



**Transelectrica®**  
Societate Administrată în Sistem Dualist

# **MARKET MONITORING REPORT**

## **Balancing Market**

### **October 2022**

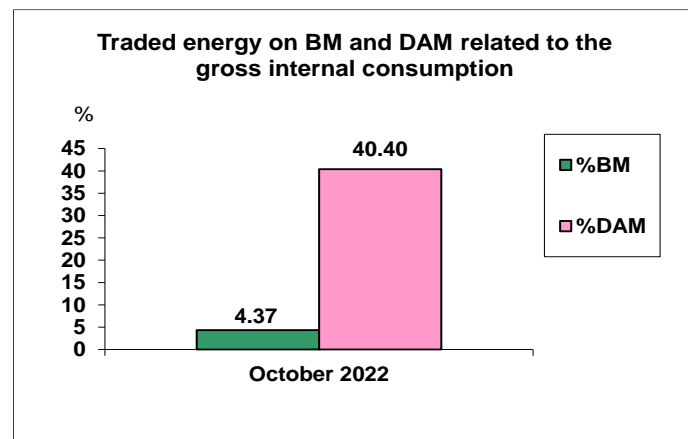
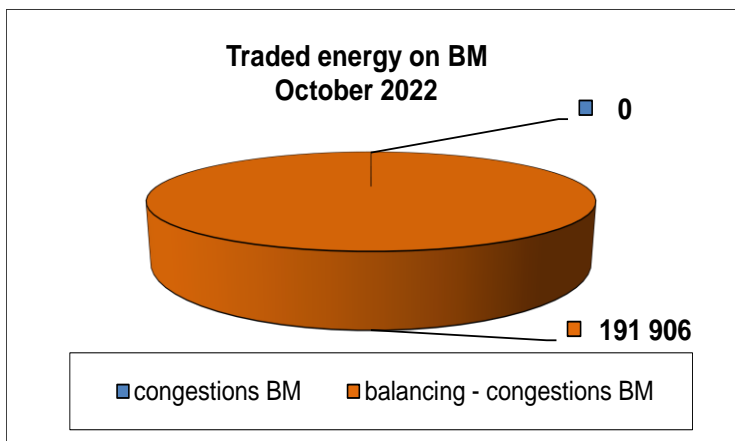
ANRE - Romanian Energy Regulatory Authority  
HHI - Herfindahl-Hirschman Index  
BRP - Balance Responsible Party  
BM - Balancing Market  
BMP – Balancing Market Participant  
DAM - Day Ahead Market  
TSO - Transmission System Operator  
DU – Dispatchable Unit  
PN – Physical Notification  
NDC - National 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  
NRA – National Regulatory Authority

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 5 884 MW and the actual internal gross consumption was 5 889 MW.
- The NDC consumption forecast was close to the actual consumption, the standard deviation being **1.62%**. 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 **6.32%**. The greatest daily deviation regarding the notifications was registered on the 2<sup>nd</sup> of October (**11.21%**).
- The energy used in October 2022 for balancing the power system and congestion management was 191 906 MWh (with an average power of 258 MW, which means **4.37%** from the internal gross consumption).
- There were no transactions for congestion management.
- The energy used for balancing the power system outside BM (with financial compensation) was 270 MWh (with an average power of 0.36 MW, which means **0.01%** from the internal gross consumption).
- The energy used in October 2022 on Day Ahead Market was de 1 772 299 MWh (with an average power of 2 379 MW, which means **40.4%** from the internal gross consumption). Data are shown in EET hours.
- The total cost of the energy traded on the Balancing Market was 32 879 664 lei (with an average weighted price of 171.33 lei/MWh).





