

# MARKET MONITORING REPORT

## Balancing Market

March 2018

## Abbrevations

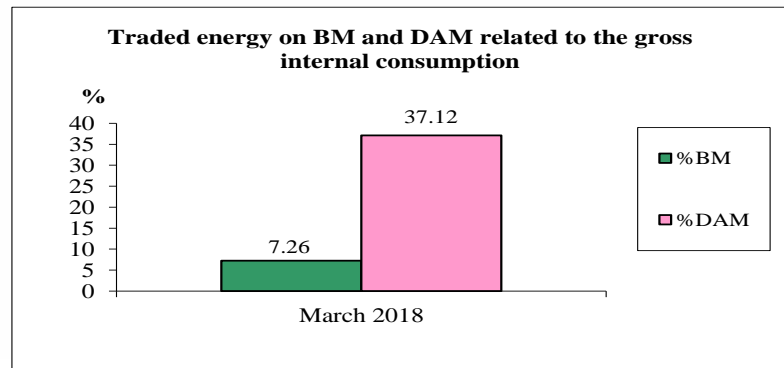
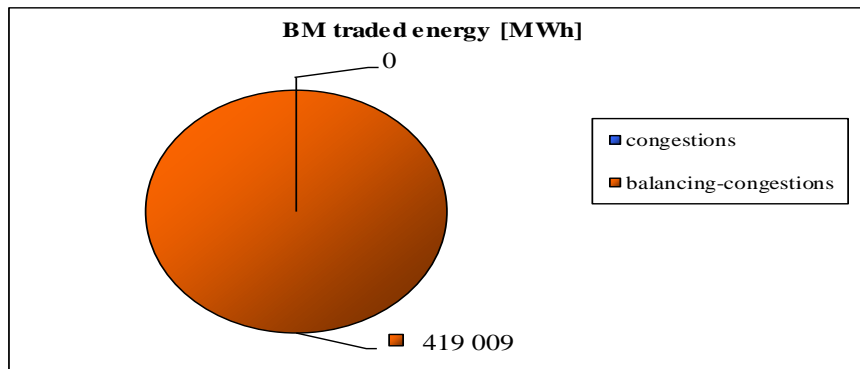
ANRE - Romanian Energy Regulatory Authority  
HHI - Herfindahl-Hirschman Index  
BRP - Balance Responsible Party  
BM - Balancing Market  
DAM - Day Ahead Market  
TSO - Transmission System Operator  
DU – Dispatchable Unit  
PN – Physical Notification  
NDC - National Dispatching Center  
C1 – The market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

