



**Transelectrica®**  
Societate Administrată în Sistem Dualist

# **MARKET MONITORING REPORT**

## **Balancing Market**

### **April 2024**

ANRE - Romanian Energy Regulatory Authority  
HHI - Herfindahl-Hirschman Index  
BRP - Balance Responsible Party  
BMP - Balancing Market Participant  
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  
NRA – National Regulatory Authority

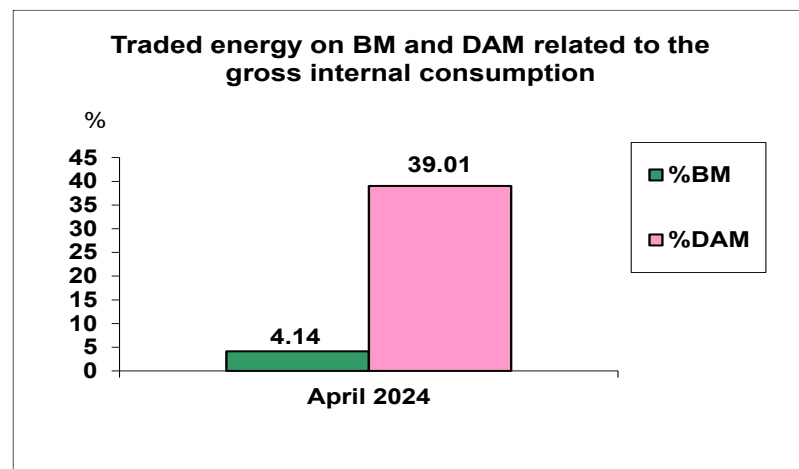
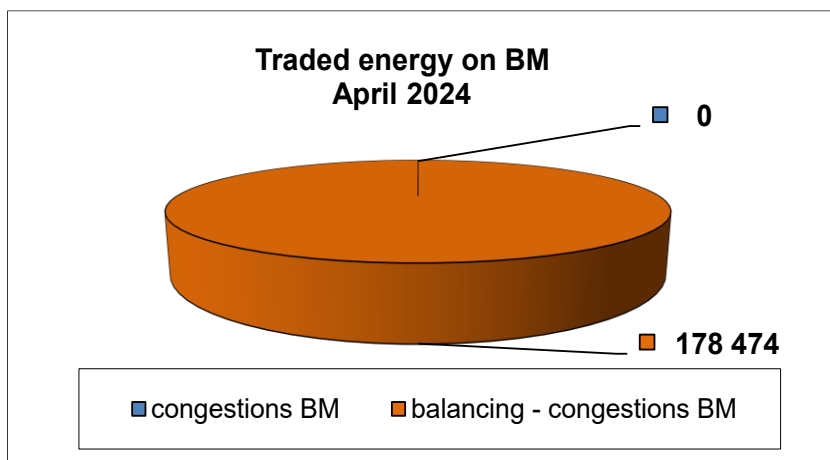
According to the Commercial Code, Transelectrica, the Romanian Transmission System Operator, operates and monitors the activity of 3 types of markets: Balancing Market, Ancillary Services Market and Market for Allocation of Cross-Border Capacities.

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).

- At the beginning of the month on the Balancing Market operated 135 BRPs, 91 market participants, holding 180 commercially operating dispatchable units. According to the provisions of ANRE Order no. 213/2020, as subsequently amended and supplemented during the month, the following changes were made:
  - were registered in the BM during the probationary period, the following BRPs:
    - ✓ GREEN FORD SOLAR (PROBE) (30XROGREENFORDSZ) (01.04)) following the start of the trial period for the solar production unit GREENFORD\_PROBE;
    - ✓ ICD HEXAGON DEVELOPMENT (PROBE) (30XROHEXAGONX--H) (01.04), following the start of the trial period for the solar production unit HEXAGON\_PROBE;
    - ✓ ENERGO NATUR IMPEX (PROBE) (30XRONATURIMP-PX) (01.04), following the start of the trial period for the solar production unit ULIESTI\_PROBE;
    - ✓ MONSSON (PROBE) (30XROMONSSONP--F) (11.04), following the start of the trial period for the solar production unit GALBIORI3\_PROBE;
    - ✓ HELIOLUX (PROBE) (30XROHELIOLUXPVV) (12.04), following the start of the trial period for the solar production unit PARAU\_PROBE;
    - ✓ STAGESAN GROUP (PROBE) (30XROSTAGESAN-PM) (19.04), following the start of the trial period for the solar production unit TELESTI\_PROBE;
    - ✓ ML&MV GREEN ENERGY (30XROMLMVGE---PD) (20.04), following the start of the trial period for storage unit GALBIORI2\_PROBE and for the solar production unit IERNUT\_PROBE;
    - ✓ ML&MV GREEN ENERGY (30XROMLMVGE---PD) (20.04), following the start of the trial period for storage unit GALBIORI2\_PROBE and for the solar production unit REGHIN\_PROBE;
  - exited BM BRP ACV SOLAR ENERGY (PROBE) (30XROACVSENERGYU) (20.04) as a result of the termination of the testing period for the solar production ACV\_PROBE.