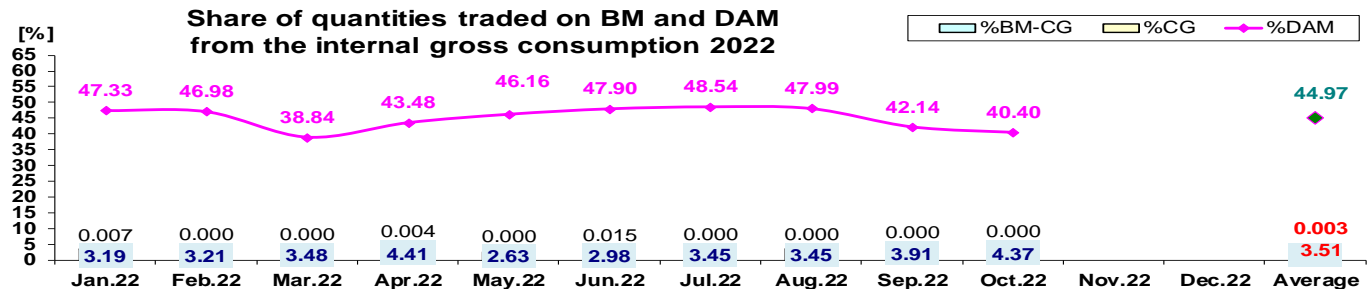
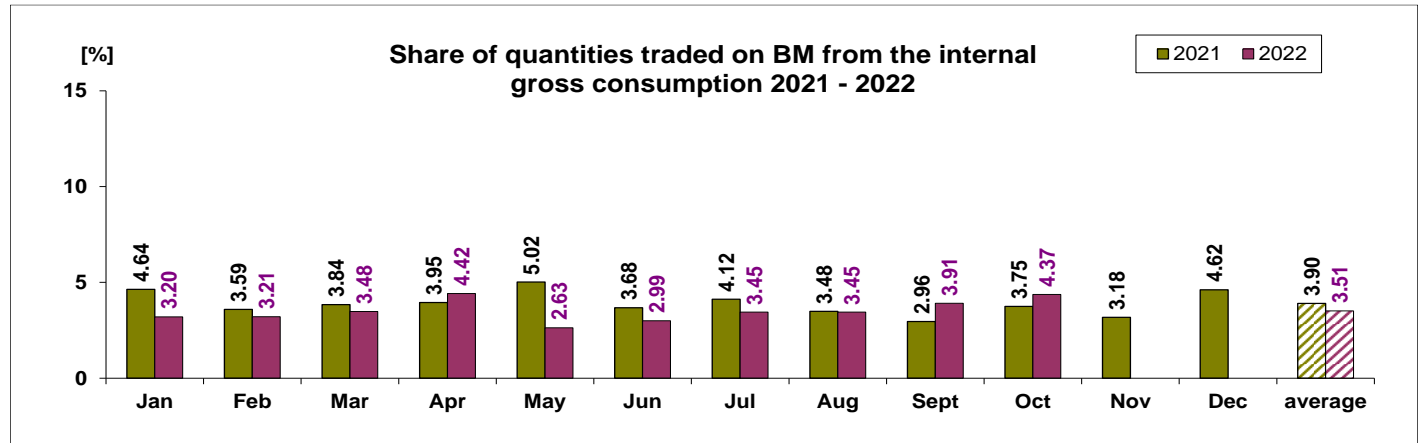
**Transelectrica®**

Societate Administrată în Sistem Dualist

# Balancing Market

## The Balance Generation / Consumption

• Monthly percentage values resulted are calculated as ratio between traded volumes on BM / outside BM with financial compensation 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).



