

# MARKET MONITORING REPORT

## Balancing Market

January 2018

## Abbrevations

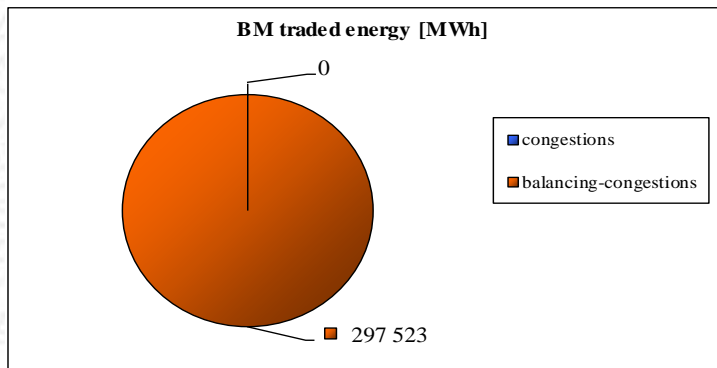
ANRE - Romanian Energy Regulatory Authority  
HHI - Herfindahl-Hirschman Index  
BRP - Balance Responsible Party  
BM - Balancing Market  
DAM - Day Ahead Market  
TSO - Transmission System Operator  
DU – Dispatchable Unit  
PN – Physical Notification  
NDC - National Dispatching Center  
C1 – The market 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.

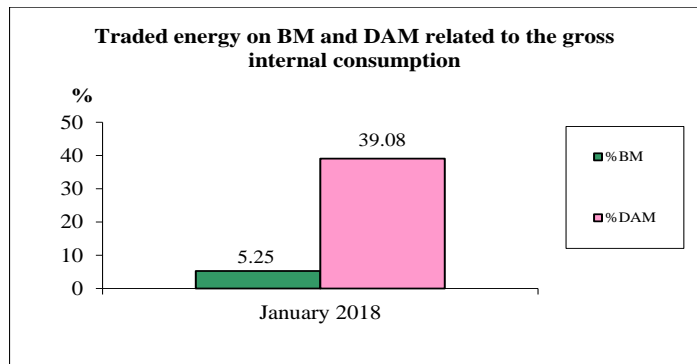
Using the records from the markets data bases, Transelectrica prepares daily, weekly and monthly monitoring reports. A part of the data included in these reports (those data which are not confidential) are published on the website **[www.transelectrica.ro](http://www.transelectrica.ro)** (section Transparency).

## The Balance Generation/Consumption

- The average monthly value of generated power was 8 096 MW and the actual internal gross consumption was 7 622 MW.
- The NDC consumption forecast was close to the actual consumption, the standard deviation being **1.78%**. 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 **4.11%**. The greatest daily deviation regarding the notifications was registered in **01.01 (22,23%)**.
- The energy used in January 2018 for balancing the power system was 297 523 MWh (with an average power of 400 MW, which means **5,25%** from the internal gross consumption).
- The energy traded in January 2018 on Day Ahead Market was 2 215 997 MWh (with an average power of 2 978 MW, which means **39,08%** from the internal gross consumption). Data are shown in EET hours.
- The total cost of the energy traded on the Balancing Market was **36 910 039** lei (with an average weighted price of 124 lei/MWh).