## The Balance Generation/Consumption

- The average monthly value of generated power was 5 750 MW and the actual internal gross consumption was de 5 989 MW.
- The NDC consumption forecast was close to the actual consumption, the standard deviation being 3.17%. 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 **9.41%**. The greatest daily deviation regarding the notifications was registered on the 7<sup>th</sup> of April (**19.84%**).
- The energy used in April 2024 for balancing the power system and congestion management was 178 474 MWh (with an average power of 248 MW, which means 4.14% from the internal gross consumption).
- The energy used for transactions outside BM (with financial compensation) was 7 556 MWh (with an average power of 10MW, which means 0.18% from internal gross consumption)
- The energy used in April 2024 on Day Ahead Market was de 1 682 182 MWh(with an average power of 2 336 MW, which means 39.01% from the internal gross consumption). Data are shown in EET hours.
- The total cost of the energy traded on the Balancing Market was 284 999 109 lei (with an average weighted price of 1 596,87 lei/MWh).



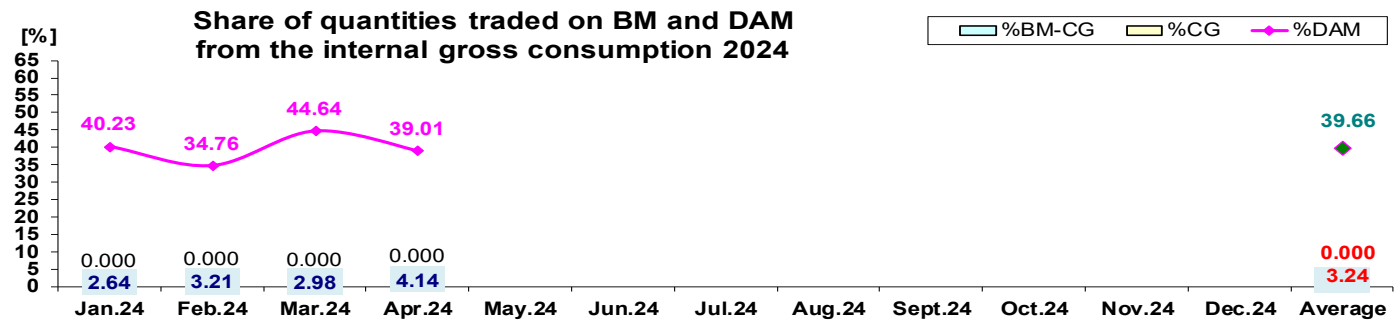
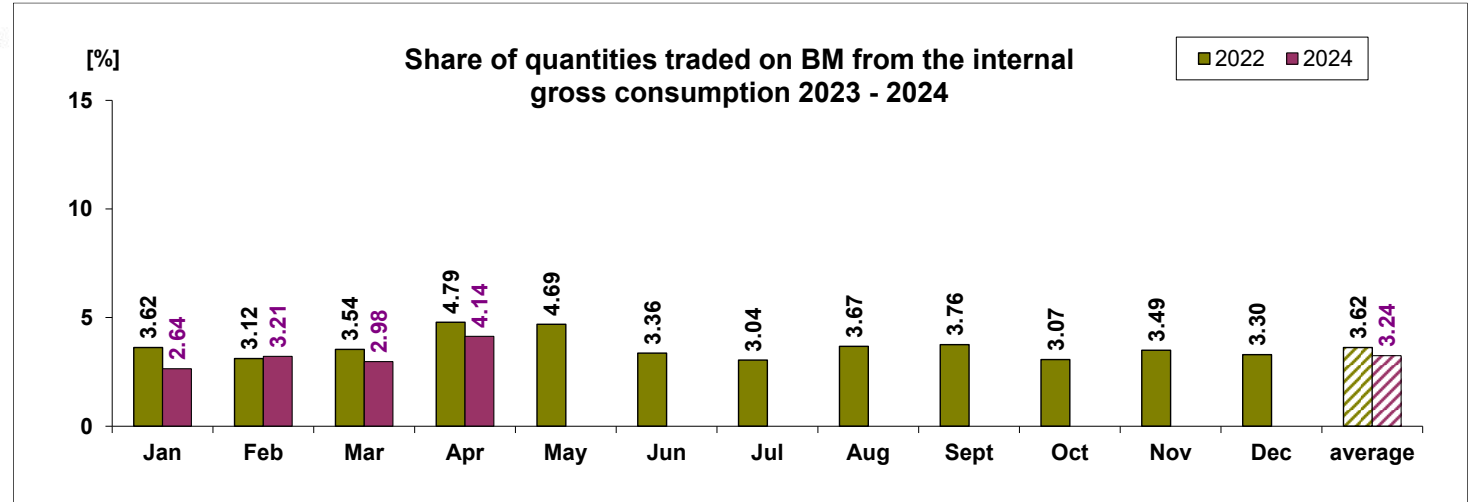