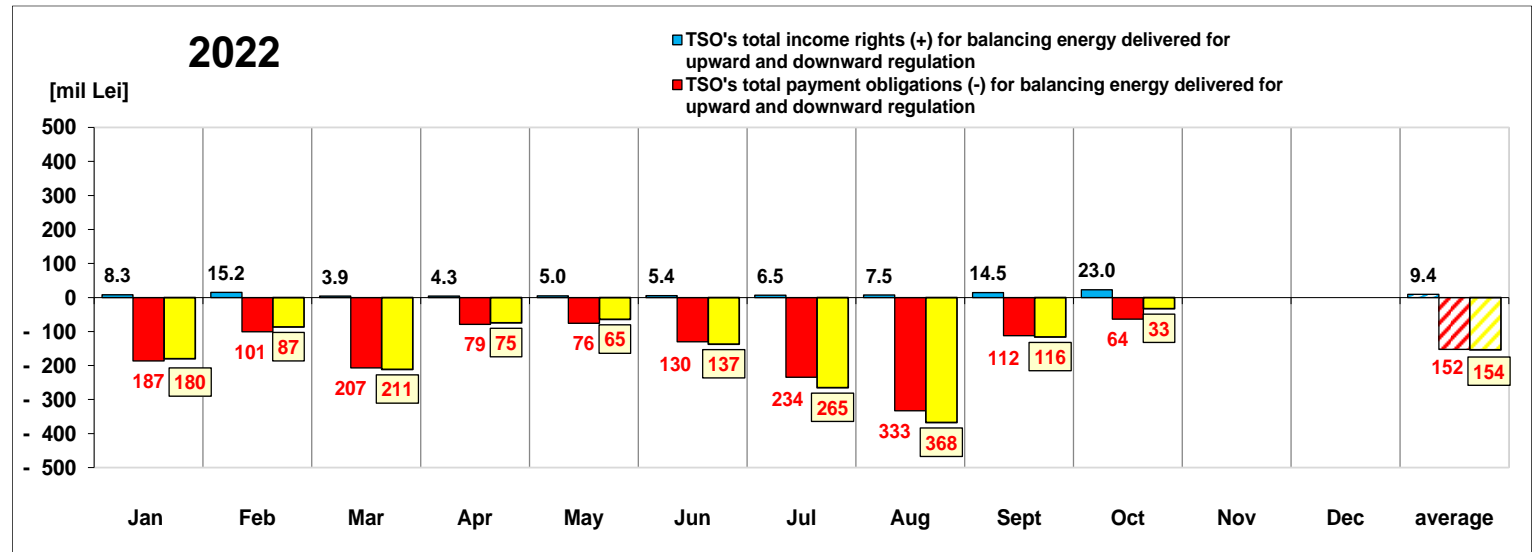
2022												
	Jan.22	Feb.22	Mar.22	Apr.22	May.22	Jun.22	Jul.22	Aug.22	Sep.22	Oct.22	Nov.22	Dec.22
%BM	3.20	3.21	3.48	4.42	2.63	2.99	3.45	3.45	3.91	4.37		3.51
%DAM	47.33	46.98	38.84	43.48	46.16	47.90	48.54	47.99	42.14	40.40		44.97
%CG	0.007	0.000	0.000	0.004	0.000	0.015	0.000	0.000	0.000	0.000		0.0026
%BM-CG	3.191	3.206	3.479	4.412	2.631	2.979	3.452	3.448	3.912	4.374		3.509
% outside BM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01		0.00



Transelectrica®

Societate Administrată în Sistem Dualist

# Balancing Energy Market Transactions



[Lei]	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	average	Sum
TSO's income rights / payment obligations for balancing energy delivered for downward regulation														
incomes (+) prices ≥ 0	8 344 244	15 164 350	3 932 020	4 322 327	4 990 345	5 393 527	6 457 040	7 512 705	14 481 440	22 974 485			9 357 248	93 572 482
payments (-) prices < 0	- 40 999	- 12 132	- 96 136	- 131 045	- 1 648	- 22 991	- 374	- 15 549	- 3 839	-11 358 266			-1 168 298	-11 682 979
TSO's payment obligations / income rights for balancing energy delivered for upward regulation														
payments (-) prices ≥ 0	-186 598 444	-100 703 503	-206 992 197	-78 969 465	-75 510 505	-130 258 379	-234 452 122	-333 300 725	-112 433 467	-52 168 199			-151 138 701	-1511 387 007
incomes (+) prices < 0	0	0	0	0	0	0	0	0	0	0			0	0
TSO's total income rights (+) for balancing energy delivered for	8 344 244	15 164 350	3 932 020	4 322 327	4 990 345	5 393 527	6 457 040	7 512 705	14 481 440	22 974 485			9 357 248	93 572 482
TSO's total payment obligations (-) for balancing energy delivered for	-186 639 443	-100 715 635	-207 088 333	-79 100 510	-75 512 153	-130 281 369	-234 452 496	-333 316 275	-112 437 306	-63 526 465			-152 306 999	-1523 069 986
TSO's total cost for balancing the system	-180 209 876	-86 965 620	-211 125 690	-74 719 809	-64 511 950	-136 923 991	-265 197 031	-367 812 338	-115 809 867	-32 879 664			-153 615 584	-1536 155 837
Value of transactions outside BM (with financial	0	0	0	0	0	0	0	0	0	0			0	0
Congestion Cost on BM	- 157 055	0	- 3 224	- 30 924	0	- 29 640	0	0	0	0			- 22 084	- 220 843
Congestion Cost outside BM	0	0	0	0	0	0	0	0	0	0			0	0