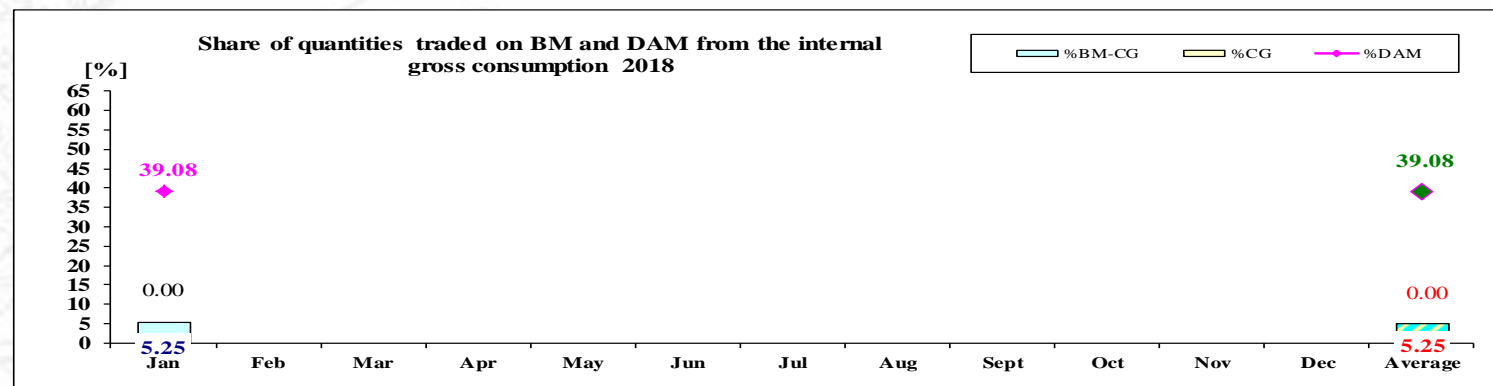
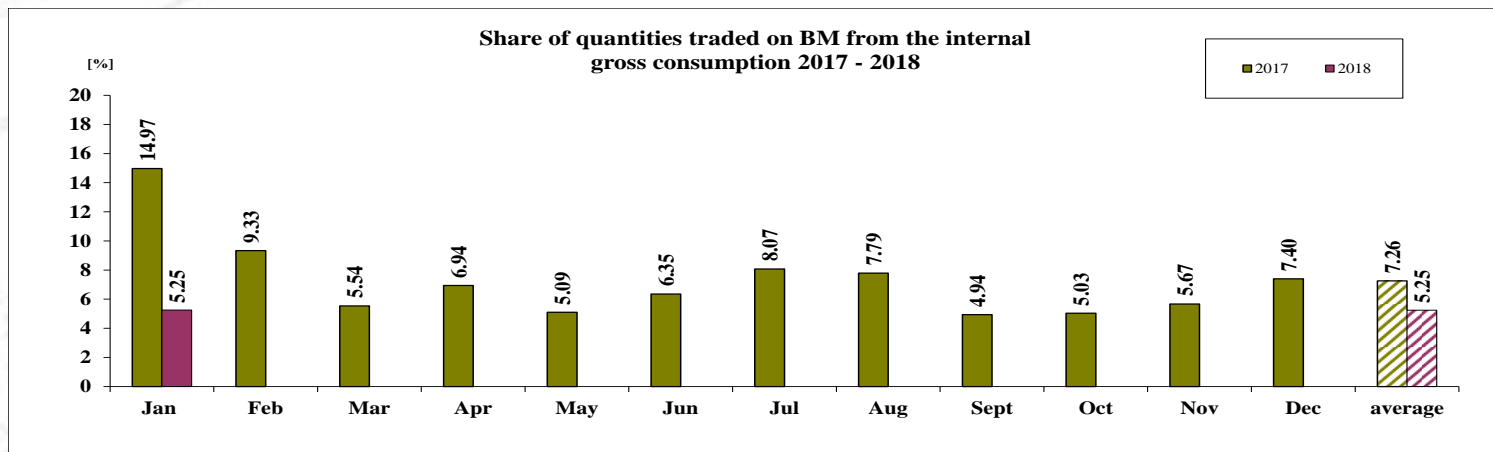


