

Transelectrica®

Societate Administrată în sistem Dualist

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# MARKET MONITORING REPORT

## Balancing Market

### September 2019

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romania2019.eu  
Președinția României la Consiliul Uniunii Europene

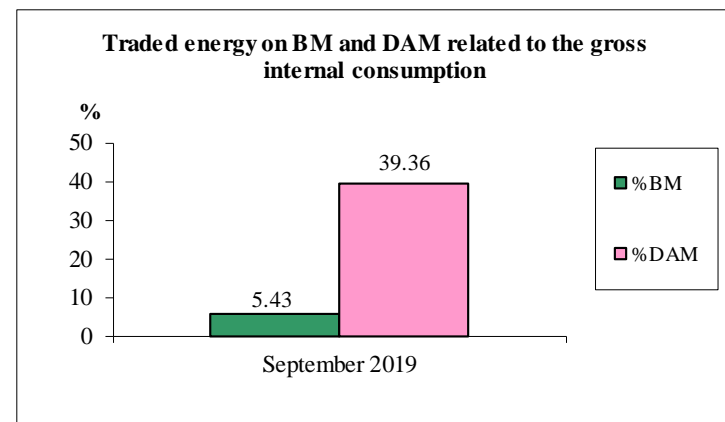
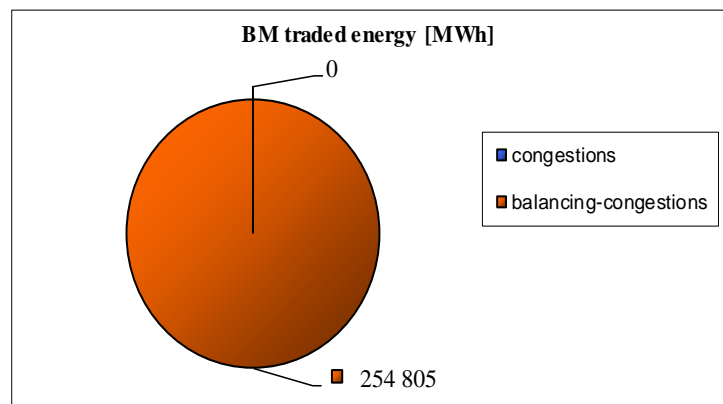
ANRE - Romanian Energy Regulatory Authority  
HHI - Herfindahl-Hirschman Index  
BRP - Balance Responsible Party  
BM - Balancing Market  
DAM - Day Ahead Market  
TSO - Transmission System Operator  
DU – Dispatchable Unit  
PN – Physical Notification  
NDC - National Dispatching Center  
C1 – The market share of the largest market participant  
C3 – Total market share of top 3 market participants  
NPS – Minimum number of residual generators  
TTC – Total Transfer Capacity  
NTC – Net Transfer Capacity  
ATC – Available Transfer Capacity

According to the Commercial Code. Transelectrica, the Romanian Transmission System Operator, operates and monitors the activity of 3 types of markets: Balancing Market, Ancillary Services Market and Market for Allocation of Cross-Border Capacities.

Using the records from the markets data bases, Transelectrica prepares daily, weekly and monthly monitoring reports. A part of the data included in these reports (those data which are not confidential) are published on the website **www.transelectrica.ro** (section Transparency).