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# Balancing Market

## 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).



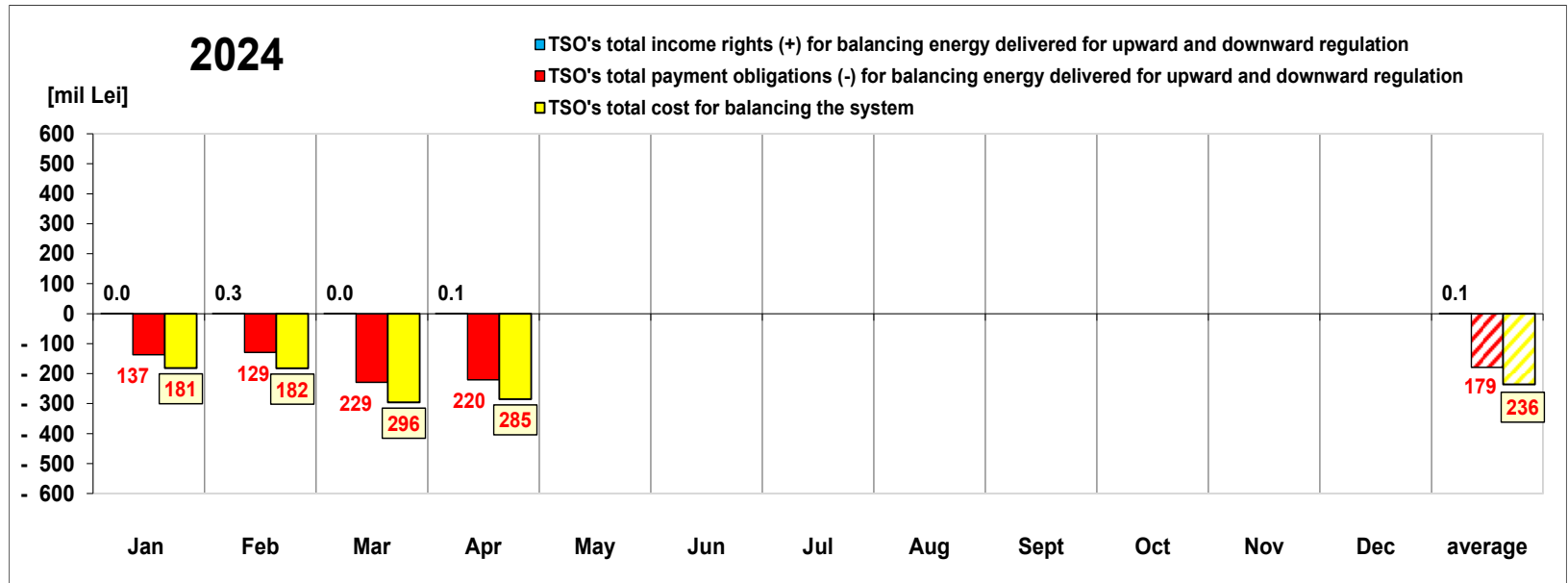
2024													
	Jan.24	Feb.24	Mar.24	Apr.24	May.24	Jun.24	Jul.24	Aug.24	Sept.24	Oct.24	Nov.24	Dec.24	Average
%BM	2.64	3.21	2.98	4.14									3.24
%DAM	40.23	34.76	44.64	39.01									39.66
%CG	0.000	0.000	0.000	0.000									0.0000
%BM-CG	2.644	3.215	2.977	4.139									3.244
% outside BM	0.00	0.00	0.03	0.18									0.05



