



Transelectrica®
Societate Administrată în Sistem Dualist

MARKET MONITORING REPORT

Balancing Market

June 2021

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).



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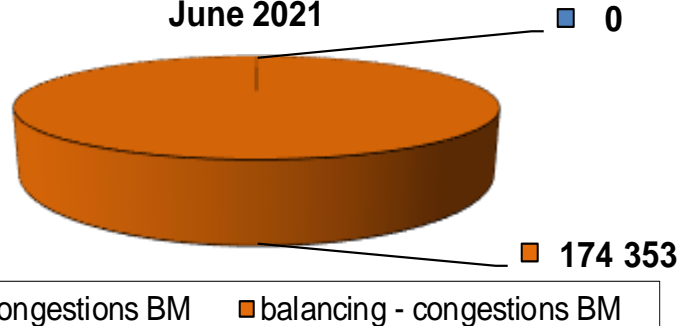
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Balancing Market

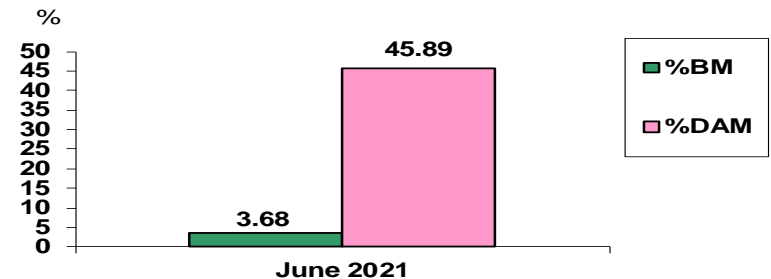
The Balance Generation/Consumption

- The average monthly value of generated power was 7 058 MW and the actual internal gross consumption was 6 589 MW.
- The NDC consumption forecast was close to the actual consumption, the standard deviation being **1.92%**. 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 **4.17%**. The greatest daily deviation regarding the notifications was registered on 6st of June (**6.51%**).
- The energy used in June 2021 for balancing the power system and congestion management was 174 353 MWh (with an average power of 242 MW, which means **3.68%** from the internal gross consumption).
- There were no network congestion management transactions.
- There were no transactions outside BM (with financial compensation).
- The energy used in June 2021 on Day Ahead Market was 2 176 971 MWh (with an average power of 3 024 MW, which means **45.89%** from the internal gross consumption). Data are shown in EET hours.
- The total cost of the energy traded on the Balancing Market was 83 889 171 lei (with an average weighted price of 481.14 lei/MWh).