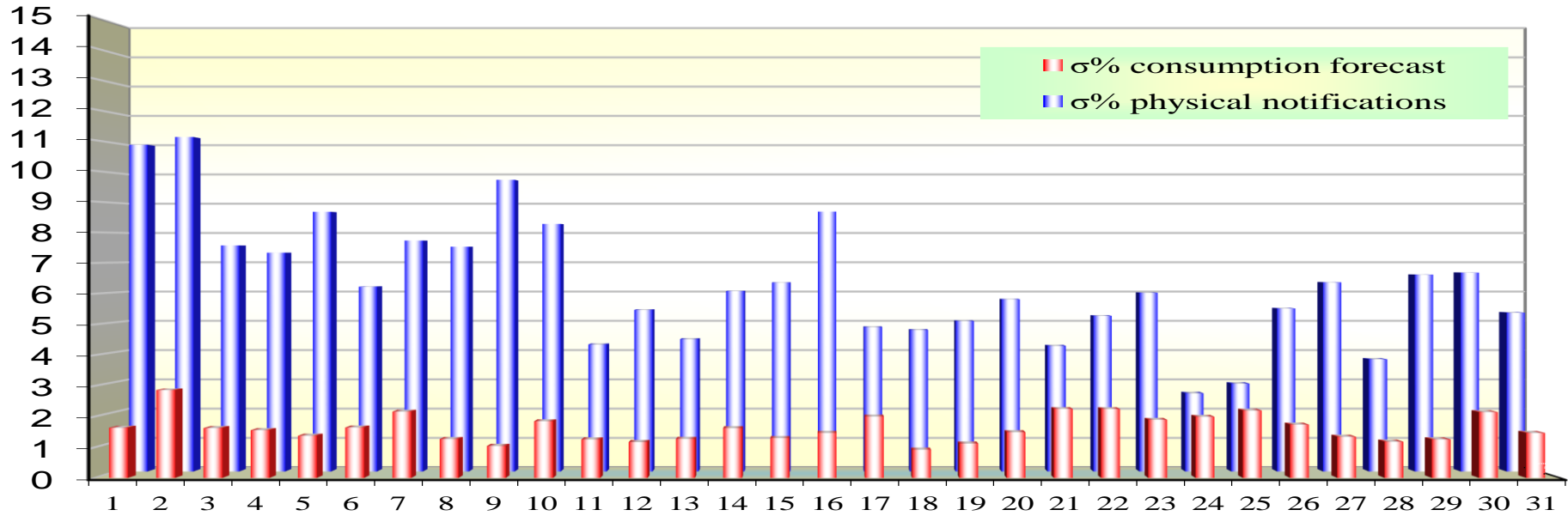
\* The annual average value was obtained as arithmetic average of the monthly values.



Transelectrica®  
Societate Administrată în Sistem Dualist

# Balancing Market

Standard deviation of physical notifications and consumption forecast against the actual consumption in October 2022



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	1.63	2.86	1.62	1.56	1.37	1.64	2.16	1.26	1.04	1.84	1.25	1.17	1.27	1.62	1.29	1.47	2.00	0.92	1.12	1.49	2.25	2.24	1.89	1.99	2.19	1.74	1.34	1.18	1.25	2.14	1.46
σ% physical notifications	10.95	11.21	7.57	7.33	8.70	6.19	7.74	7.53	9.77	8.29	4.25	5.41	4.43	6.04	6.33	8.71	4.83	4.74	5.04	5.77	4.21	5.21	5.99	2.62	2.94	5.46	6.34	3.76	6.59	6.66	5.32

σ<sub>average% consumption forecast</sub> = 1.62  
σ<sub>average % physical notifications</sub> = 6.32

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

**R = Realized Consumption;**

**N = Physical Notifications;**

**P = Consumption Forecast.**

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

Public

# Balancing Market

## Balancing energy – Selected prices and quantities

• At the beginning of the month on the Balancing Market operated 74 BRPs, 90 market participants, holding 180 commercially operating dispatchable units. Starting with 20<sup>th</sup> of October 2022 was registered in the list of BMP, SOCIETATEA ELECTROCENTRALE CRAIOVA (30XROELECRAIOVAB), having in its composition the dispatchable production units CRA12 (30WCRAICRA21---Y) and CRA22 (30WCRAICRA22---T), these being excluded from the composition of CE OLTENIA S.A. (30XROCENCRAIOVAM).