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# 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	18 140	278 638	35 910	87 468									105 039	420 157
	payments (-) prices < 0	-35 668 475	-76 223 402	-173 433 646	-119 087 479									-101 103 251	- 404 413 002
TSO's payment obligations / income rights for balancing energy delivered for upward regulation	payments (-) prices ≥ 0	-101 648 720	-52 902 529	-55 602 939	-101 391 184									-77 886 343	- 311 545 372
	incomes (+) prices < 0	0	0	0	0									0	0
TSO's total income rights (+) for balancing		18 140	278 638	35 910	87 468									105 039	420 157
TSO's total payment obligations (-) for		-137 317 196	-129 125 931	-229 036 585	-220 478 663									-178 989 594	- 715 958 374
TSO's total cost for balancing the system		-181 297 377	-182 475 562	-296 213 092	-284 999 109									-236 246 285	- 944 985 139
Value of transactions outside BM (with		0	0	0	0									0	0
Congestion Cost on BM		0	0	0	0									0	0
Congestion Cost outside BM		0	0	0	0									0	0

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

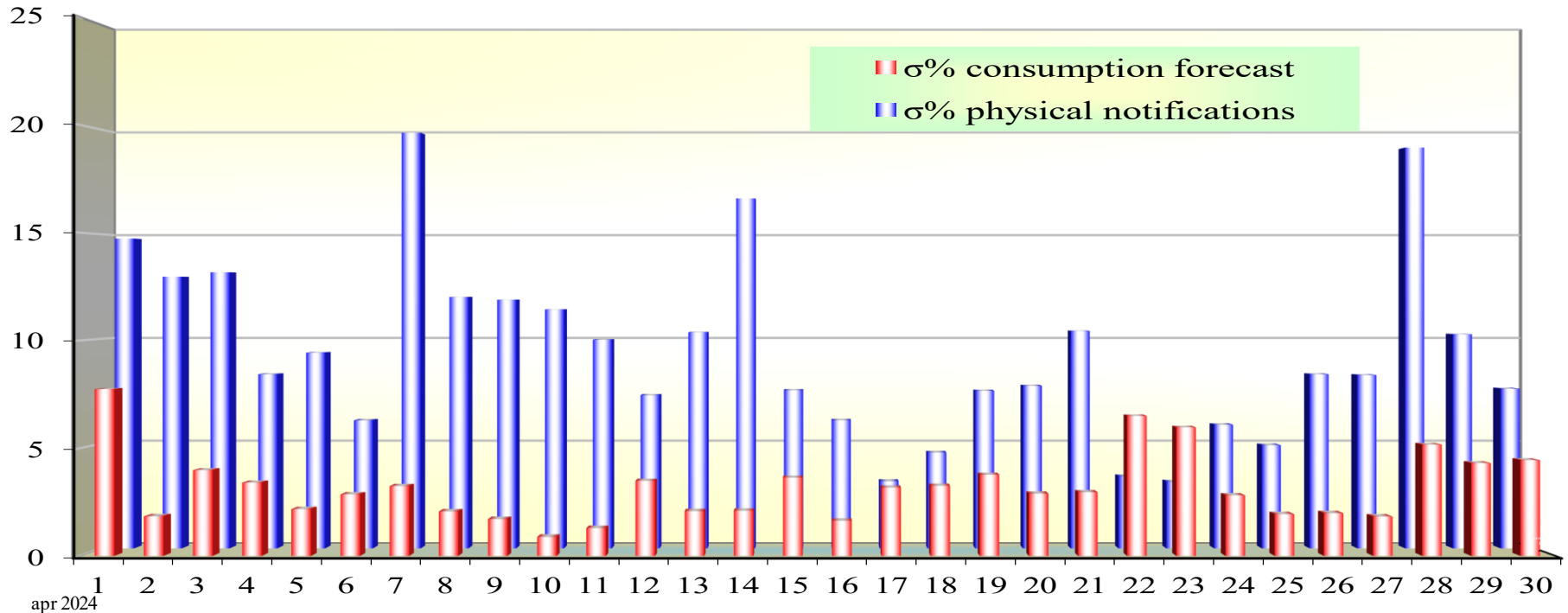


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# Balancing Market

Standard deviation of physical notifications and consumption forecast against the actual consumption in April 2024