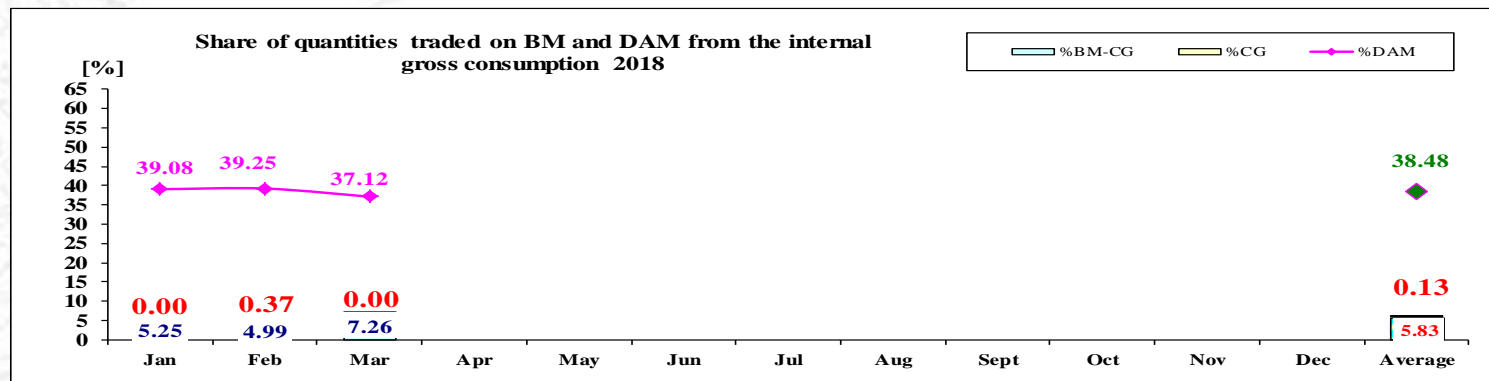
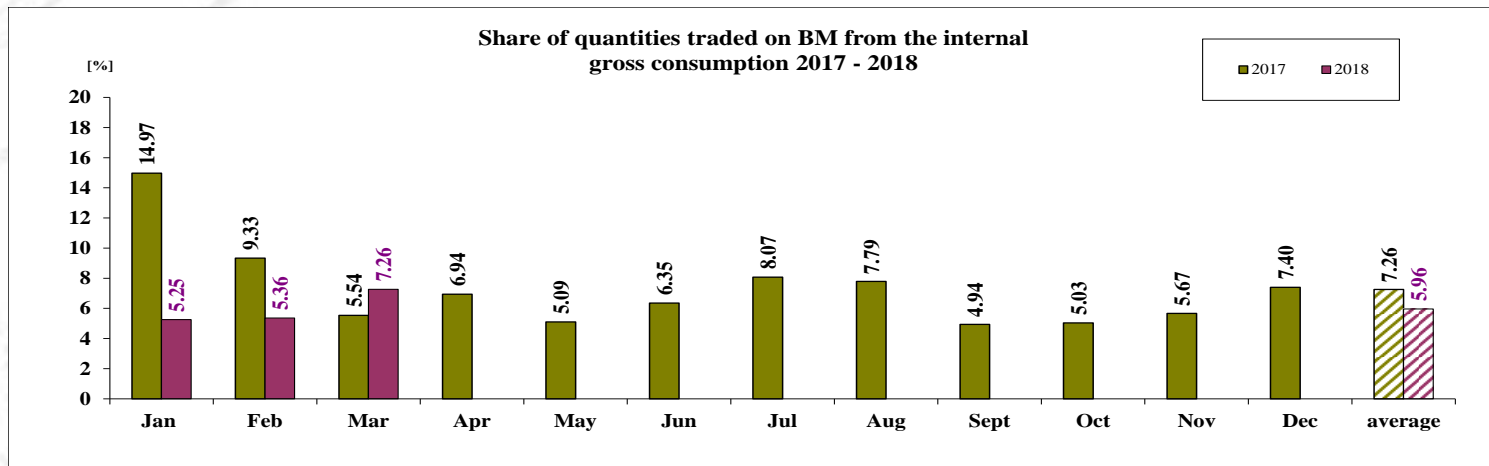
## The Balance Generation/Consumption

- The average monthly value of generated power was 8 218 MW and the actual internal gross consumption was 7 764 MW.
- The NDC consumption forecast was close to the actual consumption, the standard deviation being **1.84%**. 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 **3.85%**. The greatest daily deviation regarding the notifications was registered in **18.03 (10.03%)**.
- The energy used in March 2018 for balancing the power system and congestion management was 419 009 MWh (with an average power of 564 MW, which means **7.26 %** from the internal gross consumption).
- The energy traded in March 2018 on Day Ahead Market was 2 141 373 MWh (with an average power of 2 882 MW, which means **37.12 %** from the internal gross consumption). Data are shown in EET hours.
- The total cost of the energy traded on the Balancing Market was **92 680 357 lei** (with an average weighted price of 221 lei/MWh).

