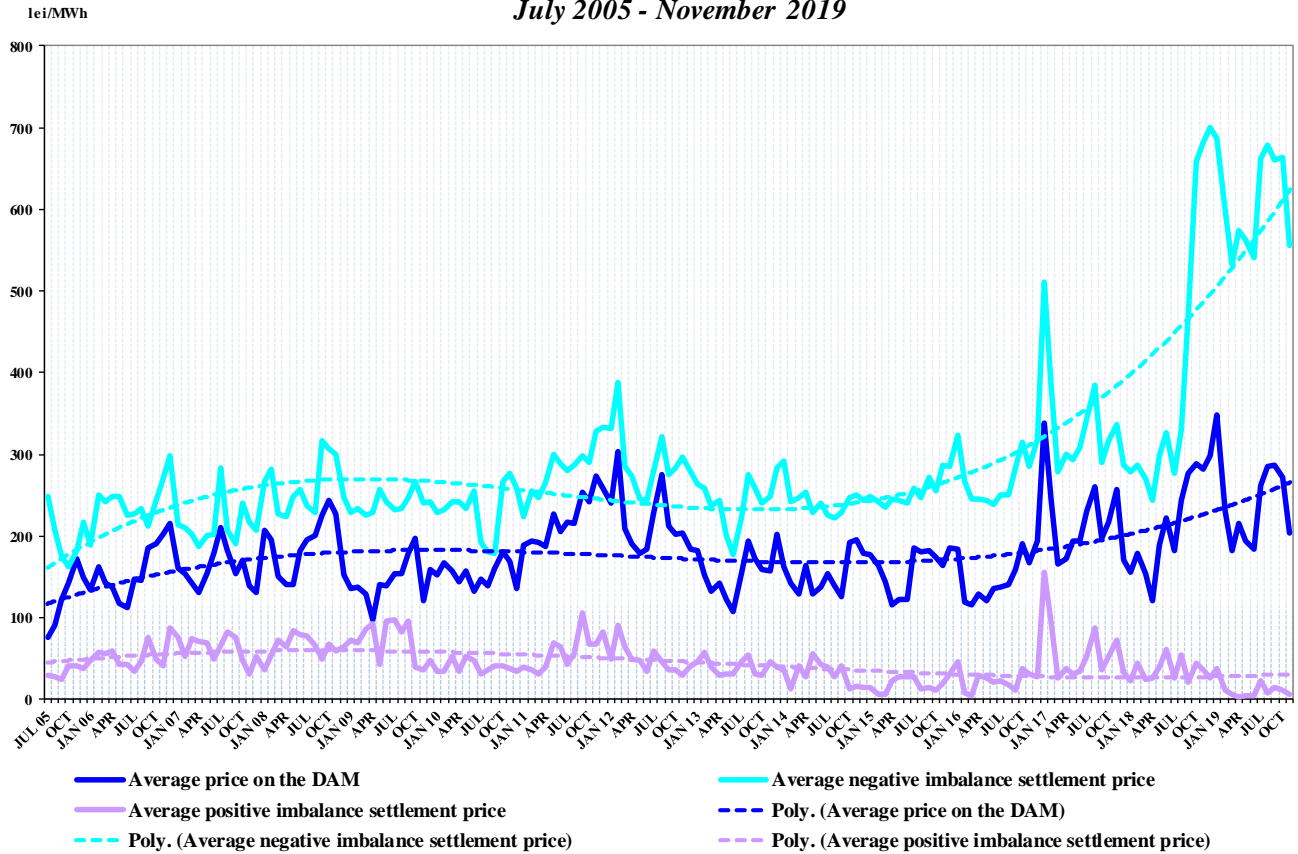
**Hourly average settlement prices and internal consumption**

November 2019



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

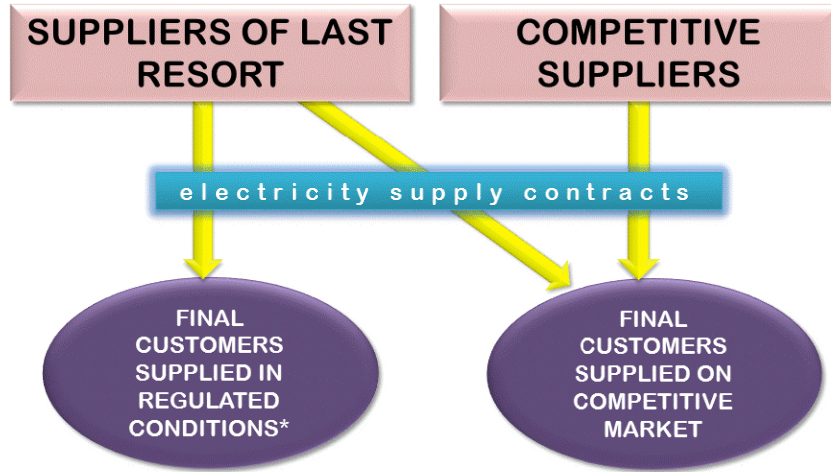
Monthly average prices on DAM and BM  
July 2005 - November 2019