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	7.74	1.83	3.98	3.40	2.17	2.85	3.24	2.06	1.71	0.88	1.29	3.49	2.08	2.09	3.63	1.63	3.17	3.25	3.77	2.89	2.95	6.50	5.96	2.81	1.93	1.98	1.82	5.17	4.31	4.44
σ% physical notifications	14.79	12.97	13.18	8.31	9.34	6.11	19.84	12.00	11.87	11.41	9.96	7.31	10.31	16.71	7.55	6.12	3.20	4.57	7.53	7.76	10.38	3.43	3.18	5.90	4.92	8.31	8.27	19.14	10.22	7.62

σ<sub>average% consumption forecast</sub> = 3.17

σ<sub>average % physical notifications</sub> = 9.41

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

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

Public

**R = Realized Consumption;**

**N = Physical Notifications;**

**P = Consumption Forecast.**





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# Balancing Market

## Balancing energy – Selected prices and quantities in April 2024

April 2024

### Downward Regulation

Downward Regulation	Prices			Quantities			Participants						
	Weighted	Maximum	Minimum	Selected	Actually	Deviation	C1	C3	C1	C3	HHI	HHI	
	Average				Delivered								
	[lei/MWh]	[lei/MWh]	[lei/MWh]	[MWh]	[MWh]	[%]	Number	(selected)	(actually delivered)	(selected)	(actually delivered)		
	Secondary	-2773.67	0.10	-5000.00	25688.29	25688.29	0.00%	4	74.35%	98.34%	74.35%	98.34%	5937
Fast Tertiary	-665.60	255.00	-8500.00	74118.46	71559.94	3.45%	17	48.51%	86.19%	49.37%	86.41%	3256	3330
Slow Tertiary	-	-	-	0.00	-	-	0	-	-	-	-	-	-
				99806.75	97248.23	2.56%							

### Upward Regulation

	Prices			Quantities			Participants						
	Weighted	Maximum	Minimum	Selected	Actually	Deviation	C1	C3	C1	C3	HHI	HHI	
	Average				Delivered								
	[lei/MWh]	[lei/MWh]	[lei/MWh]	[MWh]	[MWh]	[%]	Number	(selected)	(actually delivered)	(selected)	(actually delivered)		
Secondary	2823.08	3000.00	450.15	15381.78	15381.78	0.00%	4	73.95%	98.15%	73.95%	98.15%	5914	5914
Fast Tertiary	880.17	1350.00	400.00	67409.07	65843.71	2.32%	7	78.34%	96.72%	78.75%	96.69%	6310	6367
Slow Tertiary	-	-	-	0.00	-	-	0	-	-	-	-	-	-

### Transactions outside BM (financial compensation)

### Participants

Fast Tertiary Downward  
Regulation

Selected	Actually	Undelivered	Number
[MWh]	Delivered	[%]	
	[MWh]		
7733.75	7556.29	2.29	1

Public



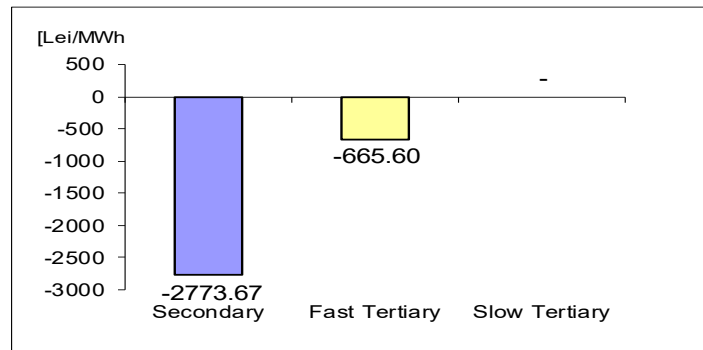
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# Balancing Market

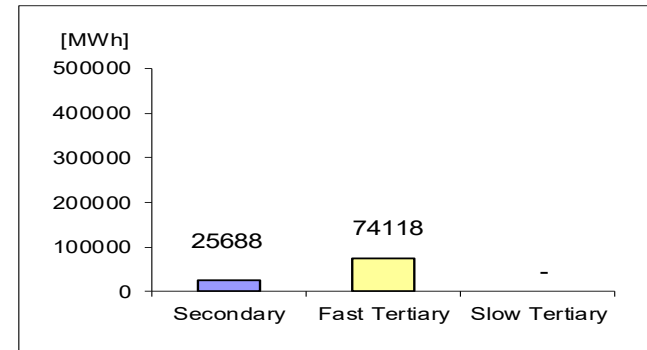
## Balancing energy – Selected prices and quantities in April 2024