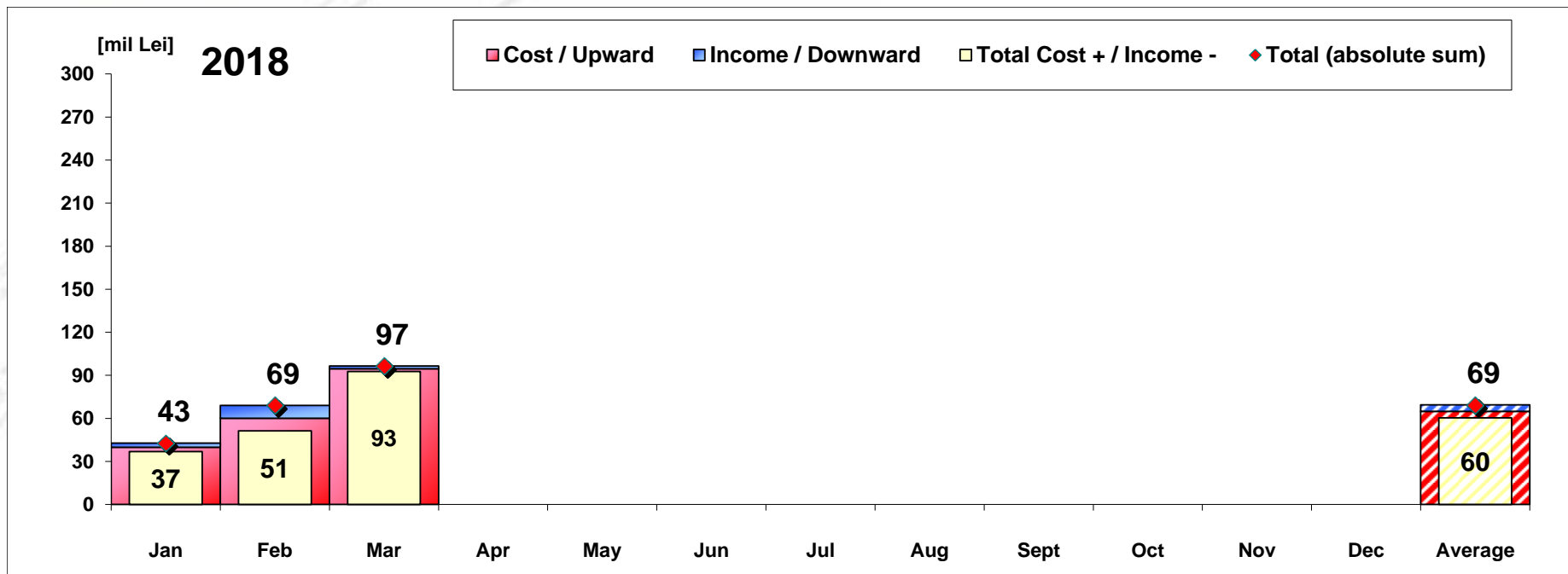


## The Balance Generation / Consumption

• 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	5.36	7.26										5.96
%DAM	39.08	39.25	37.12										38.48
%CG	0.00	0.37	0.00										0.13
%BM-CG	5.25	4.99	7.26										5.83