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

### III. RETAIL ELECTRICITY MARKET

#### 1. Structure of the retail electricity market

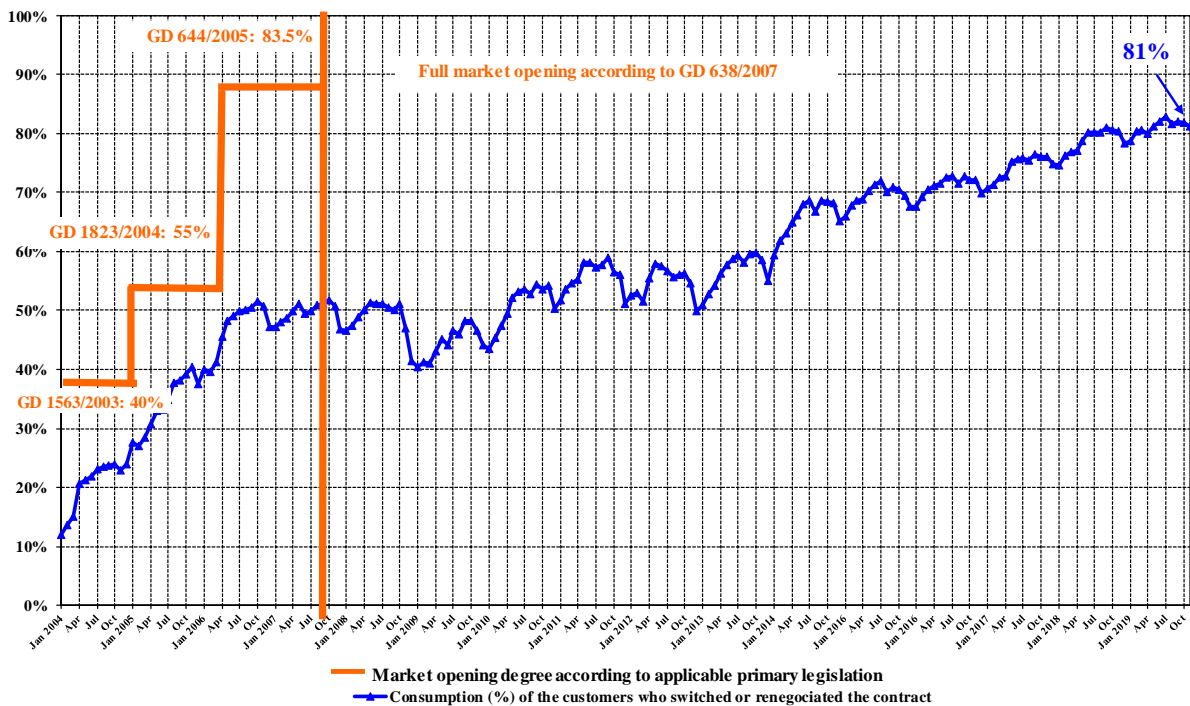


\* according to art. 68 (2) and art. 66 (1) from Electricity and Gas Law no. 123/2012

#### 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 – November 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 - November 2019

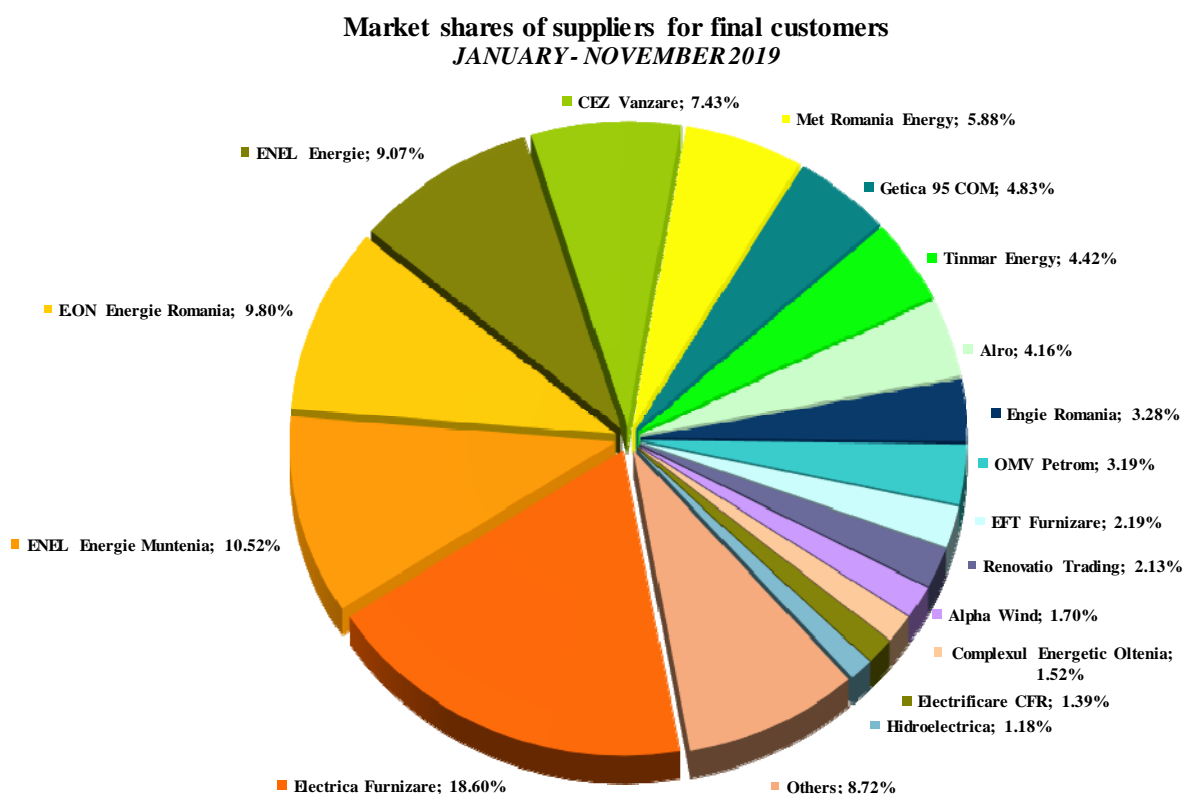


Source: Monthly reports of suppliers of final customers – Electricity Market Monitoring Unit assessment