Traded energy on BM
June 2021



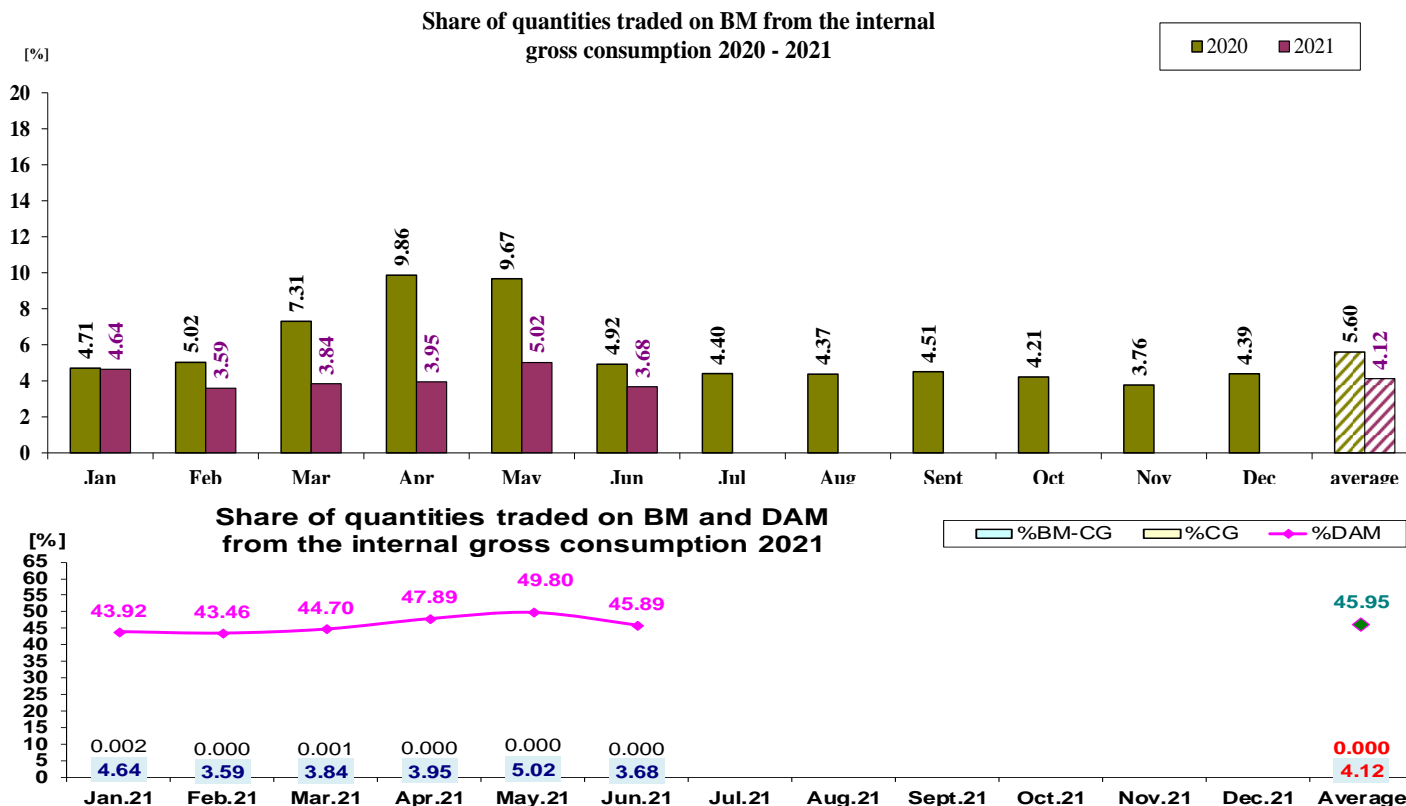
Traded energy on BM and DAM related to the
gross internal consumption



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).