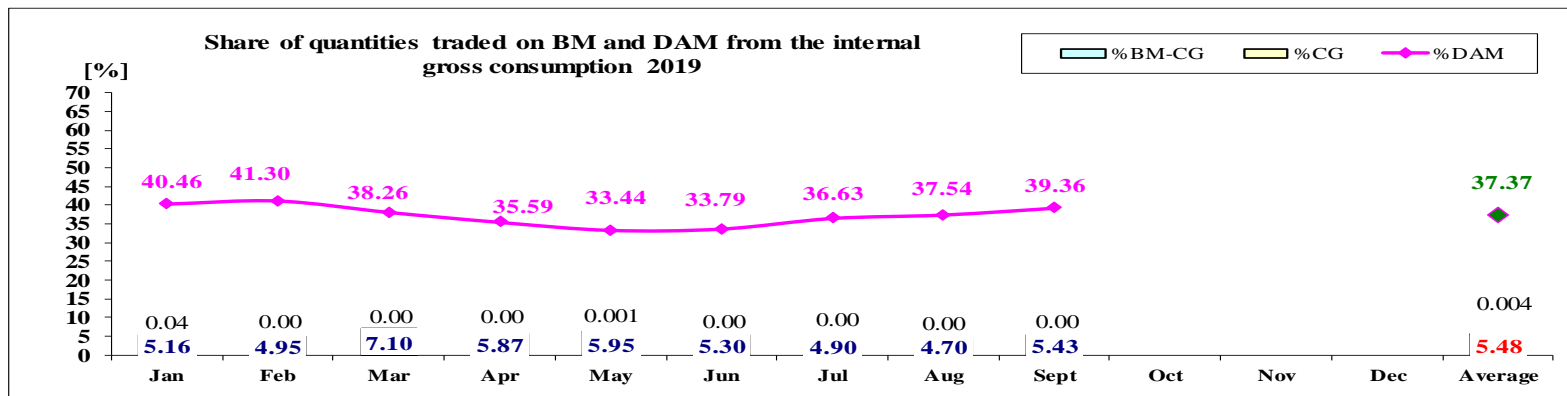
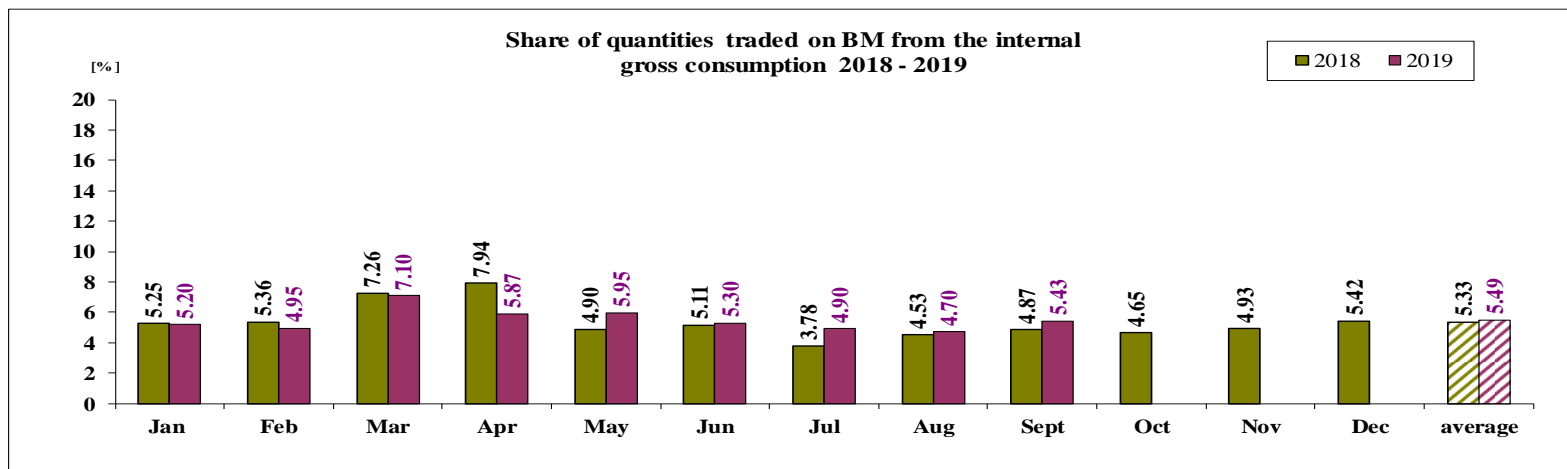
## The Balance Generation/Consumption

- The average monthly value of generated power was 5 819 MW and the actual internal gross consumption was 6 515 MW.
- The NDC consumption forecast was close to the actual consumption, the standard deviation being **1.22%**. Bigger differences were registered in case of consumption values resulted as the sum between notified production and total scheduled exchanges with the neighbouring power systems. In this case the standard monthly deviation value was **3.26%**. The greatest daily deviation regarding the notifications was registered in **18.09 (5.40%)**.
- The energy used in September 2019 for balancing the power system and congestion management was 254 805 MWh (with an average power of 354 MW, which means **5.43%** from the internal gross consumption). No transactions were made for congestion management.
- The energy traded in September 2019 on Day Ahead Market was 1 846 089 MWh (with an average power of 2 564 MW, which means **39.36%** from the internal gross consumption). Data are shown in EET hours.
- The total cost of the energy traded on the Balancing Market was 39 161 264 lei (with an average weighted price of 154 lei/MWh), from which:
  - the cost for energy traded on the Balancing Market was 39 161 264 lei (from which 0 lei startup cost);
  - the cost of the energy paid by C.N.T.E.E. Transelectrica S.A. for congestion management was 0 lei.