### 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;

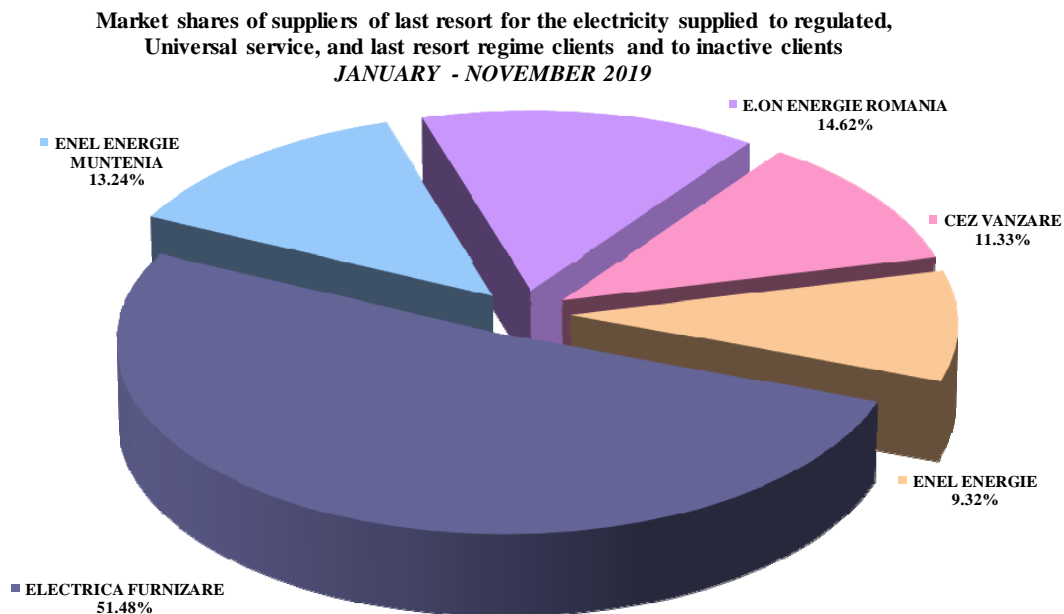


Final consumption: 45280 GWh

"Others" category includes 76 suppliers with individual market shares less than 1%

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;

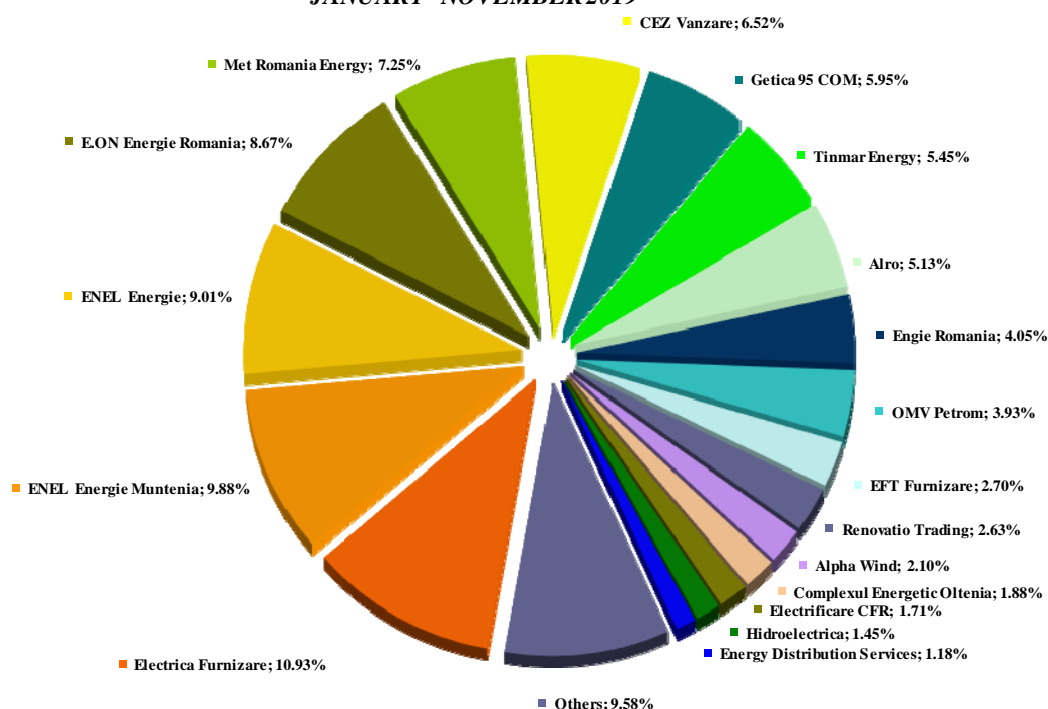


Consumption of regulated, Universal service and last resort regime clients and of inactive clients: 8567 GWh

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

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

**Market shares of suppliers on the competitive market  
JANUARY - NOVEMBER 2019**



**Consumption on competitive market: 36713 GWh**  
**Structure indicators:**  
**HHI - 624; C3 - 30%; C1 - 11%**

"Others" category includes 75 suppliers with individual market shares less than 1%

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

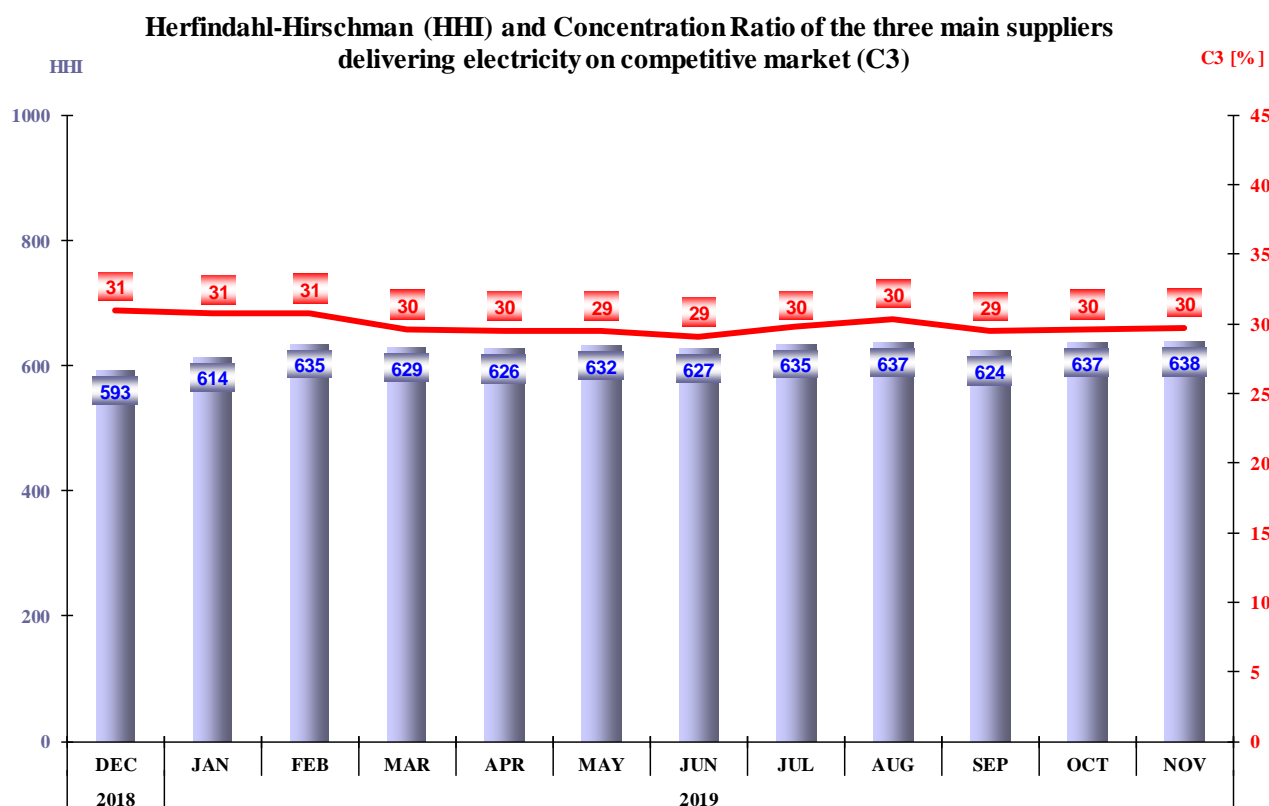
It is noted that in the calculation of the market indicator values the principle of dominance was not taken into account and the electricity supplied on the basis of which was established each supplier's market share includes the self-consumption of the large industrial consumers who also hold a supply 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 the 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 November 2019.