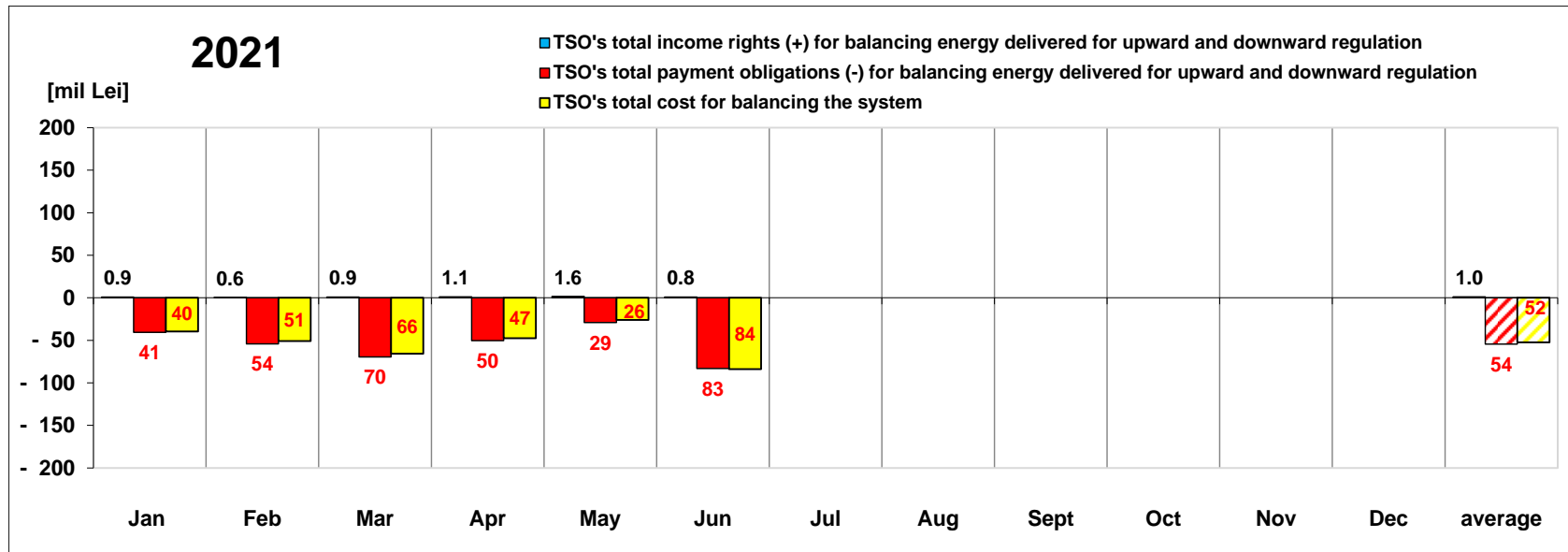
	2021												
	Jan.21	Feb.21	Mar.21	Apr.21	May.21	Jun.21	Jul.21	Aug.21	Sept.21	Oct.21	Nov.21	Dec.21	Average
%BM	4.64	3.59	3.84	3.95	5.02	3.68							4.12
%DAM	43.92	43.46	44.70	47.89	49.80	45.89							45.95
%CG	0.002	0.000	0.001	0.000	0.000	0.000							0.0005
%BM-CG	4.636	3.592	3.836	3.947	5.019	3.675							4.118
% outside BM	0.02	0.00	0.00	0.00	0.00	0.00							0.003



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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	878 222	633 581	912 692	1 127 724	1 558 592	805 841							986 109	5 916 653
payments (-) prices < 0	- 367 742	- 8 158	- 280 354	- 849 859	0	- 295 584							- 300 283	- 1 801 697
TSO's payment obligations / income rights for balancing energy delivered for upward regulation														
payments (-) prices ≥ 0	-40 134 420	-54 045 144	-69 270 145	-49 547 577	-29 085 259	-82 840 786							-54 153 889	- 324 923 331
incomes (+) prices < 0	0	0	0	0	0	0							0	0
TSO's total income rights (+) for balancing	878 222	633 581	912 692	1 127 724	1 558 592	805 841							986 109	5 916 653
TSO's total payment obligations (-) for	-40 502 162	-54 053 301	-69 550 500	-50 397 436	-29 085 259	-83 136 370							-54 454 171	- 326 725 028
TSO's total cost for balancing the system	-39 649 686	-50 861 284	-65 692 590	-47 412 381	-26 133 778	-83 889 171							-52 273 148	- 313 638 890
Value of transactions outside BM (with financial compensation)	- 25 803	0	0	0	0	0							- 4 300	- 25 803
Congestion Cost on BM	- 56	0	- 121	0	0	0							- 30	- 177
Congestion Cost outside BM	0	0	0	0	0	0							0	0