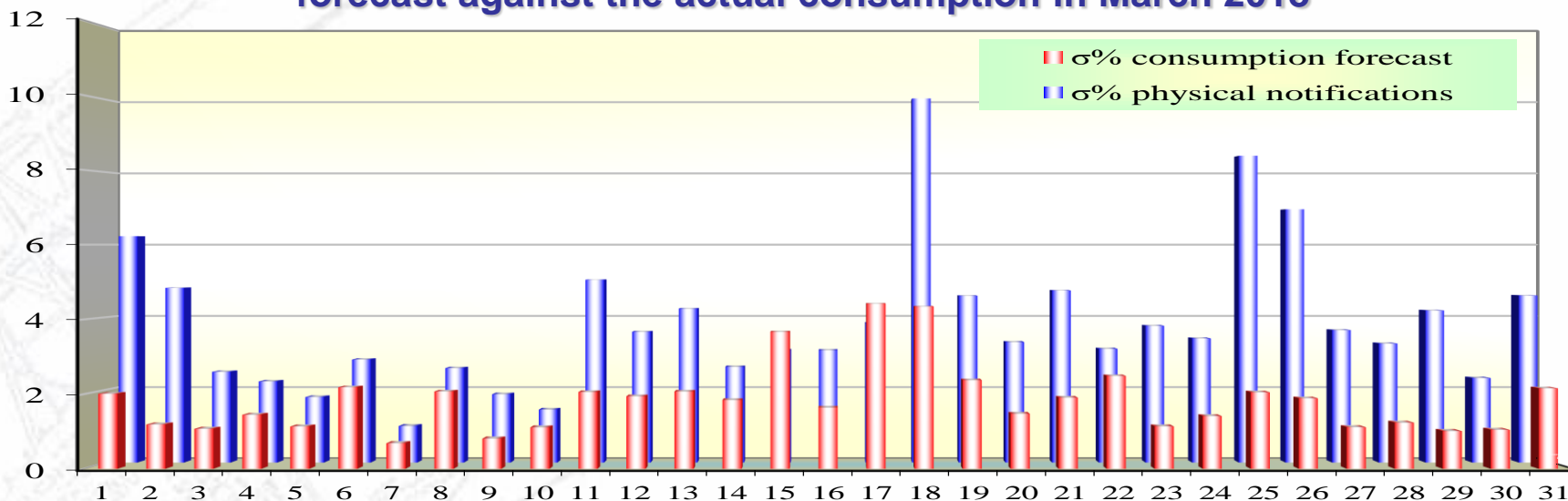


[Lei]	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Average	Total
Cost / Upward	39 819 143	60 149 383	94 609 129										64 859 218	194 577 655
Income / Downward	2 909 103	8 808 101	1 928 773										4 548 659	13 645 977
CE Cost	0	5 234 582	0										1 744 861	5 234 582
Total Cost + /	36 910 039	51 341 283	92 680 357										60 310 559	180 931 678
Total (absolute sum)	42 728 246	68 957 484	96 537 902										69 407 877	208 223 632

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 March 2018



March 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	2.01	1.19	1.07	1.45	1.13	2.18	0.68	2.07	0.81	1.11	2.05	1.94	2.07	1.84	3.67	1.64	4.42	4.34	2.37	1.47	1.90	2.49	1.13	1.41	2.05	1.89	1.11	1.23	1.01	1.04	2.16
σ% physical notifications	6.23	4.81	2.50	2.23	1.80	2.84	1.00	2.60	1.88	1.46	5.03	3.60	4.24	2.63	3.10	3.09	3.84	10.03	4.59	3.32	4.74	3.13	3.76	3.42	8.45	6.97	3.65	3.28	4.19	2.33	4.60

σ<sub>average % consumption forecast</sub> = 1.84

σ<sub>average % physical notifications</sub> = 3.85

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

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

**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 94 BRPs, 122 market participants, holding 241 commercially operating dispatchable units. Starting with 13.03.2018, solar production unit GOIESTI became undispatchable unit as result of technical connection approval modification of solar powerplant GOIESTI (Izvor de Lumina), followed by licence modification for 4,98 MW of installed power. Market participant IZVOR DE LUMINA S.R.L. (30XROIZVLUM----7) was eliminated from Balancing Market participant's list.

### March 2018

#### Downward regulation

	Prices [lei/MWh]		
	Monthly	Maximum	Minimum
	average		
Secondary	11.96	200.00	0.10
Fast Tertiary	28.75	289.00	0.10
Slow Tertiary	16.72	151.00	0.10

	Quantities [MWh]		
	Total	Actually	Deviation
	selected	delivered	%
	47008.84	47008.84	0.00%
	44638.44	38982.13	12.67%
	13489.48	12742.79	5.54%
	105136.76	98733.75	6.09%

Participants						
	C1	C3	C1	C3	HHI	HHI
						(actually delivered)
Number	(selected)		(actually delivered)		(selected)	(actually delivered)
5	60.26%	97.14%	60.26%	97.14%	4817	4817
65	57.40%	92.41%	56.28%	91.85%	3952	3830
55	59.93%	92.44%	60.21%	92.44%	4299	4383

#### Upward regulation

	Monthly	Maximum	Minimum
	average		
Secondary	306.28	449.00	249.00
Fast Tertiary	282.86	487.36	0.10
Slow Tertiary	317.19	656.00	0.10