Number of suppliers	Share of sales to final customers from total sales trades			
	100%	75% - 100%	50% - 75%	<50%
<b>Competitive</b>	13	18	8	18
<b>Of last resort</b>	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 November 2019 in the following graph:



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

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

Indicators - November 2019	Consumption bands - Non-household customers							
	IA	IB	IC	ID	IE	IF	IG	Total
C1 - % -	29	23	18	13	18	17	21	12
C3 - % -	76	49	39	36	44	34	54	30
HHI	2105	1231	859	735	972	776	1243	609
Consumption - GWh -	141	385	300	688	391	208	778	2891
No. of SUPPLIERS	63	69	59	56	23	18	15	80
No. of suppliers of last resort	5	5	5	5	5	4	3	5
No. of competitive suppliers	43	48	42	42	13	11	5	55
No. of producers	15	16	12	9	5	3	7	20

Indicators -November 2019	Consumption bands - Household customers					
	DA	DB	DC	DD	DE	Total
C1 - % -	46	33	31	35	40	36
C3 - % -	90	78	74	77	74	81
HHI	3523	2258	2178	2436	2382	2591
Consumption - GWh -	140	124	67	45	16	392
No. of SUPPLIERS	36	33	36	37	38	47
No. of suppliers of last resort	5	5	5	5	5	5
No. of competitive suppliers	27	25	27	28	29	35
No. of producers	4	3	4	4	4	7

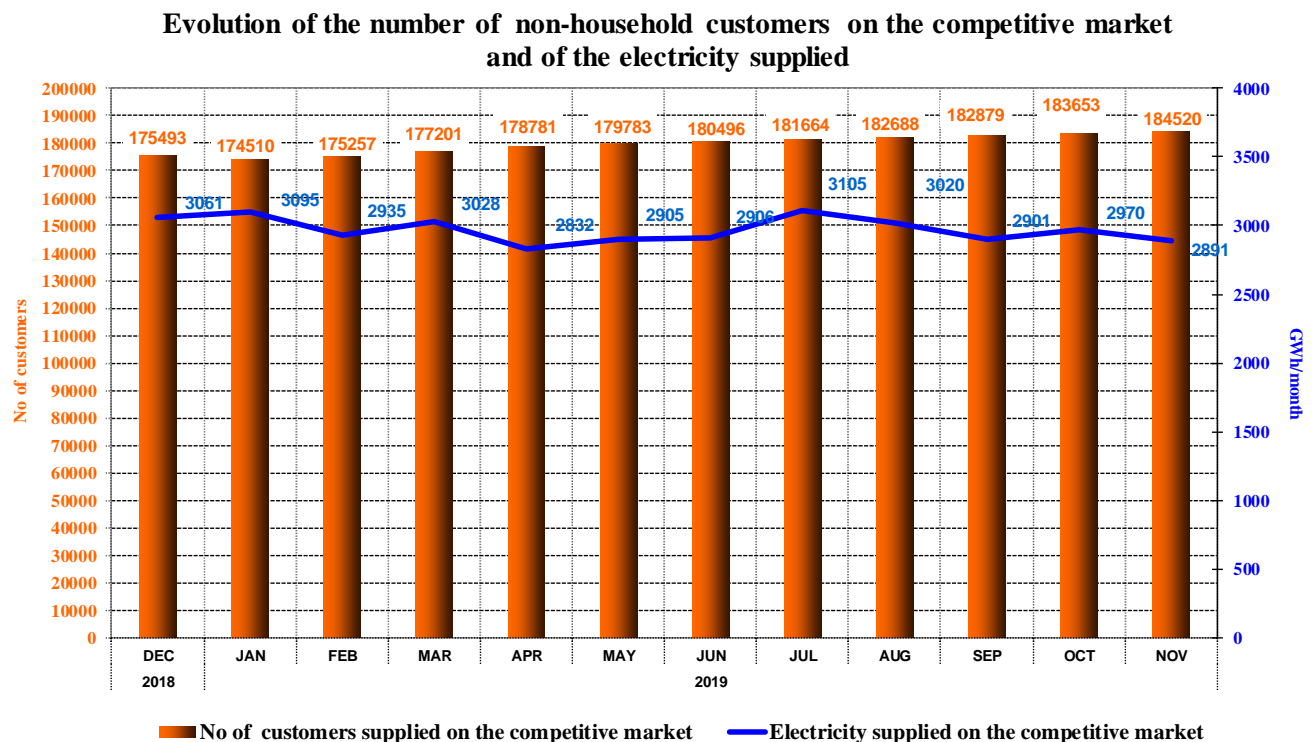
Source: Monthly reports of the suppliers – Electricity Market Monitoring Unit assessment