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

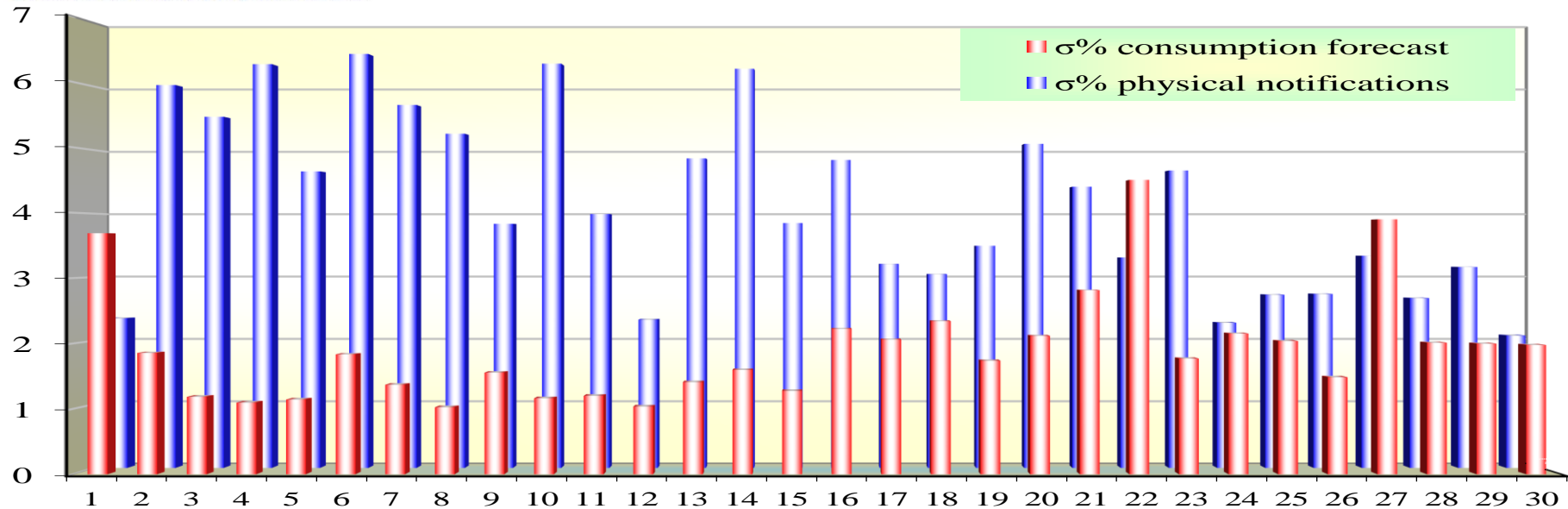


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Balancing Market

Standard deviation of physical notifications and consumption forecast against the actual consumption in June 2021



Jun 2021

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	3.69	1.86	1.18	1.10	1.14	1.83	1.37	1.02	1.55	1.16	1.20	1.03	1.41	1.60	1.27	2.22	2.06	2.34	1.74	2.12	2.82	4.50	1.77	2.15	2.04	1.48	3.90	2.01	2.00	1.98
σ% physical notifications	2.35	6.02	5.52	6.35	4.66	6.51	5.71	5.26	3.84	6.36	3.99	2.33	4.87	6.28	3.85	4.84	3.21	3.05	3.49	5.10	4.42	3.31	4.68	2.28	2.72	2.73	3.34	2.67	3.16	2.08

σ_{average% consumption forecast} = 1.92

σ_{average % physical notifications} = 4.17

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

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

R = Realized Consumption;

N = Physical Notifications;

P = Consumption Forecast.

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Balancing energy – Selected prices and quantities

At the beginning of the month on the Balancing Market operated 70 BRPs, 99 market participants, holding 193 commercially operating dispatchable units. Starting with 1st of June 2021, according to the provisions of ANRE Order no. 213/2020, amended and supplemented by ANRE Order no. 33/2021, BRP CET NOVA POWER & GAS (PROBE) (30XRONPGPROBE - 7) was registered in the Balancing Market having as production unit, during the trial period, CAMPPIA_TURZII. Starting with 12th of June 2021, BRP CNTEE Transelectrica S.A. (neplanificat) (10XRO-TEL ----- 2) was removed from the BRP list, according to the provisions of ANRE Order no. 213/2020, amended and supplemented by ANRE Order no. 33/2021.