### October 2022

#### Downward Regulation

	Prices			Quantities			Participants					
	Weighted Average	Maximum	Minimum	Selected	Actually Delivered	Deviation	C1	C3	C1	C3	HHI	HHI
	[lei/MWh]	[lei/MWh]	[lei/MWh]	[MWh]	[MWh]	[%]	Number	(selected)	(actually delivered)	(selected)	(selected)	(actually delivered)
Secondary	0.10	0.10	-10.00	31824.53	31824.53	0.00%	3	68.75%	100%	68.75%	100%	5565
Fast Tertiary	77.36	270.00	-9000.00	135937.21	132727.82	2.36%	16	38.88%	90.33%	39.11%	90.59%	2900
Slow Tertiary	-	-	-	0.00	-	-	0	-	-	-	-	-
				167761.74	164552.35	1.91%						

#### Upward Regulation

	Prices			Quantities			Participants					
	Weighted Average	Maximum	Minimum	Selected	Actually Delivered	Deviation	C1	C3	C1	C3	HHI	HHI
	[lei/MWh]	[lei/MWh]	[lei/MWh]	[MWh]	[MWh]	[%]	Number	(selected)	(actually delivered)	(selected)	(selected)	(actually delivered)
Secondary	2160.19	5000.00	1300.00	14954.89	14954.89	0.00%	3	69.49%	100%	69.49%	100%	5686
Fast Tertiary	1604.69	3892.68	909.06	12533.51	12399.01	1.07%	3	95.81%	100%	95.97%	100%	9194
Slow Tertiary	-	-	-	0.00	-	-	0	-	-	-	-	-
				27488.40	27353.89	0.49%						



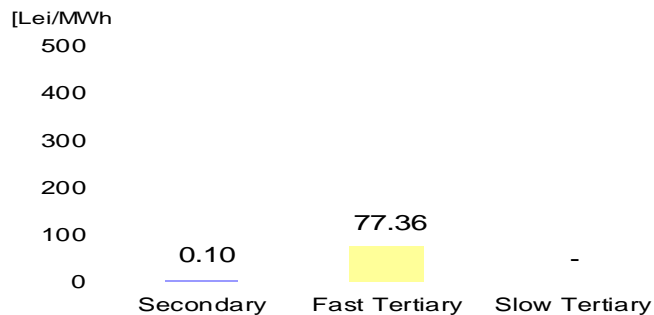
Transelectrica®  
Societate Administrată în Sistem Dualist

October 2022

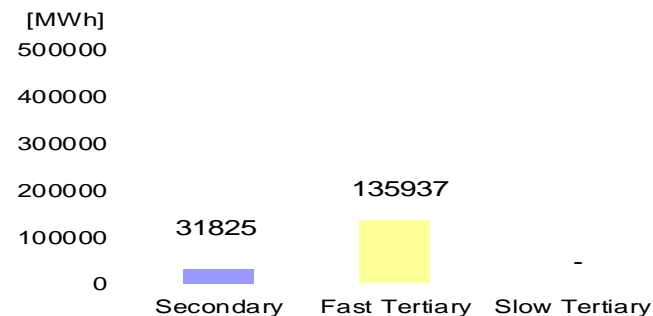
# Balancing Market

## Balancing energy – Selected prices and quantities

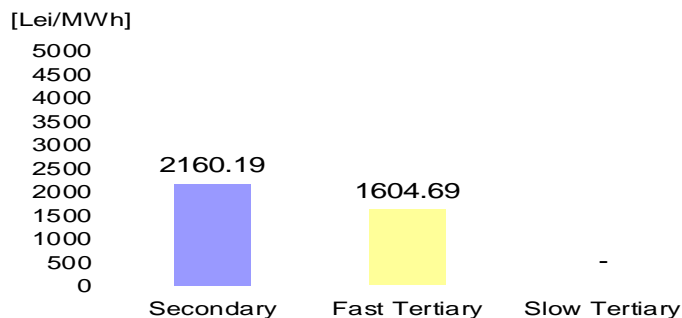
Downward regulation - average price [lei/MWh]



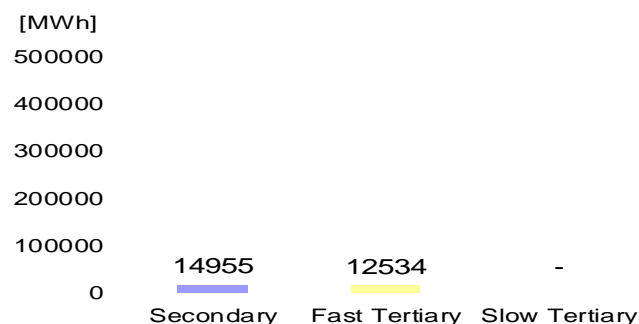
Downward regulation - selected quantities