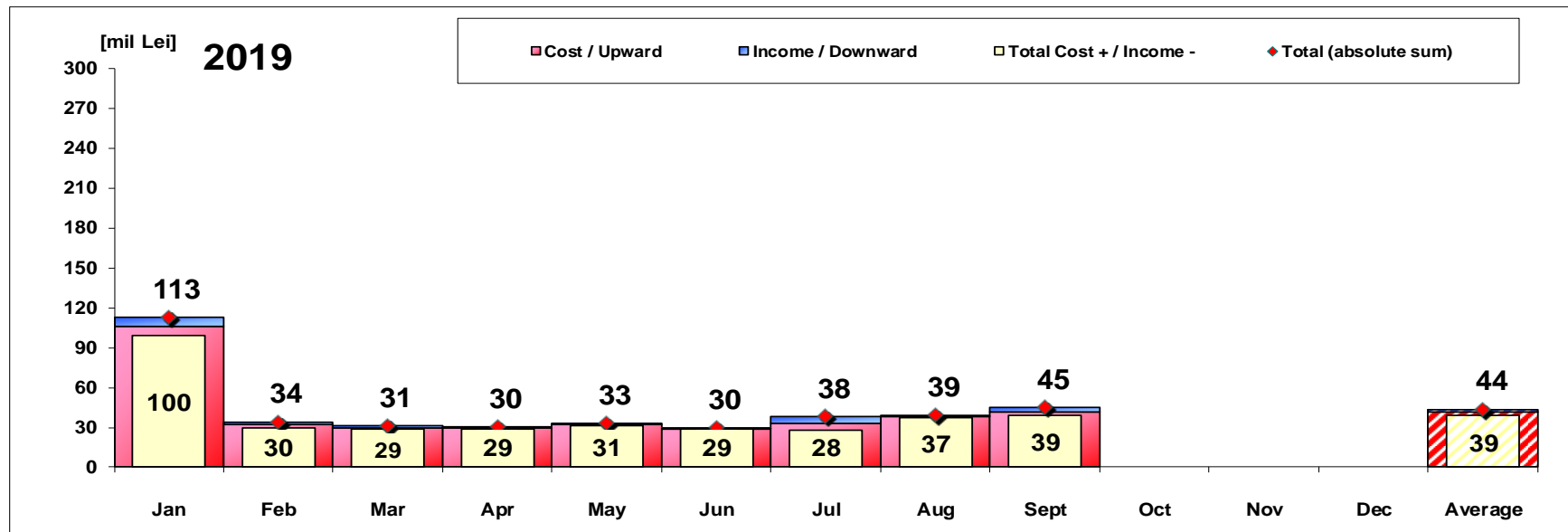
## The Balance Generation / Consumption

• Monthly percentage values resulted are calculated as ratio between traded volumes on BM and gross internal consumption. The annual average value was calculated as average of monthly values.  
(BM – Balancing Market, DAM – Day Ahead Market, BM-CG – difference between Balancing Market and traded volume on congestion).



2019													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Average
%BM	5.20	4.95	7.10	5.87	5.95	5.30	4.90	4.70	5.43				5.49
%DAM	40.46	41.30	38.26	35.59	33.44	33.79	36.63	37.54	39.36				37.37
%CG	0.04	0.00	0.00	0.00	0.001	0.00	0.00	0.00	0.00				0.004
%BM-CG	5.16	4.95	7.10	5.87	5.95	5.30	4.90	4.70	5.43				5.48