April 2024

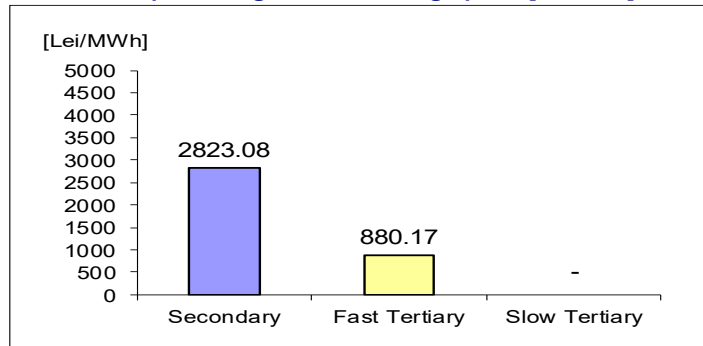
Downward regulation - average price [lei/MWh]



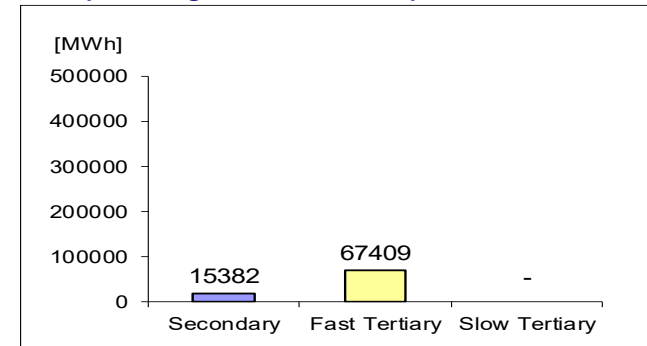
Downward regulation - selected quantities



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  $i$ .