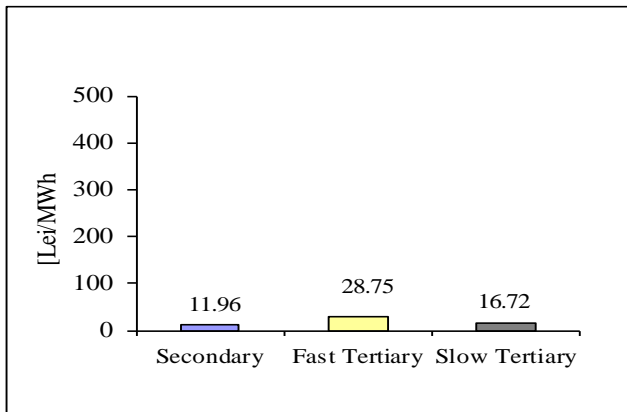
	Total	Actually	Deviation
	selected	delivered	%
	42652.77	42652.77	0.00%
	237146.38	232059.00	2.15%
	46134.08	45563.26	1.24%
	325933.23	320275.02	1.74%

	C1	C3	C1	C3	HHI	HHI
Number	(selected)		(actually delivered)		(selected)	(actually delivered)
5	58.80%	97.52%	58.80%	97.52%	4761	4761
12	79.20%	91.95%	79.88%	91.97%	6365	6464
10	56.73%	94.40%	56.27%	94.37%	4327	4301

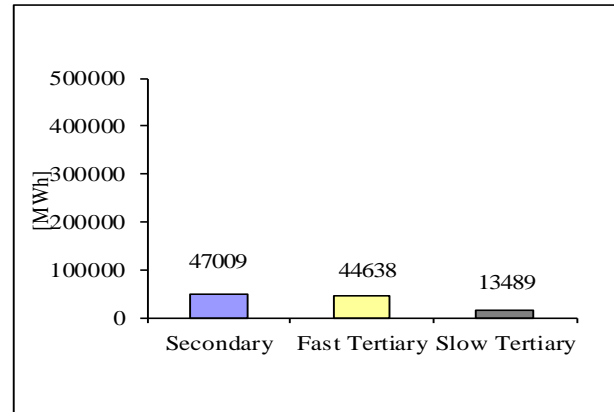
## Balancing energy – Selected prices and quantities in March 2018

March 2018

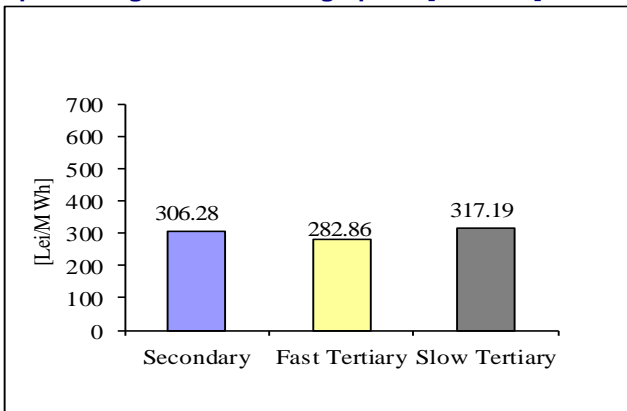
**Downward regulation - average price [lei/MWh]**



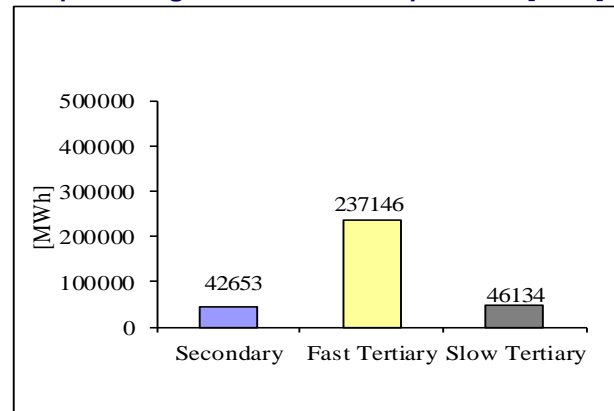
**Downward regulation - selected quantities [MWh]**