January 2018

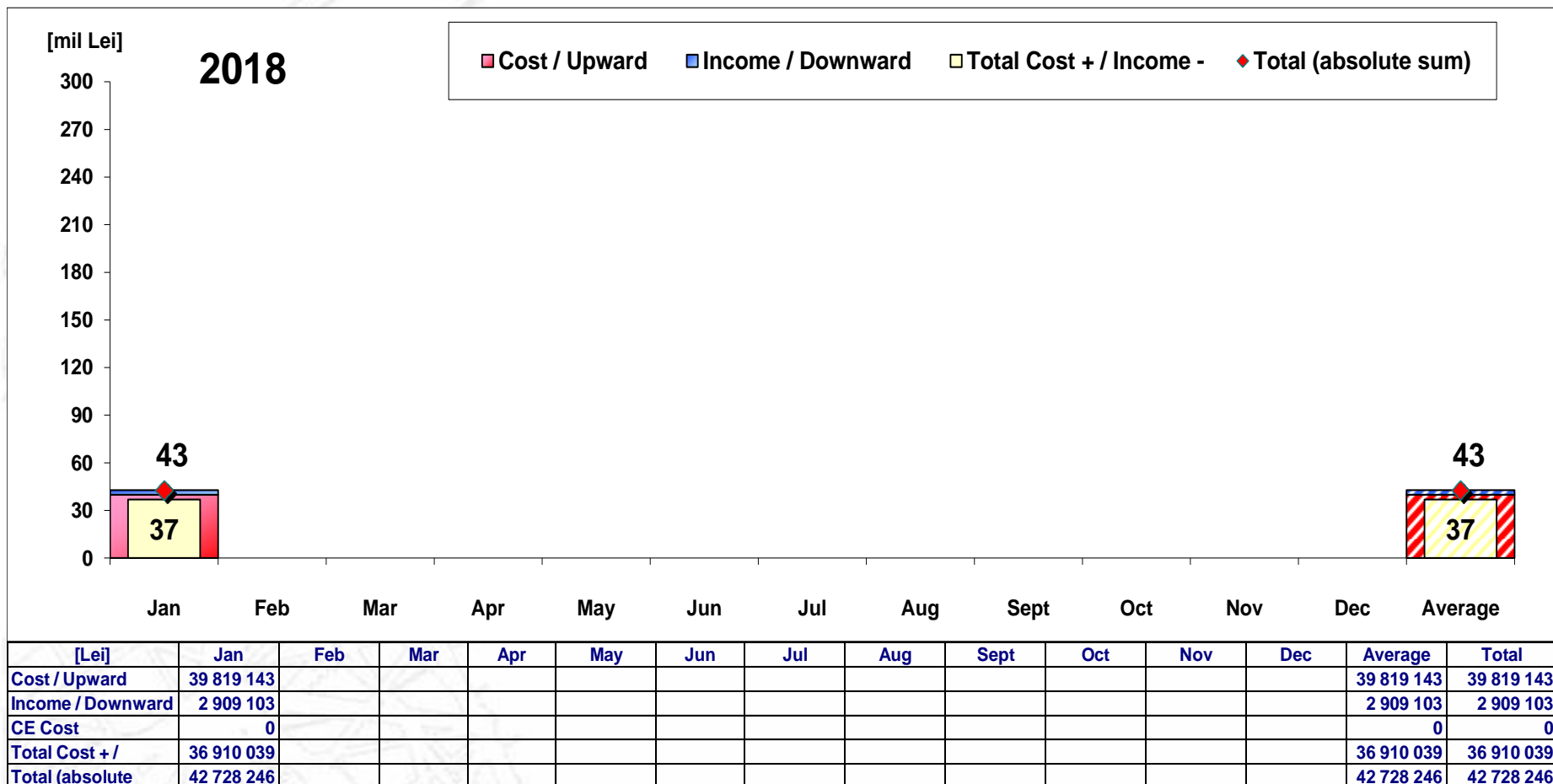


## The Balance Generation / Consumption

• 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).