# Balancing Energy Market Transactions

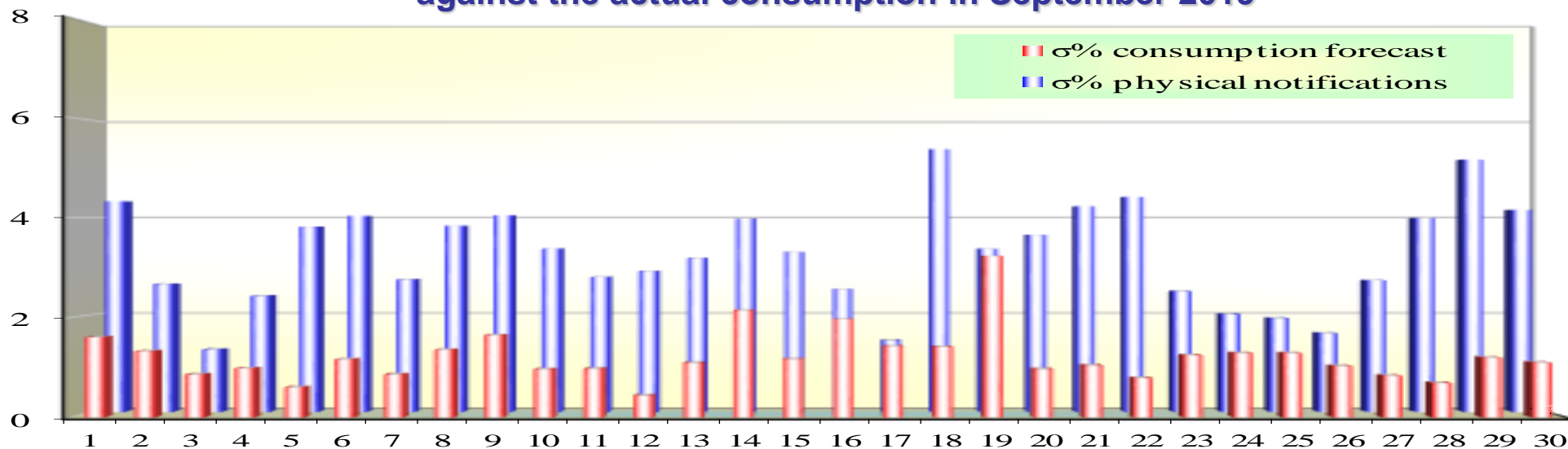


[Lei]	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Average	Total
Cost / Upward	106 045 870	32 017 367	29 926 340	29 740 335	31 990 334	29 090 995	32 824 552	38 192 956	42 023 528				41 316 920	371 852 278
Income / Downward	6 528 407	2 166 232	1 159 092	595 988	1 036 120	512 028	4 972 126	1 050 328	2 862 264				2 320 287	20 882 586
CE Cost	1 639 293	0	0	0	12 911	0	0	0	0				183 578	1 652 204
Cost for energy traded on the Balancing Market (includes startup cost)	97 878 170	29 851 135	28 767 248	29 144 347	30 941 303	28 578 967	27 852 426	37 142 628	39 161 264				38 813 054	349 317 488
Cost+/Income- (BE and CE)	99 517 463	29 851 135	28 767 248	29 144 347	30 954 214	28 578 967	27 852 426	37 142 628	39 161 264				38 996 632	350 969 692
Total (absolute sum) (BE and CE)	112 574 277	34 183 599	31 085 432	30 336 324	33 026 454	29 603 024	37 796 678	39 243 284	44 885 793				43 637 207	392 734 864

CE – Congestion Energy

\* The average annual value of BM transactions (the absolute sum of upward and downward transactions) was calculated as average of monthly values.

## Standard deviation of physical notifications and consumption forecast against the actual consumption in September 2019



September 2019

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
σ% consumption forecast	1.61	1.32	0.86	0.98	0.60	1.16	0.86	1.35	1.65	0.96	0.98	0.44	1.09	2.14	1.17	1.96	1.43	1.41	3.23	0.97	1.04	0.79	1.24	1.29	1.29	1.03	0.84	0.69	1.20	1.10
σ% physical notifications	4.33	2.63	1.28	2.39	3.81	4.03	2.72	3.83	4.04	3.36	2.77	2.89	3.16	3.98	3.29	2.52	1.47	5.40	3.35	3.64	4.23	4.43	2.48	2.01	1.93	1.62	2.71	3.99	5.19	4.16

**σ<sub>average</sub> % consumption forecast = 1.22**

**σ<sub>average</sub> % physical notifications = 3.26**

$$\sigma_{average \% consumption forecast} = \frac{\sqrt{\frac{1}{n} \sum_{i=1}^n (R - P)^2}}{\overline{R}} \cdot 100$$

$$\sigma_{average \% notifications} = \frac{\sqrt{\frac{1}{n} \sum_{i=1}^n (R - N)^2}}{\overline{R}} \cdot 100$$

**R = Realized Consumption;**

**N = Physical Notifications;**

**P = Consumption Forecast.**

## Balancing energy – Selected prices and quantities

- At the beginning of the month on the Balancing Market operated 65 BRPs, 111 market participants, holding 219 commercially operating dispatchable units.

### September 2019

#### Downward regulation

	Prices [lei/MWh]			Quantities [MWh]		
	Monthly	Maximum	Minimum	Total	Actually	Deviation
	average			selected	delivered	%
Secondary	0.10	0.10	0.10	47013.74	47013.74	0.00%
Fast Tertiary	19.57	1138.79	0.10	150930.76	145675.57	3.48%
Slow Tertiary	-	-	-	-	-	-
				197944.50	192689.31	2.65%

Participants						
	C1	C3	C1	C3	HHI	HHI
Number	(selected)		(actually delivered)		(selected)	(actually delivered)
4	59.16%	99.94%	59.16%	99.94%	4711	4711
6	48.99%	94.61%	48.48%	94.89%	3464	3447
-	-	-	-	-	-	-