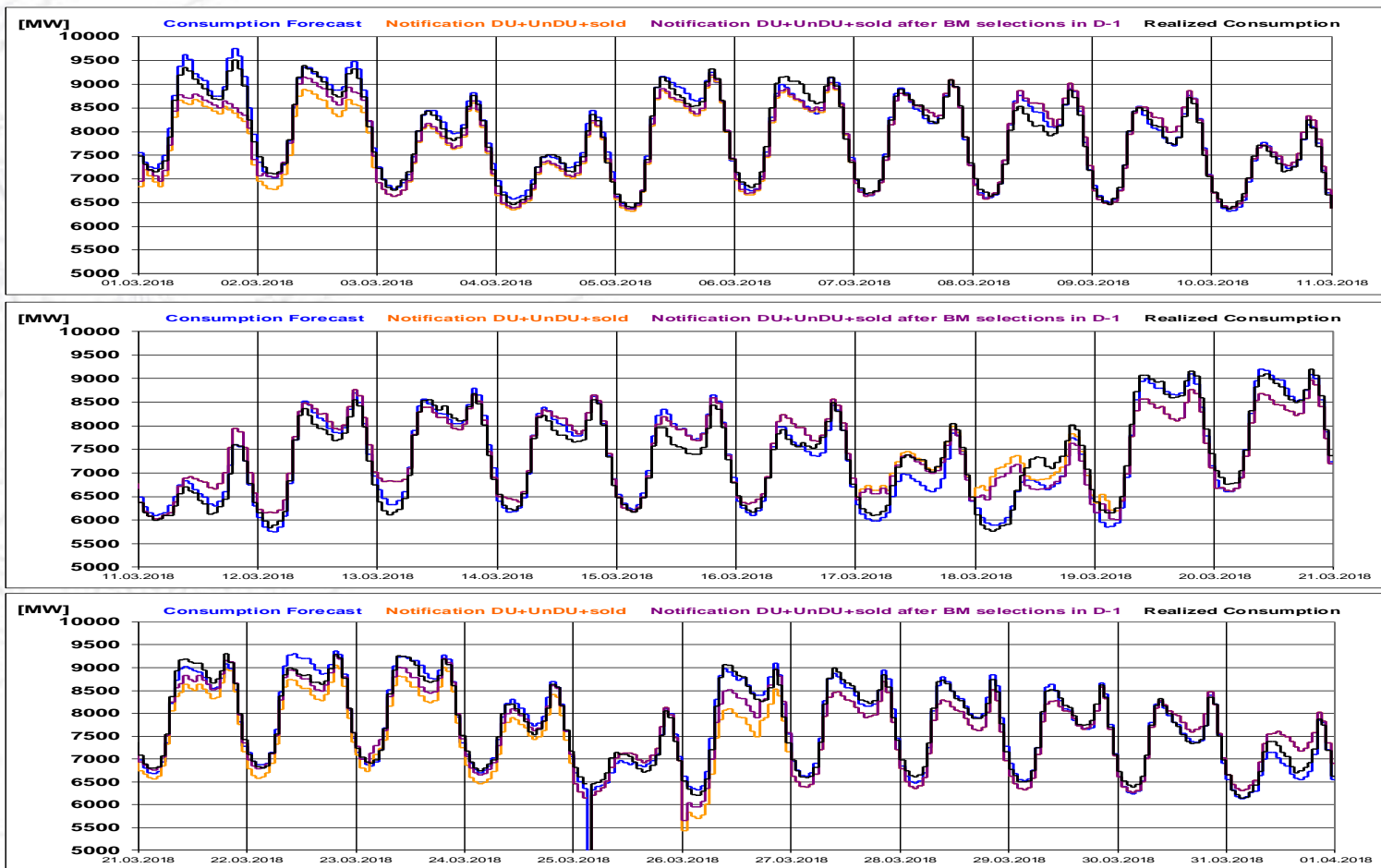
**Upward regulation - average price [lei/MWh]**