Upward regulation - average price [lei/MWh]



Upward regulation - selected quantities



$$\text{Price}_{\text{average weighted, regulation type, direction}} = \frac{\sum (Q_{i,j} * P_{i,j})}{\sum Q_{i,j}}$$

where  $Q_{i,j}$ ,  $P_{i,j}$  represents the quantity, respectively the price of the energy selected, corresponding to the selected transaction  $j$  in the dispatching interval  $i$ .

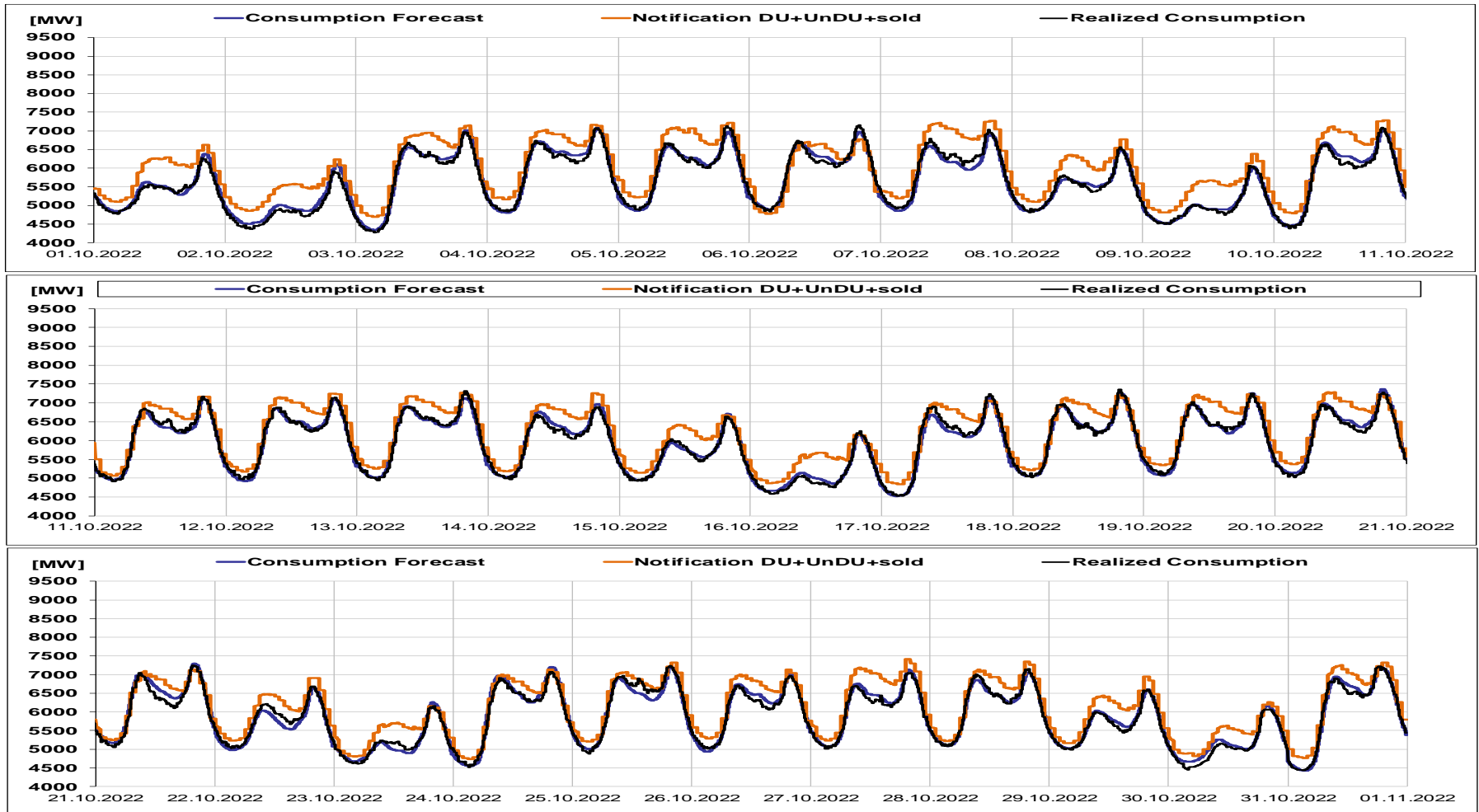


Transelectrica®

Societate Administrată în Sistem Dualist

# Balancing Market

## Realized consumption, forecast, notifications in D-1



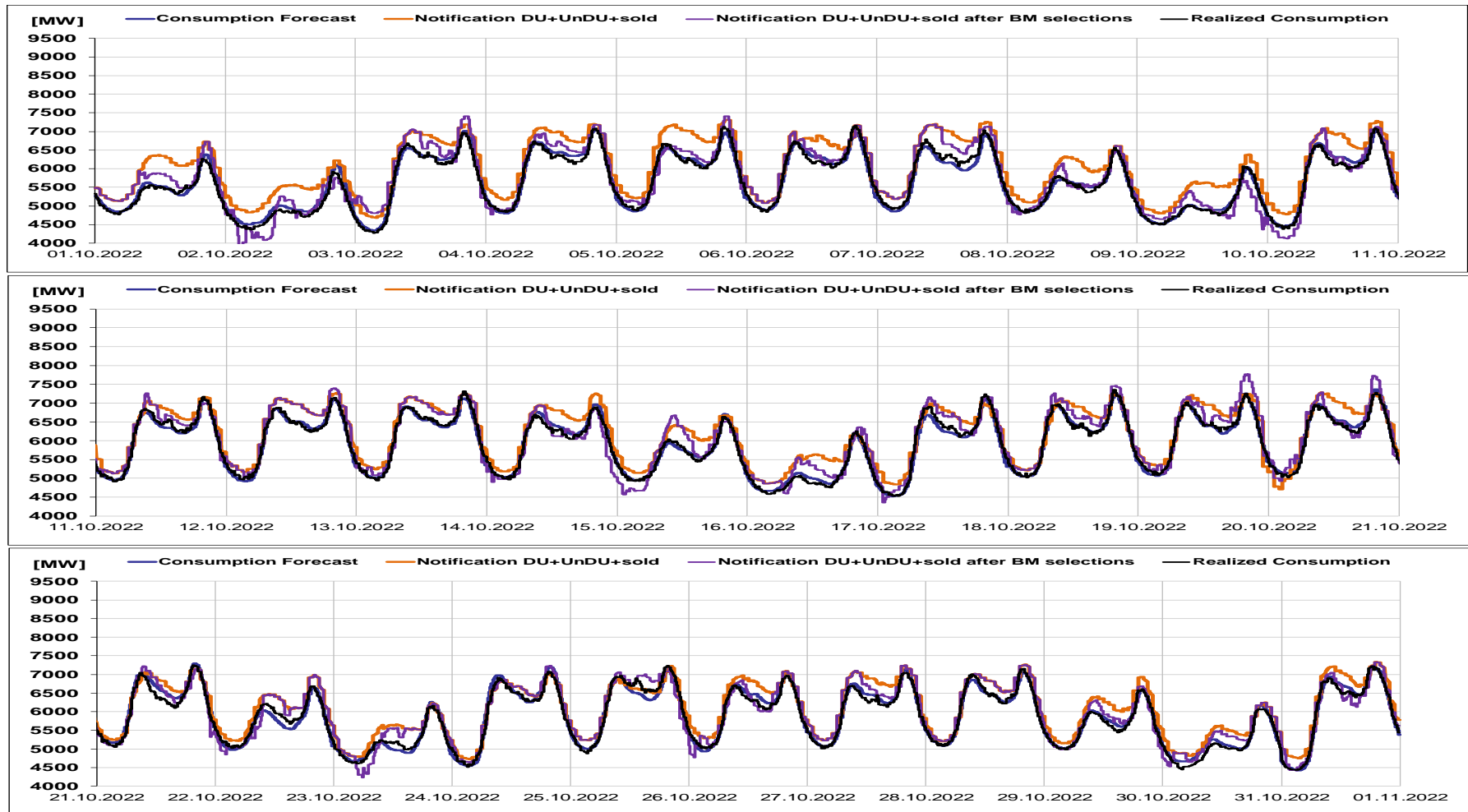


Transelectrica®

Societate Administrată în Sistem Dualist

# Balancing Market

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