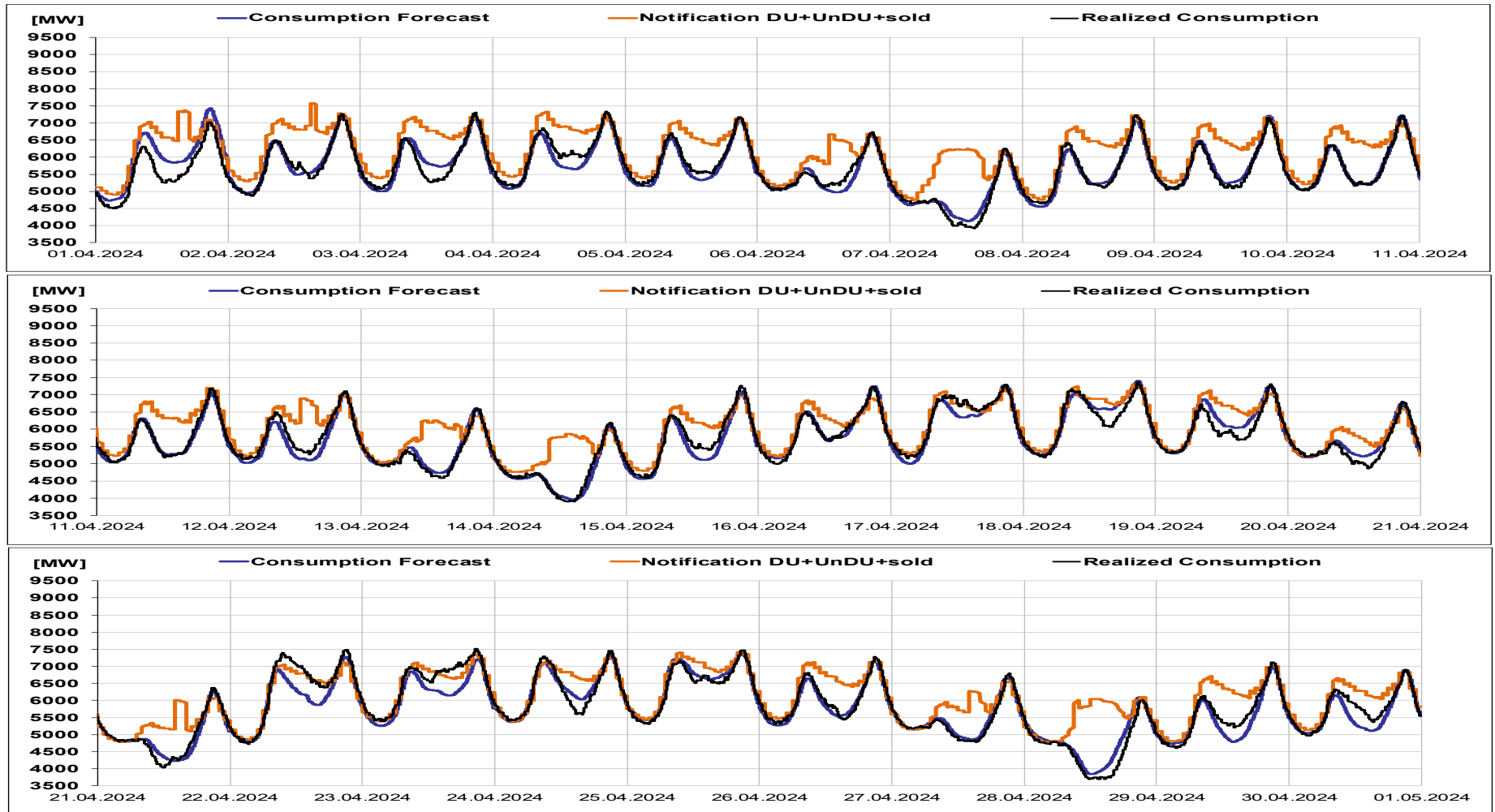


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# Balancing Market

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



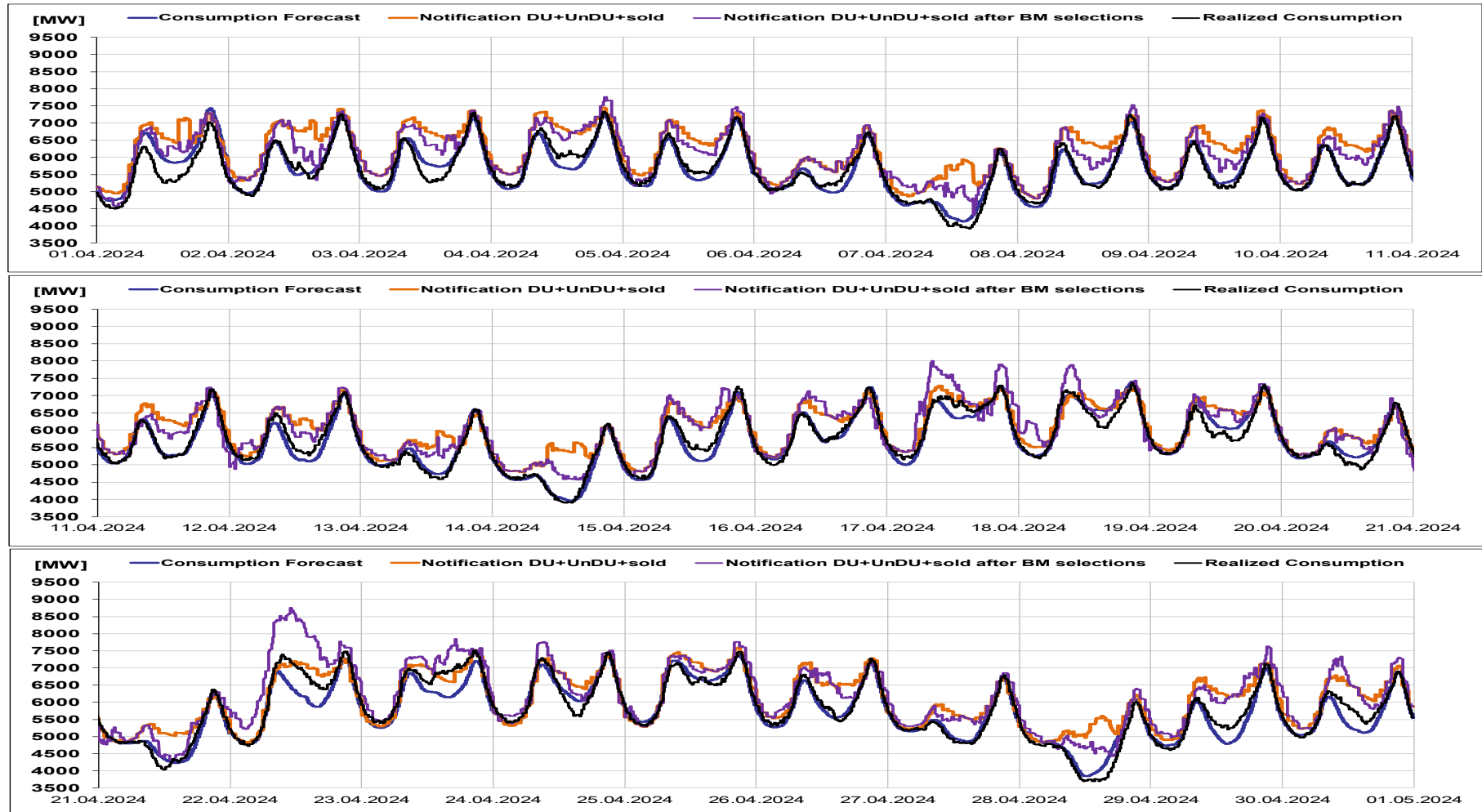


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# Balancing Market

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





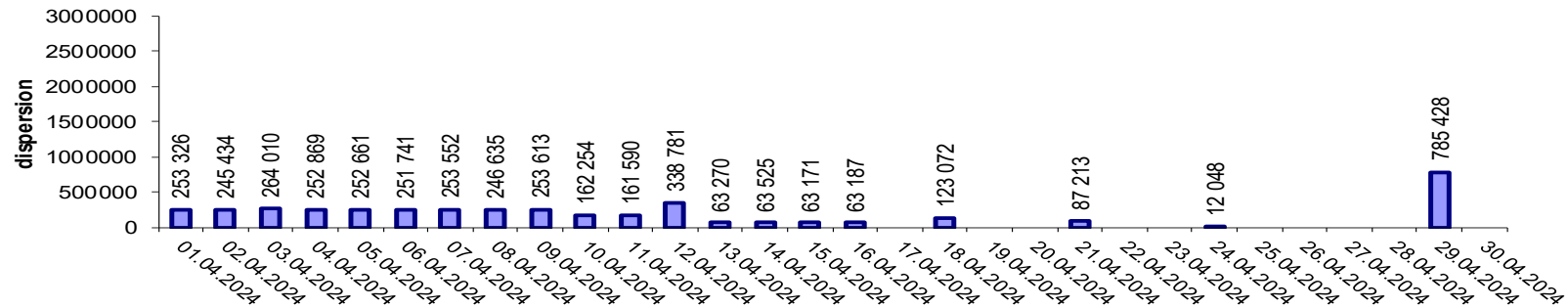