**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 November 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	

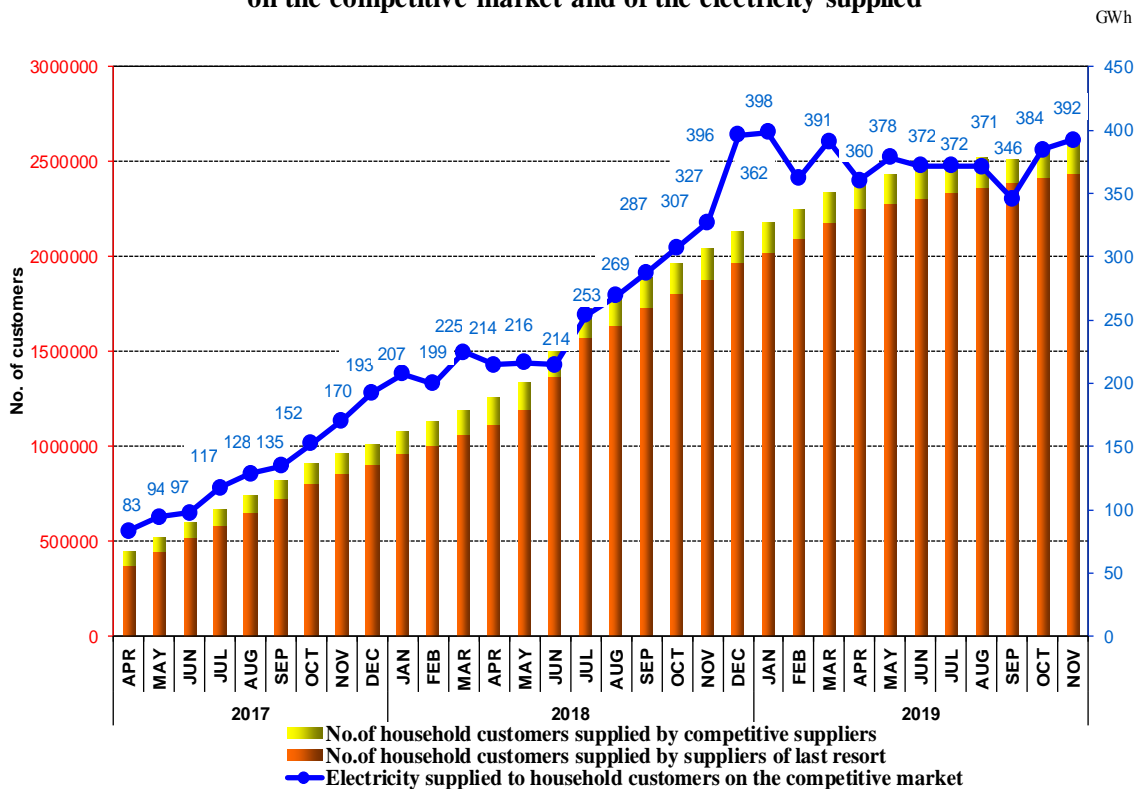
Household customers	Annual electricity consumption (kWh):	
DA		<1000
DB	>=1000	<2500
DC	>=2500	<5000
DD	>=5000	<15000
DE	>=15000	



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

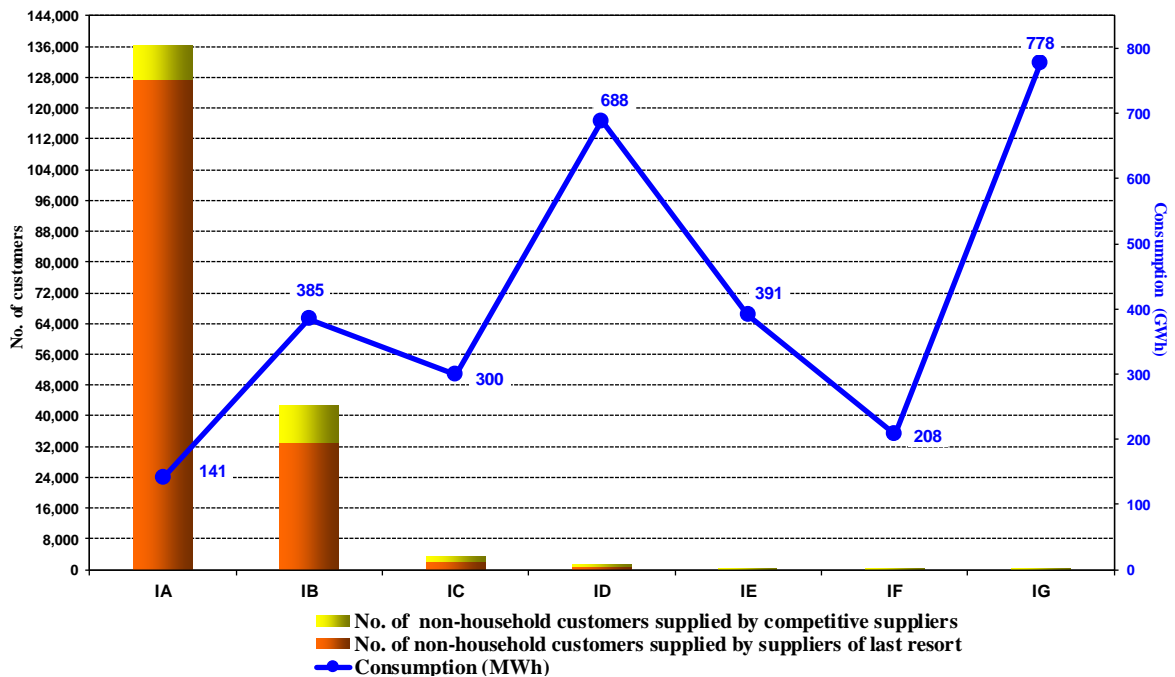
Electricity sales under competitive conditions to households between April 2017 and November 2019 are shown in the following graph:

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



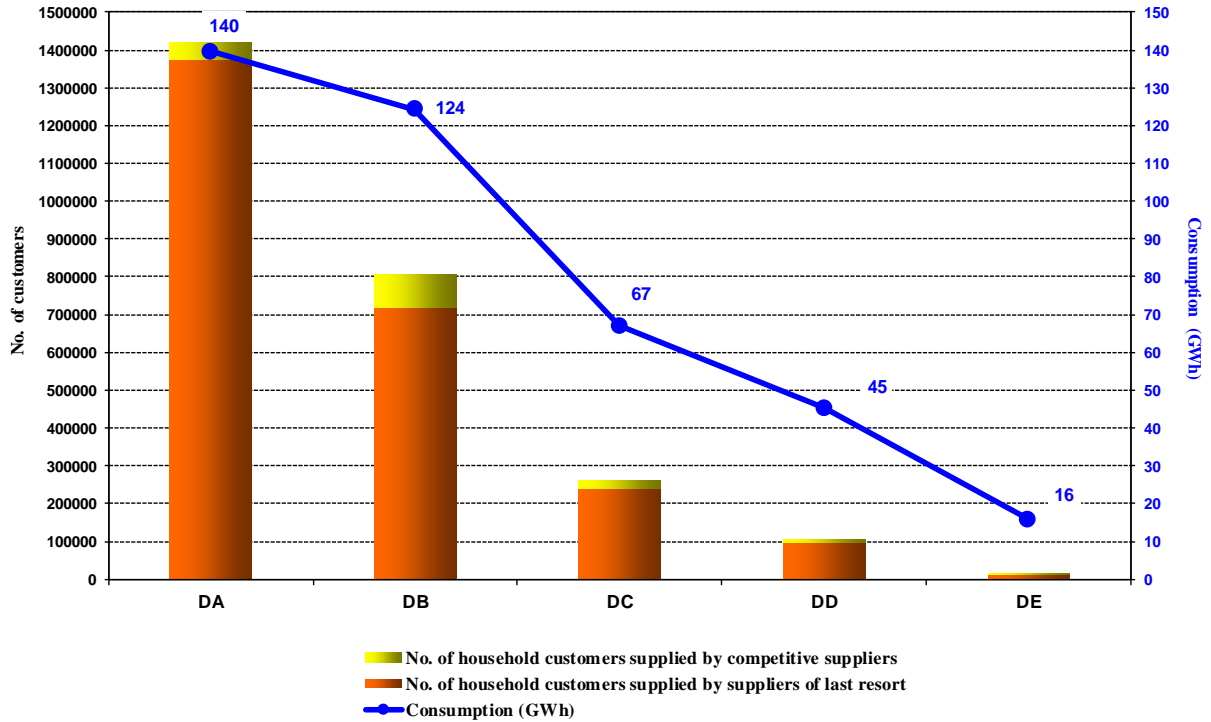
Source: Monthly reports of suppliers – Electricity Market Monitoring Unit assessment

**Number of non-household clients on the competitive market and their consumption broken down into consumption bands and type of supplier -NOVEMBER 2019-**



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**  
**- NOVEMBER 2019 -**

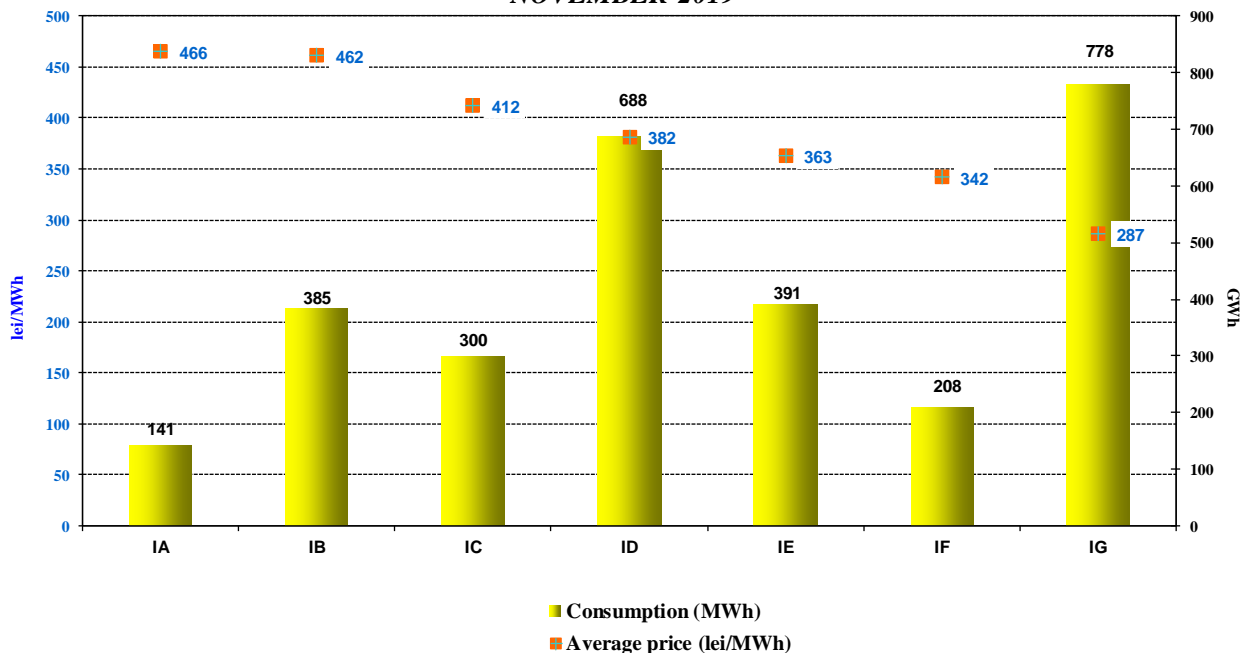


Source: Monthly reports of suppliers – Electricity Market Monitoring Unit assessment