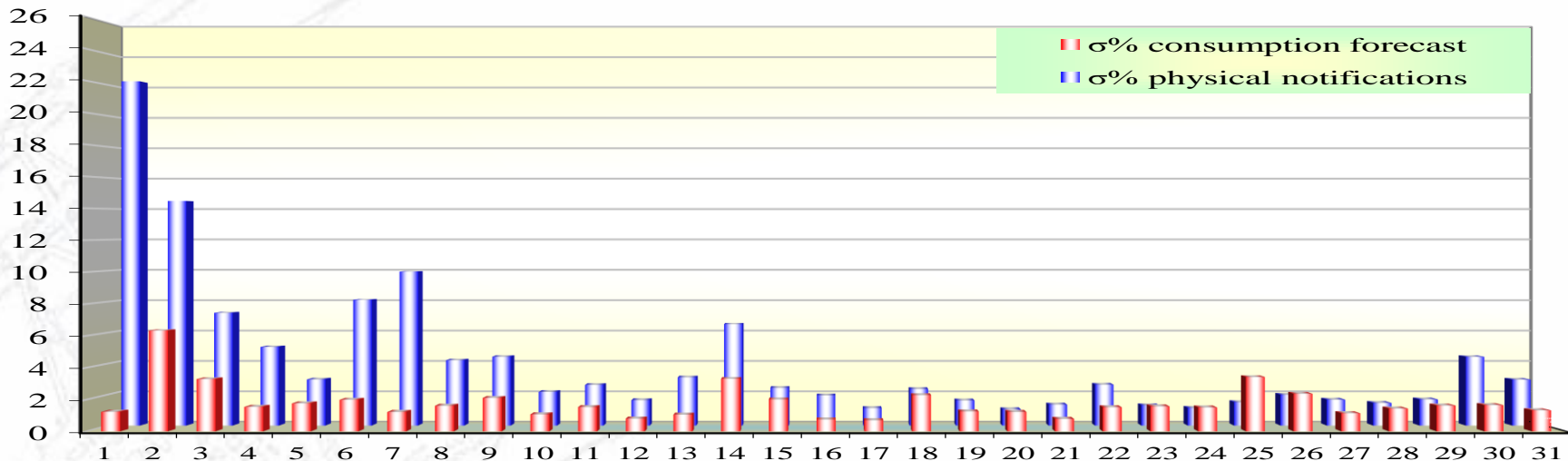
2018													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Average
%BM	5.25												5.25
%DAM	39.08												39.08
%CG	0.00												0.000
%BM-CG	5.25												5.247



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 January 2018



January 2018

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	31
σ% consumption forecast	1.23	6.33	3.28	1.53	1.75	1.98	1.21	1.61	2.10	1.06	1.52	0.79	1.04	3.30	2.00	0.74	0.69	2.27	1.25	1.22	0.78	1.51	1.57	1.50	3.41	2.36	1.13	1.43	1.62	1.65	1.32
σ% physical notifications	22.23	14.50	7.28	5.08	2.97	8.12	9.94	4.21	4.44	2.17	2.62	1.63	3.11	6.55	2.43	1.94	1.12	2.36	1.62	1.05	1.35	2.64	1.30	1.14	1.51	1.98	1.67	1.45	1.68	4.44	2.96

**σ<sub>average</sub> % consumption forecast = 1.78**

**σ<sub>average</sub> % physical notifications = 4.11**

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

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

**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 92 BRPs, 122 market participants, holding 241 commercially operating dispatchable units.

January 2018

**Downward regulation**

	Prices [lei/MWh]			Quantities [MWh]			Participants					
	Monthly	Maximum	Minimum	Total	Actually	Deviation	C1	C3	C1	C3	HHI	HHI
	average			selected	delivered	%	Number	(selected)	(actually delivered)	(selected)	(actually delivered)	
Secondary	11.62	147.00	0.10	52554.83	52554.83	0.00%	5	51.03%	94.84%	51.03%	94.84%	4231
Fast Tertiary	27.84	279.30	0.10	79306.19	70432.71	11.19%	10	51.31%	95.90%	49.29%	96.04%	3640
Slow Tertiary	9.86	250.10	1.00	34678.78	33910.55	2.22%	4	62.98%	99.82%	63.44%	99.88%	4943
				166539.80	156898.08	5.79%						