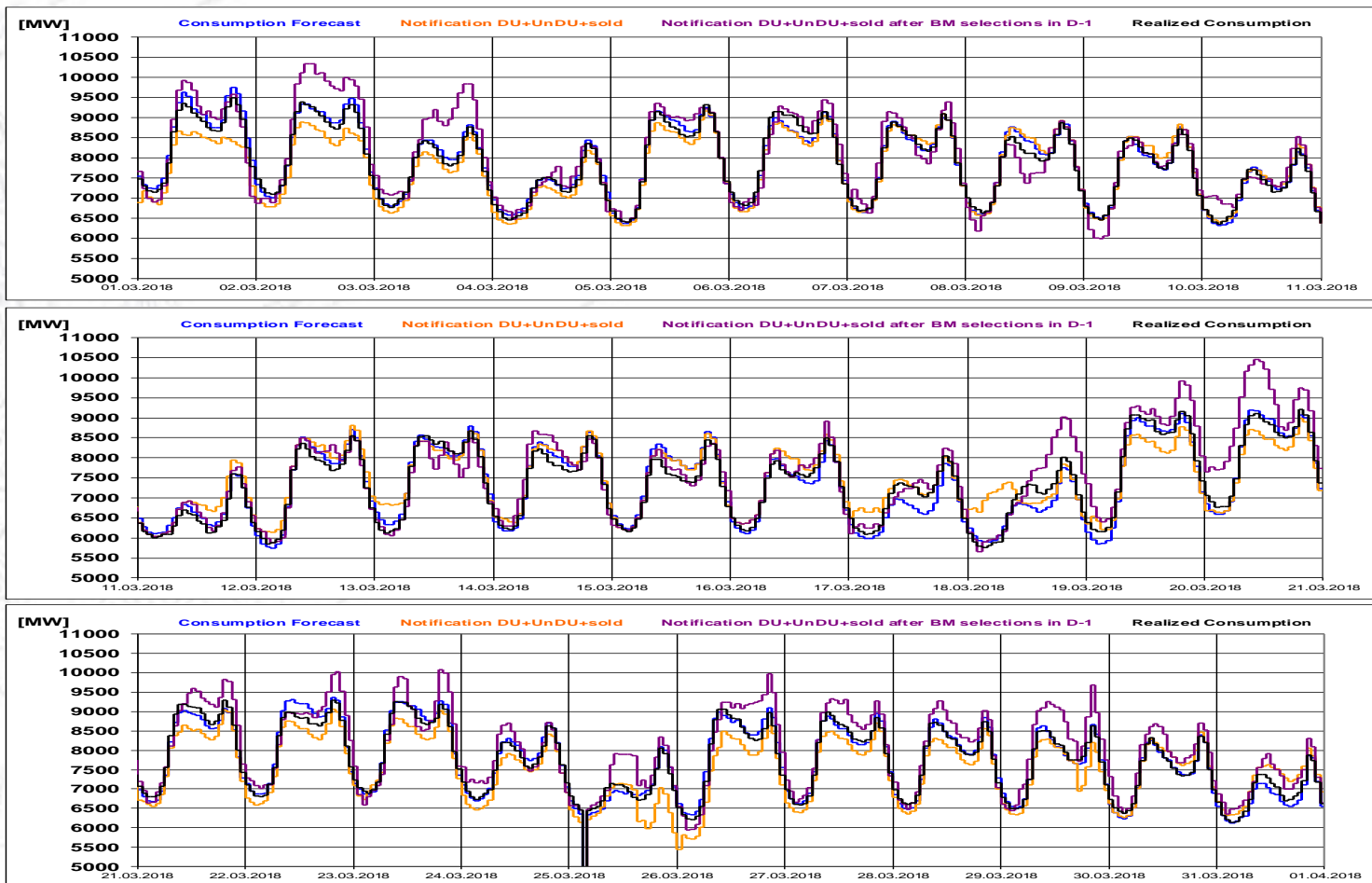
**Upward regulation - selected quantities [MWh]**