#### Upward regulation

	Monthly	Maximum	Minimum	Total	Actually	Deviation
	average			selected	delivered	%
Secondary	741.82	1200.00	516.51	23009.75	23009.75	0.00%
Fast Tertiary	640.91	1198.00	0.10	34233.16	33005.59	3.59%
Slow Tertiary	594.01	1000.00	432.00	6267.50	6100.54	2.66%
				63510.41	62115.88	2.20%

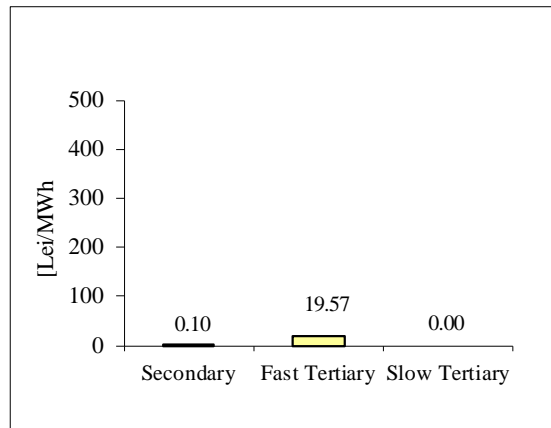
	C1	C3	C1	C3	HHI	HHI
Number	(selected)		(actually delivered)		(selected)	(actually delivered)
4	63.71%	99.88%	63.71%	99.88%	5004	5004
8	57.65%	90.03%	58.71%	90.35%	4129	4213
3	70.66%	100.00%	72.22%	100.00%	5424	5603



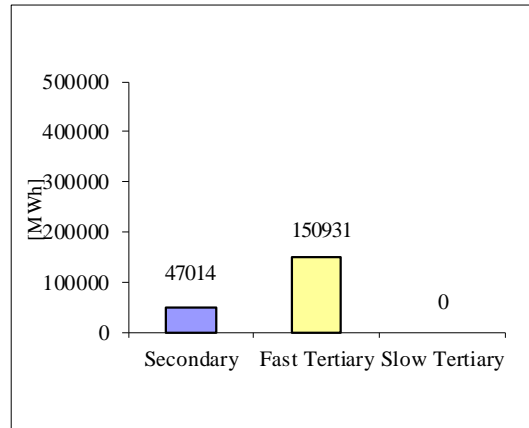
## Balancing energy – Selected prices and quantities in September 2019

September 2019

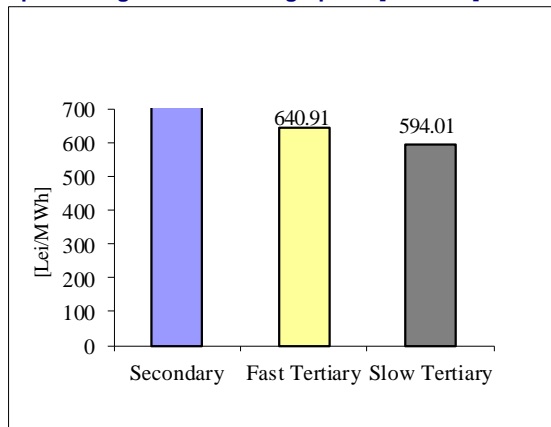
Downward regulation - average price [lei/MWh]



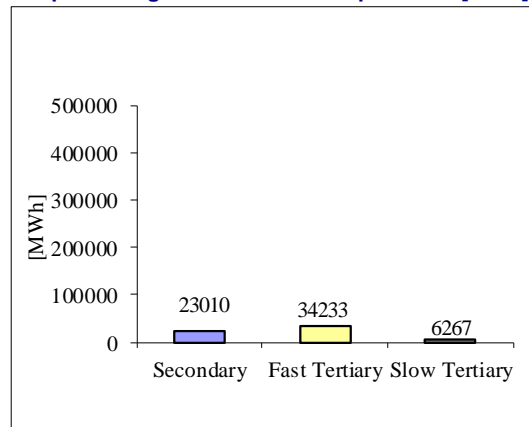
Downward regulation - selected quantities [MWh]