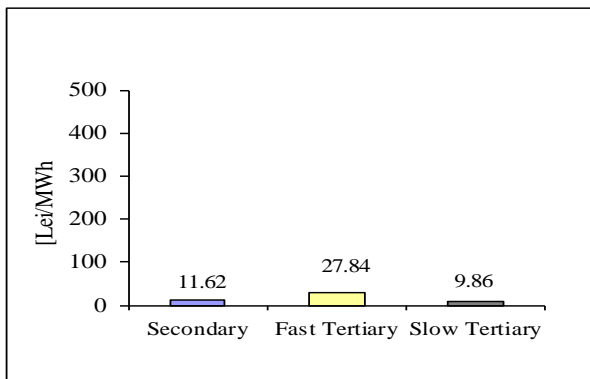
**Upward regulation**

	Monthly	Maximum	Minimum	Total	Actually	Deviation	C1	C3	C1	C3	HHI	HHI
	average			selected	delivered	%	Number	(selected)	(actually delivered)	(selected)	(actually delivered)	
Secondary	298.79	400.00	250.00	41976.66	41976.66	0.00%	5	50.94%	95.41%	50.94%	95.41%	4265
Fast Tertiary	277.46	399.00	0.10	93467.67	90773.54	2.88%	11	73.95%	88.14%	75.21%	88.46%	5615
Slow Tertiary	263.71	399.00	0.10	8154.03	7874.27	3.43%	6	63.13%	99.58%	62.19%	99.56%	4858
				143598.35	140624.46	2.07%						

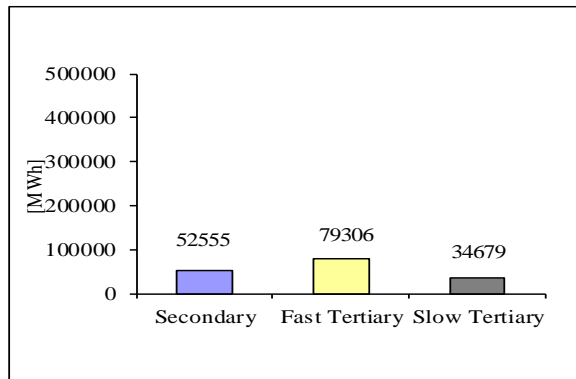
## Balancing energy – Selected prices and quantities in January 2018

January 2018

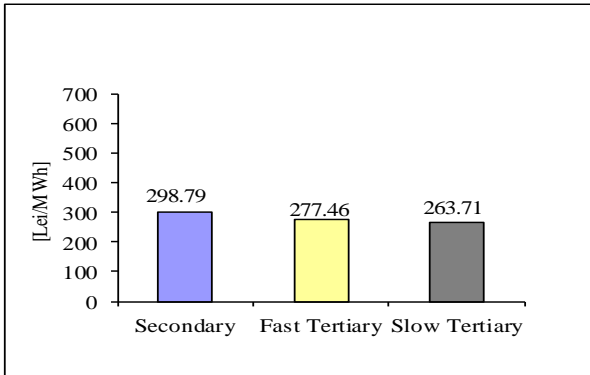
**Downward regulation - average price [lei/MWh]**



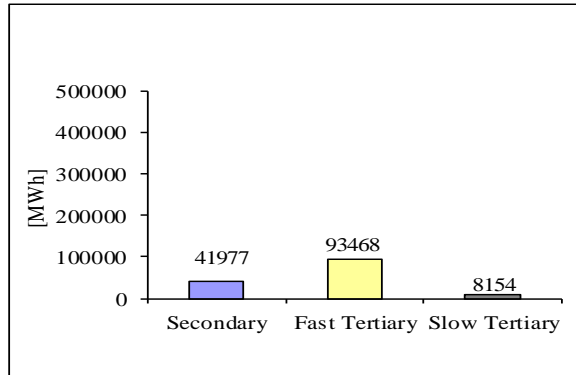
**Downward regulation - selected quantities [MWh]**