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

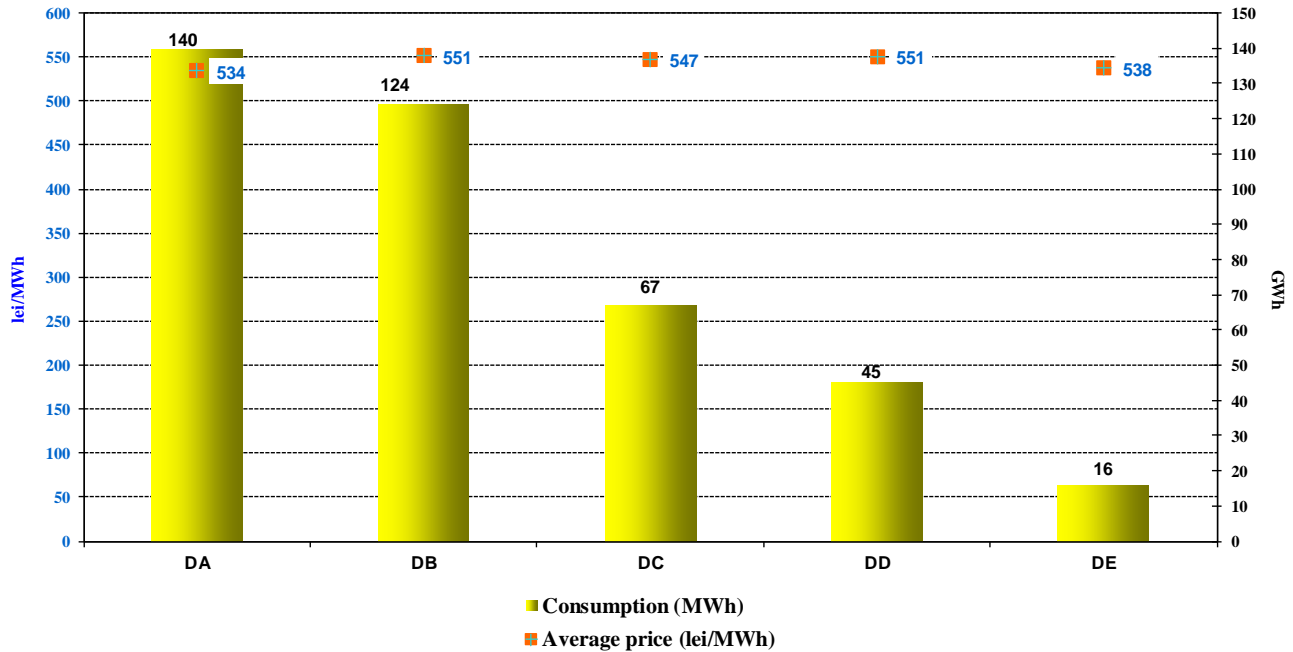
The following graphs present the average selling prices for November 2019 to households and non-household final clients supplied on the competitive market, based on the structure defined according to the Regulation (EU) no. 2016/1952.

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



Source: Monthly reports of 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  
- NOVEMBER 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

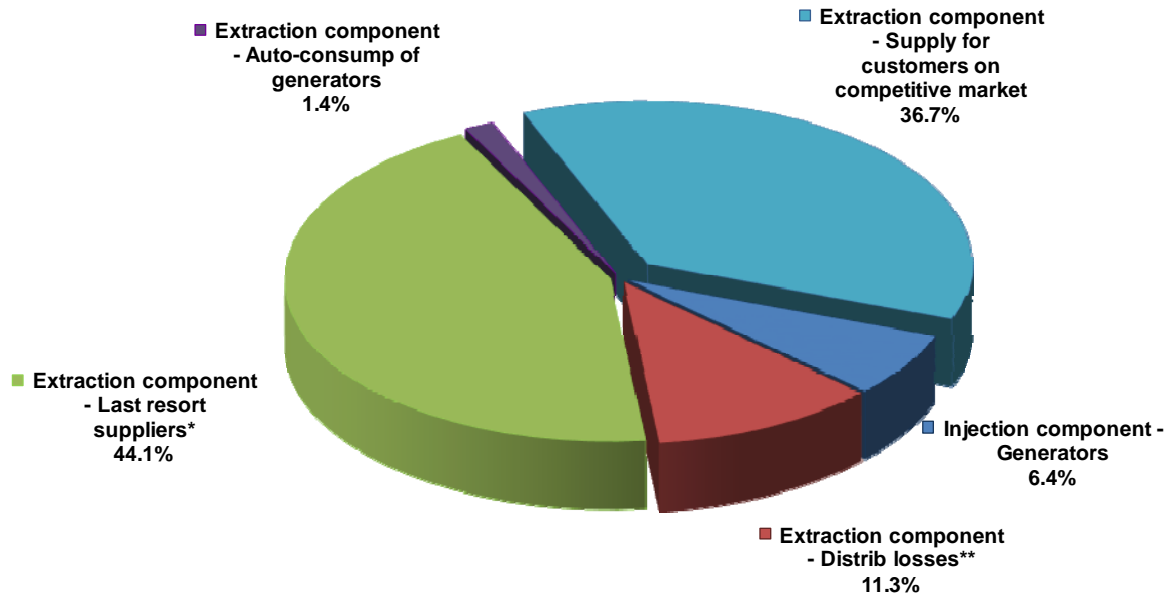
The Transmission and system operator (TSO) performs the electricity transmission service at regulated tariffs.

Starting with August 2017, the methodological principles setting the tariffs 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 electricity 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 November 2019, following the provision of the transmission service.