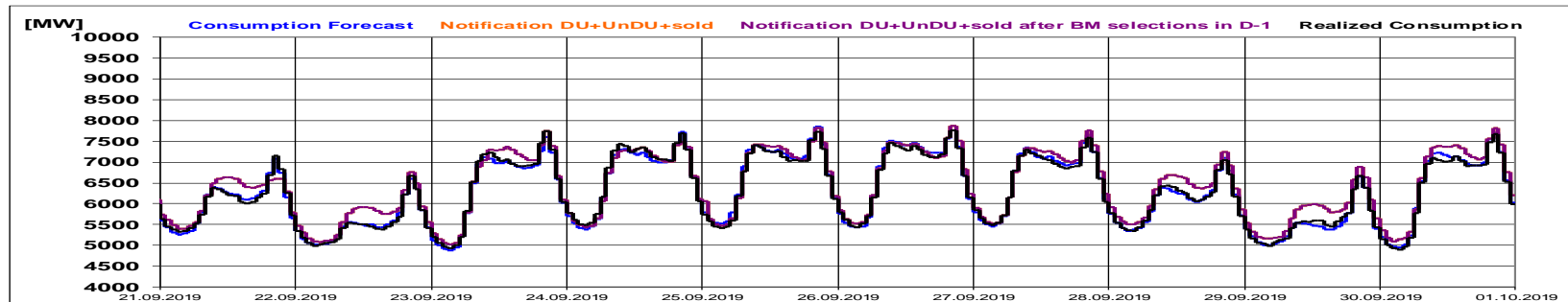
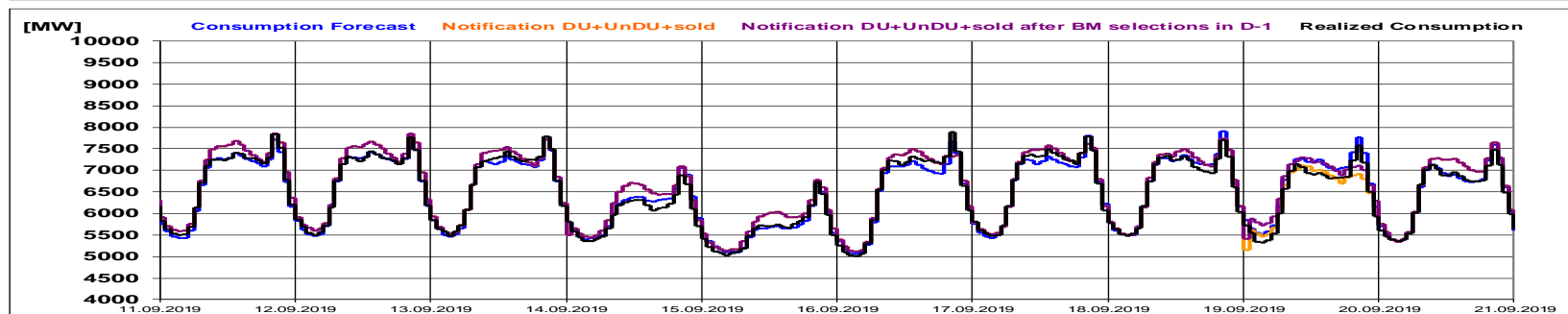
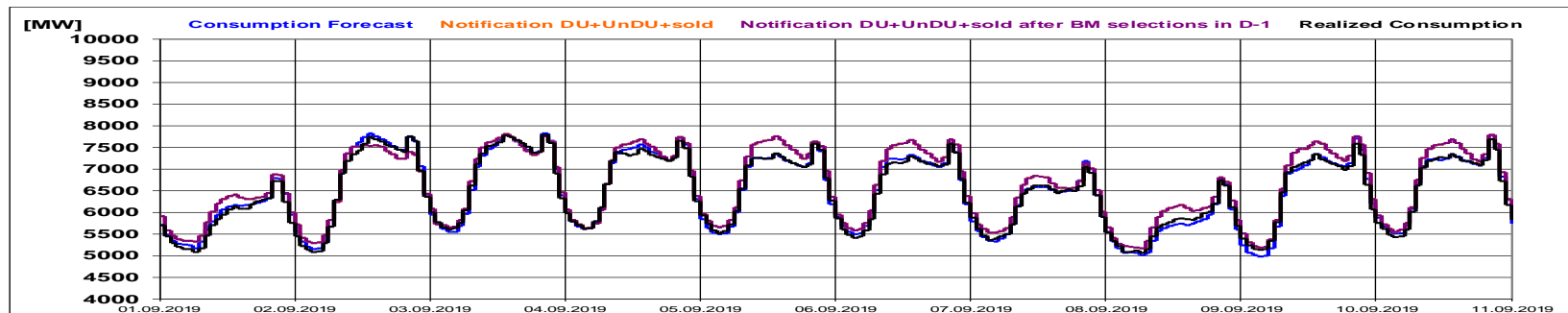
Upward regulation - average price [lei/MWh]