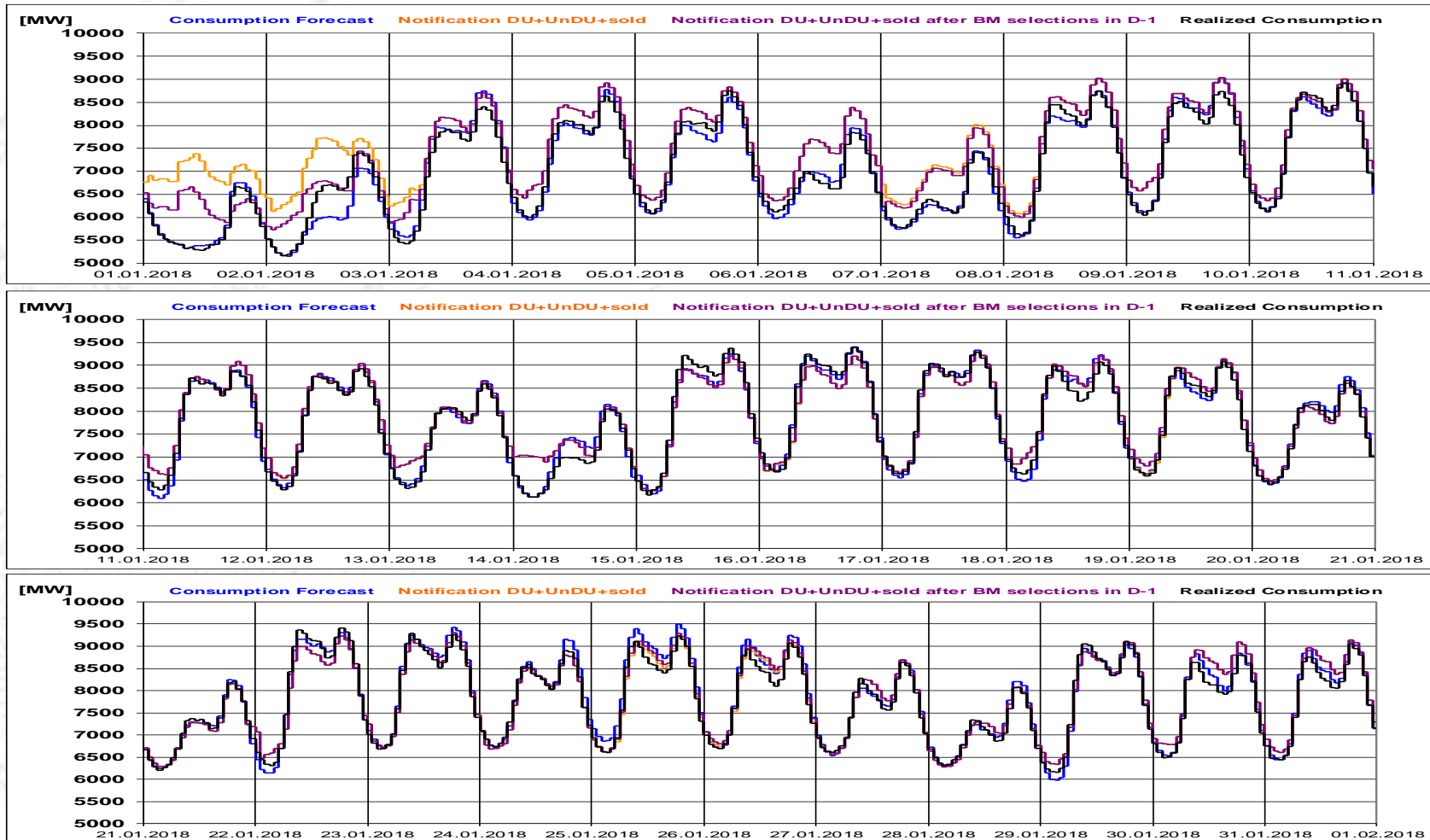
**Upward regulation - average price [lei/MWh]**