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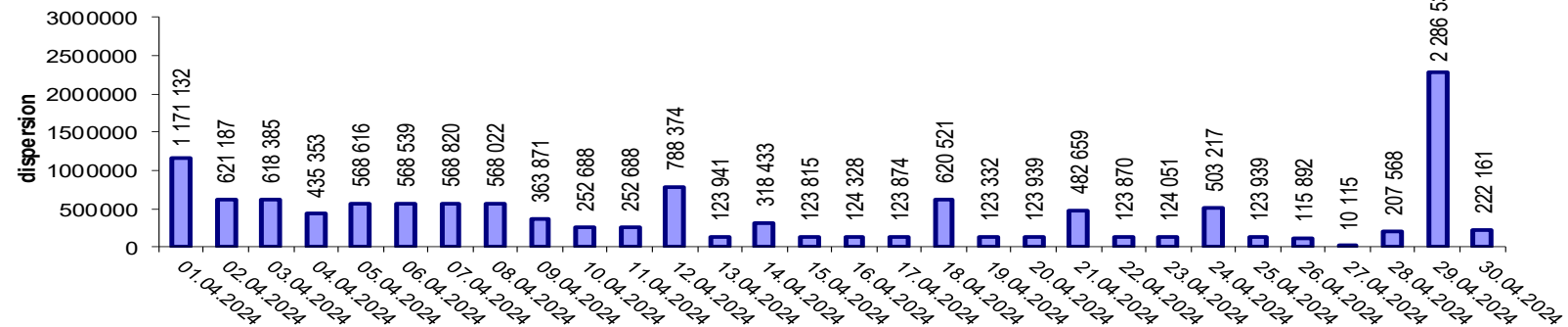
# Balancing Market

## Indicators – Price Volatility for Secondary Regulation

Price Volatility for Secondary Upward Regulation



Price Volatility for Secondary Downward Regulation



Volatility = price dispersion on studied interval:

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



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