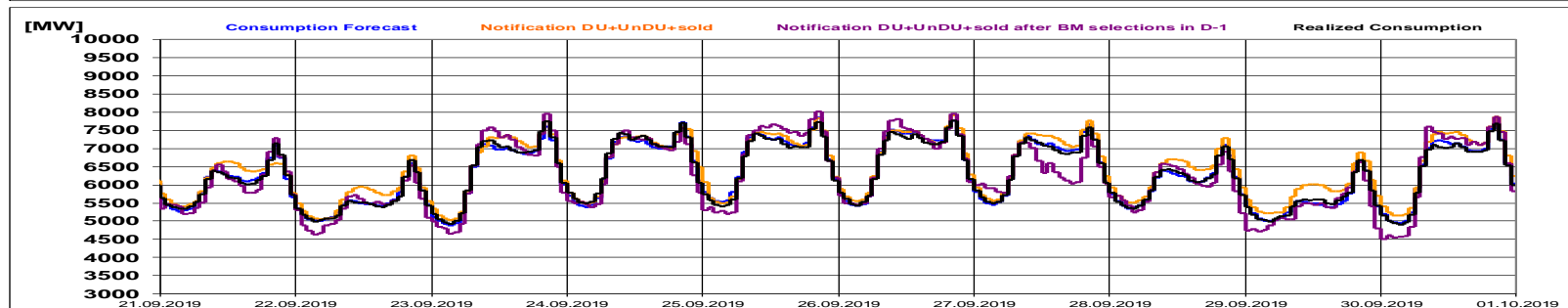
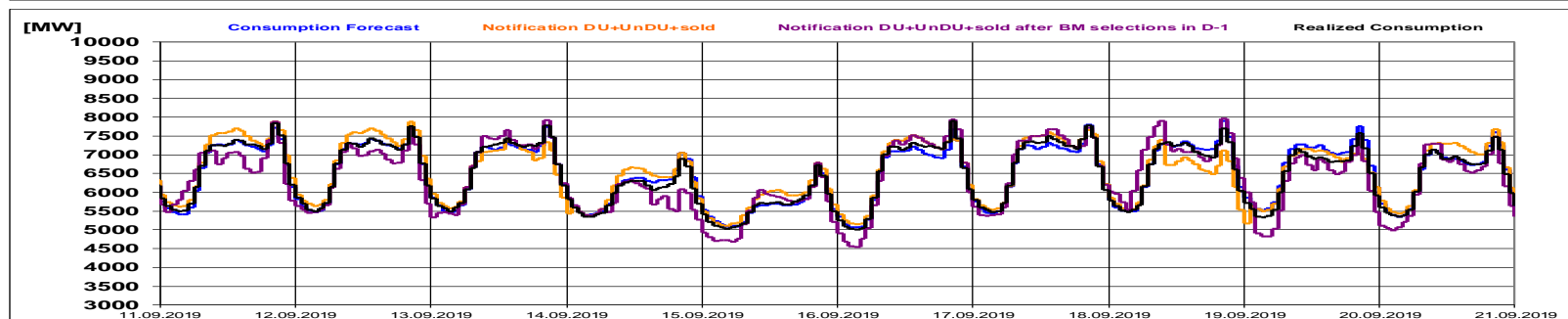
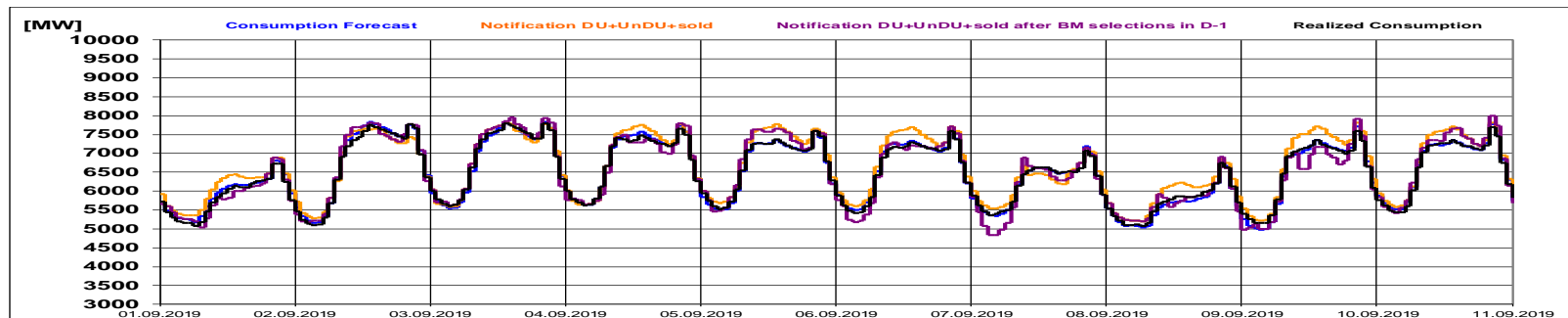
Upward regulation - selected quantities [MWh]