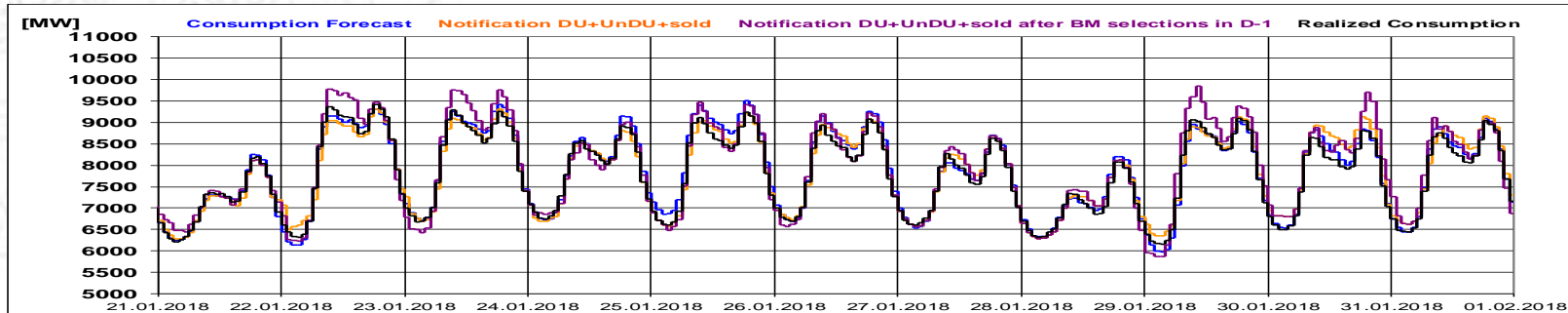
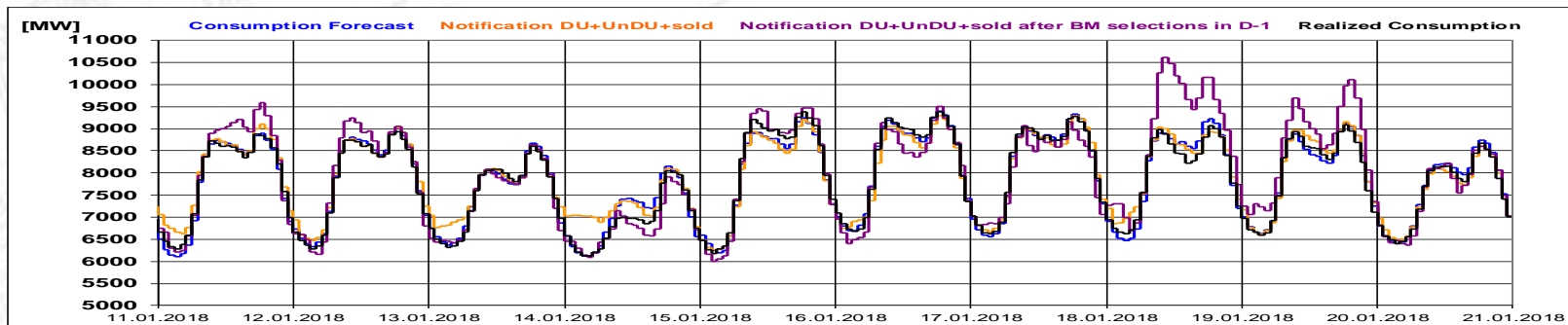
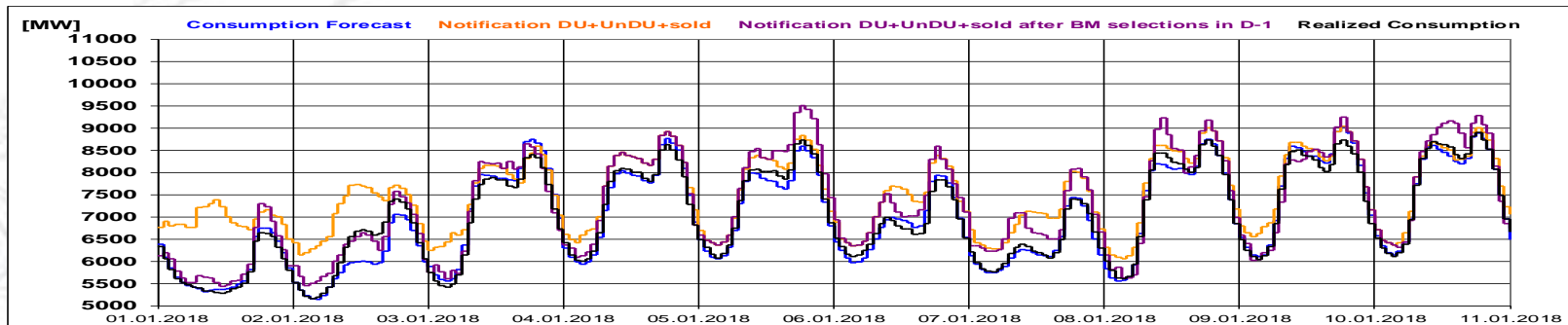
**Upward regulation - selected quantities [MWh]**