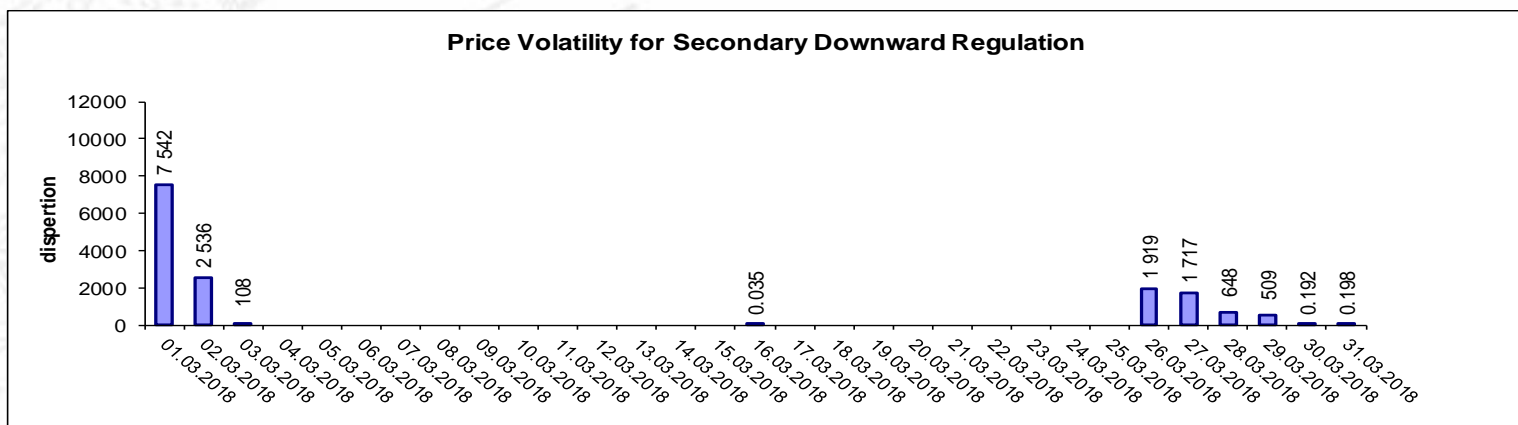
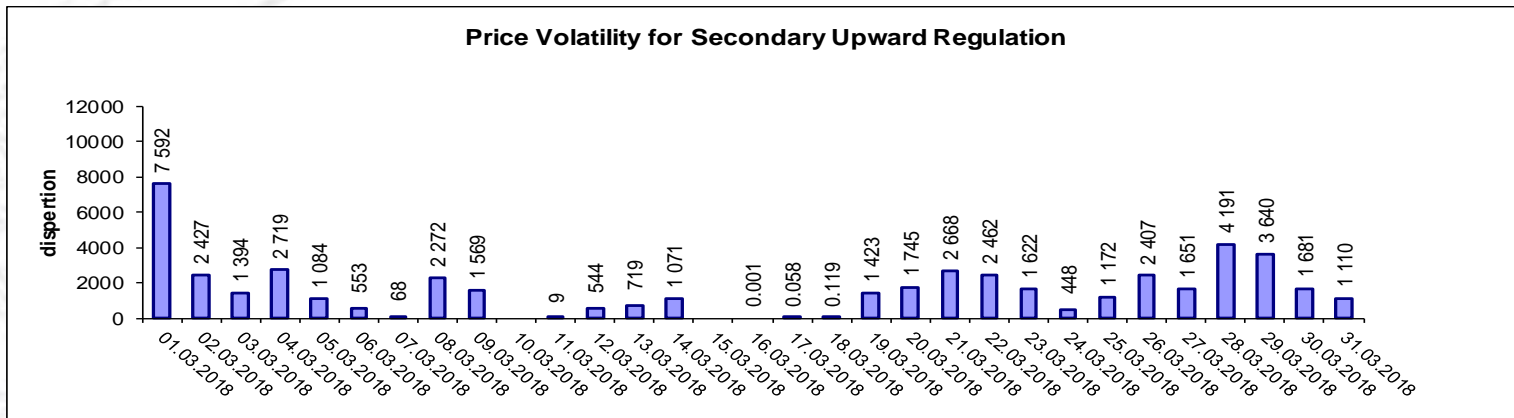
## Realized consumption. forecast. notifications. notifications after BM selections in D-1



## 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**