**CNTEE Traselectrica SA structure of revenues from transmission services**  
- November 2019-



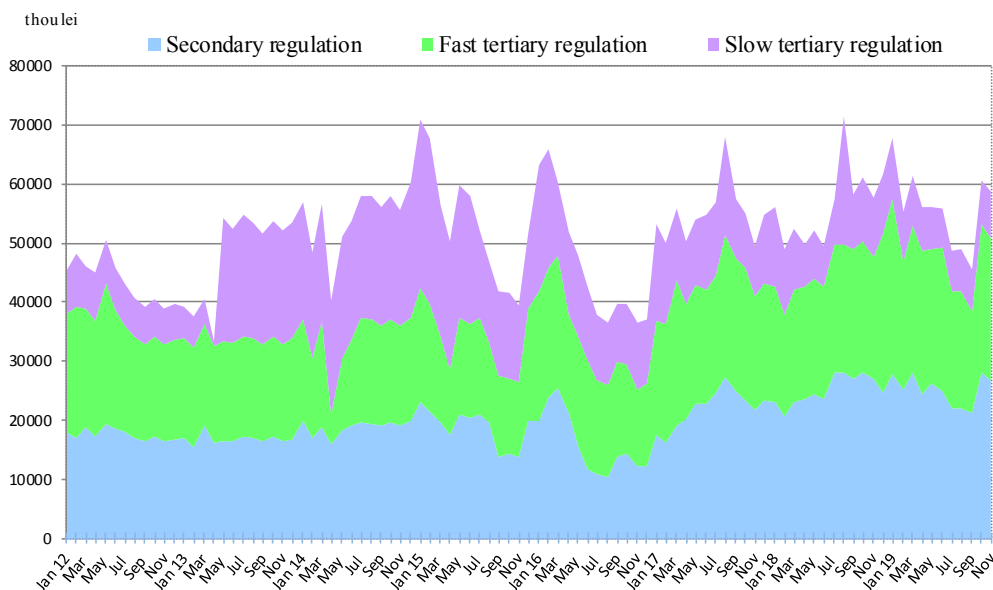
\* for electricity extracted from their own licence areas as well as from other areas

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

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

In order to perform the system operator tasks, CNTEE Traselectrica SA provides and contracts reserves (ancillary services) from qualified market 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 presents 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. 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 Traselectrica SA costs with ancillary services acquired from qualified generators**



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

## V. MARKET RULES EVOLUTION IN NOVEMBER 2019

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

- ANRE President Order no. 202/11 November 2019 for the amendment of the Regulation for programming production units and dispatchable consumers, approved by ANRE President Order no. 32/2013 and repealing ID Regulation approved by ANRE President Order no. 73/2013;
- ANRE President Order no. 203/14 November 2019 on the modification and completion of the Methodology for setting tariffs for the electricity distribution service, approved by ANRE President Order no. 169/2018;
- ANRE President Order no. 204/14 November 2019 regarding the substantiation and the criteria for approving the investment plans of the transmission and system operator and of the electricity distribution operators;
- ANRE President Order no. 206/14 November 2019 approving the values of the reference prices for the thermal energy delivered in the SACET from power stations with cogeneration units that do not benefit from support schemes for promoting high efficiency cogeneration, applicable in the first semester of 2020;
- ANRE President Order no. 210/20 November 2019 regarding the modification of the Methodology for establishing and adjusting the prices for electricity and thermal energy produced and delivered from cogeneration power plants benefiting from the support scheme, respectively the bonus for high efficiency cogeneration, approved by ANRE President Order no. 15/2015;
- ANRE President Order no. 211/20 November 2019 approving the reference bonus values for the electricity produced in high-efficiency cogeneration and the reference prices for thermal energy produced in cogeneration, applicable in 2020;
- ANRE President Order no. 212/27 November 2019 regarding the modification of ANRE President Order no. 123/2017 on the approval of the contribution for high efficiency cogeneration and of some provisions regarding its billing mode;
- ANRE President Decision no. 1900/12 November 2019 regarding the assignation of the economic operators who did not fulfill the estimated mandatory quota for the purchase of green certificates and those who did not fulfill the legal obligation to purchase green certificates from the anonymous centralized green certificates spot market for 2019, for the third quarter;
- ANRE President Decision no. 1970/20 November 2019 approving the quantities produced in high-efficiency cogeneration that benefit from the bonus scheme for the month of October 2019;
- ANRE President Decision no. 1990/27 November 2019 for the modification of ANRE President Decision no. 1298 of 10 July 2019 on the approval of the List of capacities for the production of electricity and thermal energy in cogeneration, with final accreditation;
- ANRE President Decision no. 1992/27 November 2019 on the approval of the bonus for the electricity produced in high efficiency cogeneration and delivered in the NPS and of the regulated prices for the thermal energy delivered to SACET during November – December 2019 and in 2020 from power plants CET Metrom, CET Noua, CET Nord 1 and CET Nord 2 belonging to SC BEPCO S.R.L. Brasov;

- ANRE President Decision no. 1993/27 November 2019 on the approval of the bonus for the electricity produced in high efficiency cogeneration and delivered in the NPS and of the regulated price for the thermal energy delivered to SACET during November – December 2019 and in 2020 from the cogeneration power plant CTE Mintia Unit 3 and from CET Paroşeni belonging to S.C. Complexul Energetic Hunedoara S.A.;
- ANRE President Decision no. 1994/27 November 2019 on the approval of the bonus for the electricity produced in high efficiency cogeneration and delivered in the NPS and of the regulated price for the thermal energy delivered to SACET during November – December 2019 and in 2020 from CET Craiova II belonging to Complexul Energetic Oltenia S.A..

## 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 negotiated prices or defined by standard bids;
- **Fuel consumption** represents the fuel consumed for generating electricity and heat in the power plants of monitored generators;
- **Self-consumption of generators** (in the graph regarding the revenues of CN Transelectrica SA) the self-consumption exclusively represents the generators consumption at consumption places other than the generation sites;
- **Electricity delivered into the grid** includes the electricity sold by the generators through direct lines or consumed by themselves at other consumption sites;
- **Electricity delivered into the grid according to the transport contract** is the electricity for which the transport service (the grid input component) is provided corresponding to the electricity delivered from the power plants with installed capacity of more than 5 MW connected to the transmission and distribution electric grids.

### 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
- CME-RES-GC – Centralized market for electricity from renewable energy sources supported by green certificates
- 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
- ACER – The Agency for the Cooperation of Energy Regulators
- NTC - Net Transfer Capacity