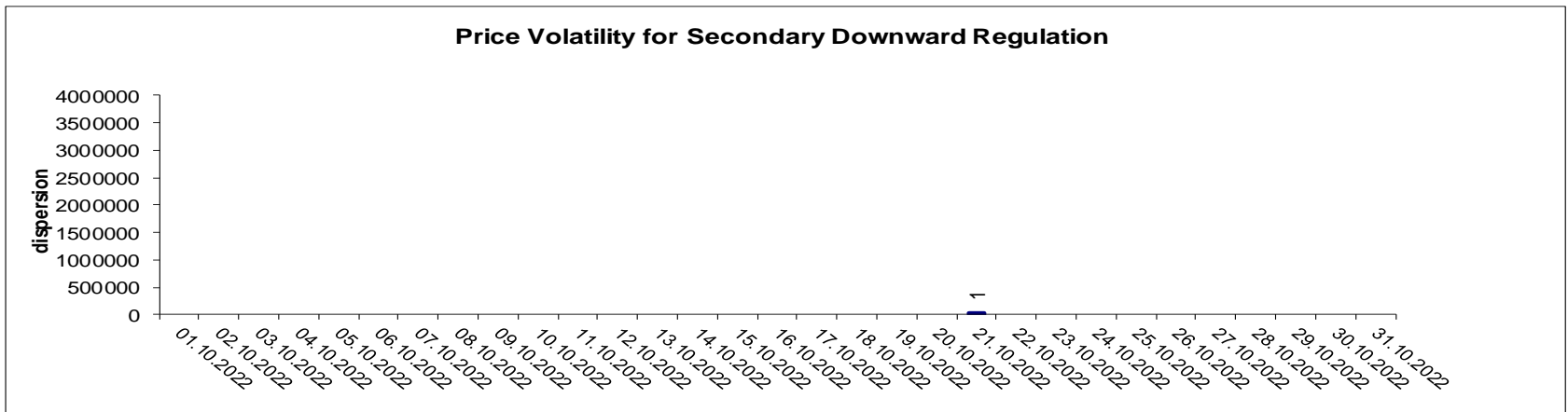
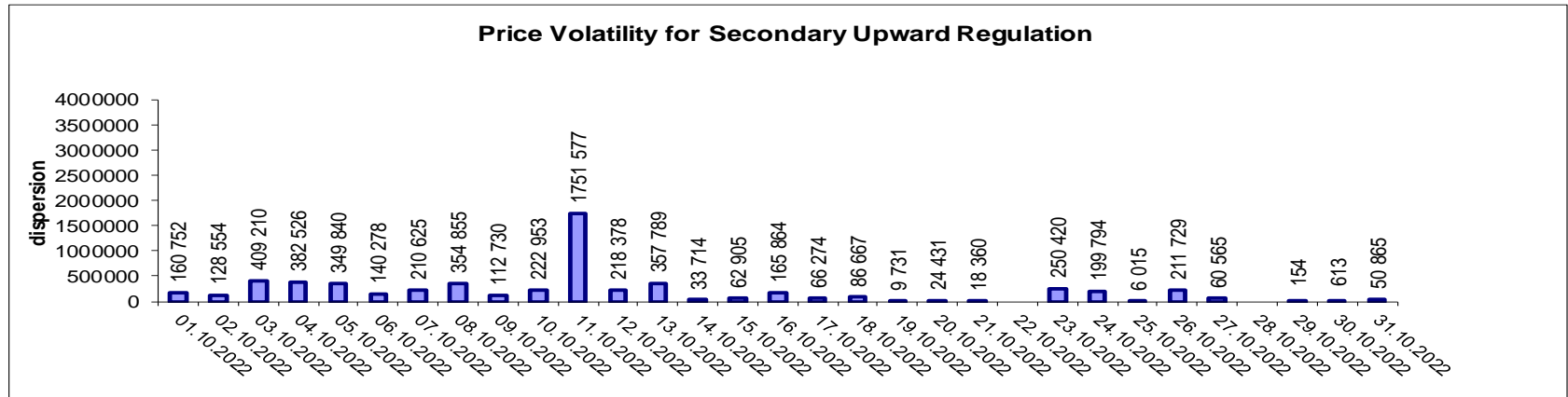


Transelectrica®

Societate Administrată în Sistem Dualist

# Balancing Market

## Indicators – Price Volatility for Secondary Regulation



Volatility = price dispersion on studied interval:

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



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

**Fax: 021 3035630**