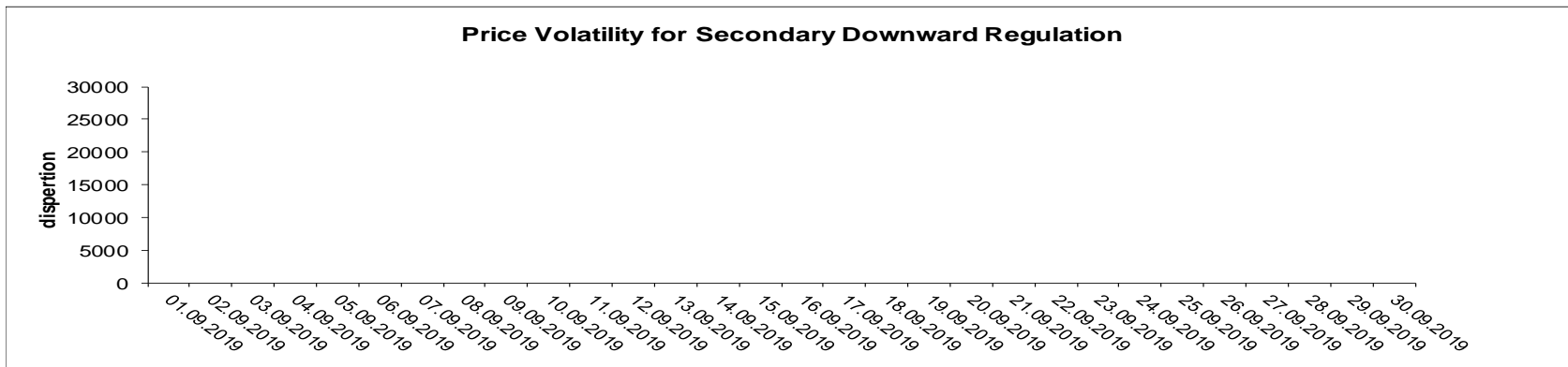
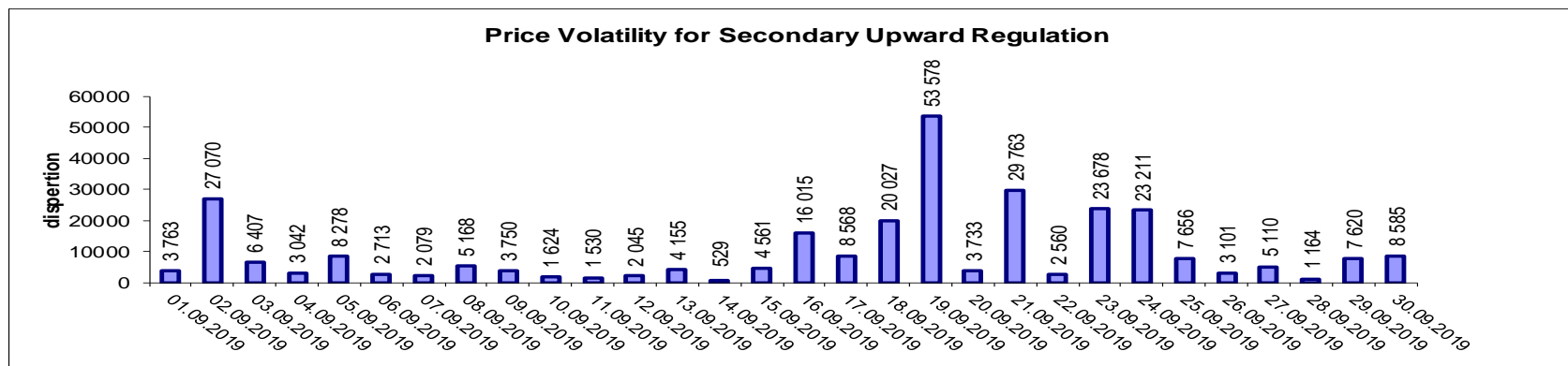
## Realized consumption, forecast, notifications, notifications after BM selections in D-1



## Realized consumption, forecast, notifications, notifications after BM selections in D (end of delivery day)



## Indicators – Price Volatility for Secondary Regulation



**Volatility = price dispersion on studied interval:**

$$\frac{1}{n-1} \sum_{i=1}^n (x_i - \bar{x})^2$$

Price volatility for Secondary Downward Regulation, determined as the daily price dispersion, recorded zero values throughout the month, because of constant price values from one hour to the next.

# Contact

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