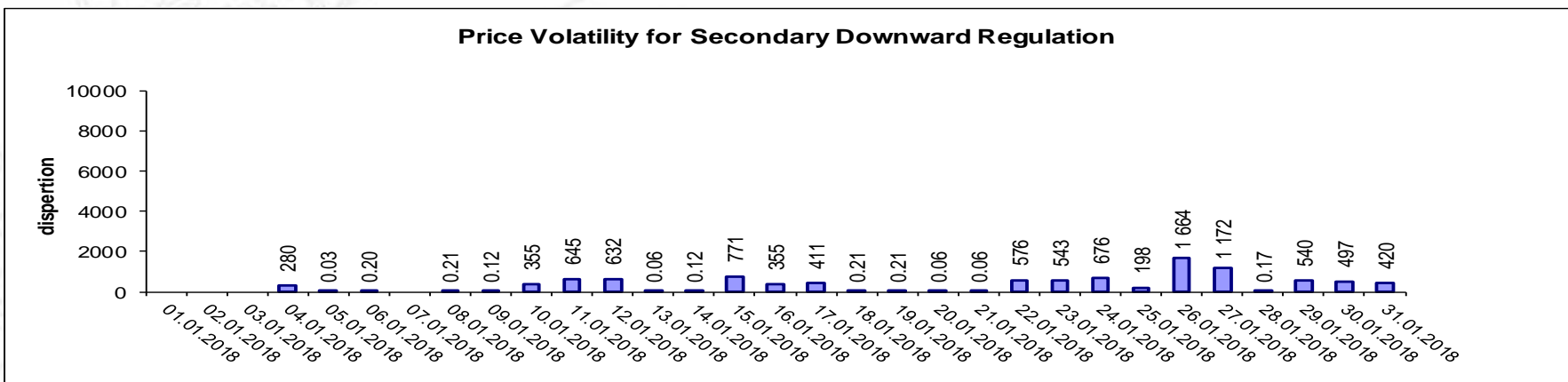
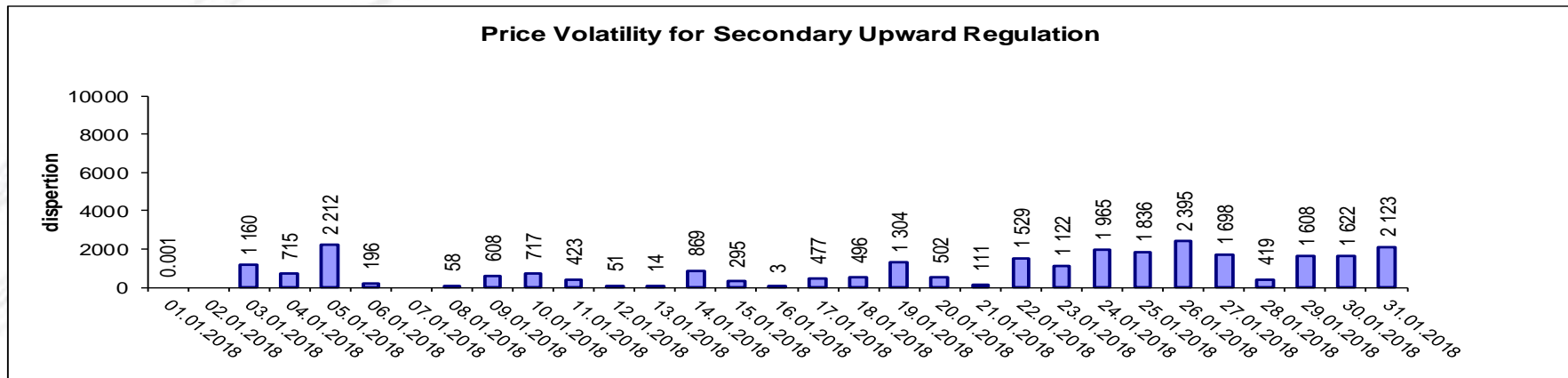
## Realized consumption. forecast. notifications. notifications after BM selections in D-1



## 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:**

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

**Public**

**Email: [Monitorizare.Piata@transelectrica.ro](mailto:Monitorizare.Piata@transelectrica.ro)**

**Fax: 021 3035630**