June 2021

Downward Regulation

	Prices [lei/MWh]		
	Weighted Average	Maximum	Minimum
	[lei/MWh]	[lei/MWh]	[lei/MWh]
Secondary	-1.28	0.70	-10.00
Fast Tertiary	14.18	53.10	-165.00
Slow Tertiary	-	-	-

Quantities [MWh]		
Selected	Actually Delivered	Deviation
[MWh]	[MWh]	[%]
48248.15	48248.15	0.00%
43160.70	40857.17	5.34%
0.00	-	-
91408.85	89105.32	2.52%

Participants						
Number	C1	C3	C1	C3	HHI	HHI
	(selected)		(actually delivered)		(selected)	(actually delivered)
3	57.21%	100%	57.21%	100%	4199	4199
10	50.59%	97.45%	49.72%	97.45%	3661	3615
0	-	-	-	-	-	-

Upward Regulation

	Prices [lei/MWh]		
	Weighted Average	Maximum	Minimum
	[lei/MWh]	[lei/MWh]	[lei/MWh]
Secondary	1044.42	5000.00	499.00
Fast Tertiary	920.29	1206.00	440.00
Slow Tertiary	-	-	-

Quantities [MWh]		
Selected	Actually Delivered	Deviation
[MWh]	[MWh]	[%]
35264.36	35264.36	0.00%
52431.82	49983.72	4.67%
0.00	-	-
87696.18	85248.07	2.79%

Participants						
Number	C1	C3	C1	C3	HHI	HHI
	(selected)		(actually delivered)		(selected)	(actually delivered)
3	56.82%	100%	56.82%	100%	4165	4165
7	59.65%	92.38%	61.18%	92.18%	4196	4305
0	-	-	-	-	-	-



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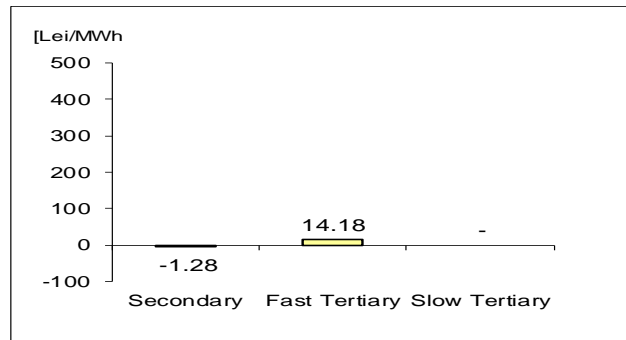
Balancing Market

Balancing energy – Selected prices and quantities in June 2021

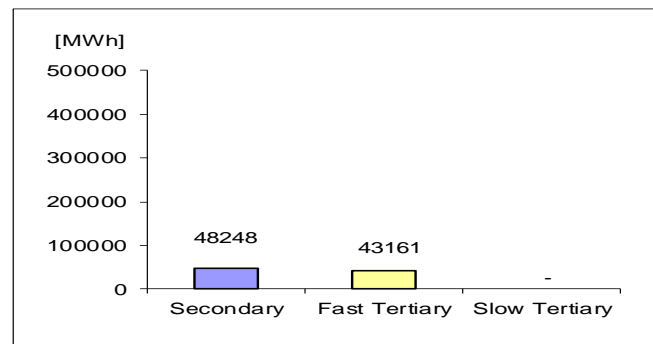
Prices and quantities

June 2021

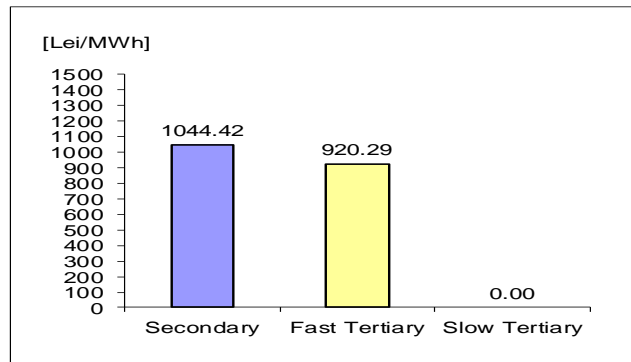
Downward regulation - average price [lei/MWh]



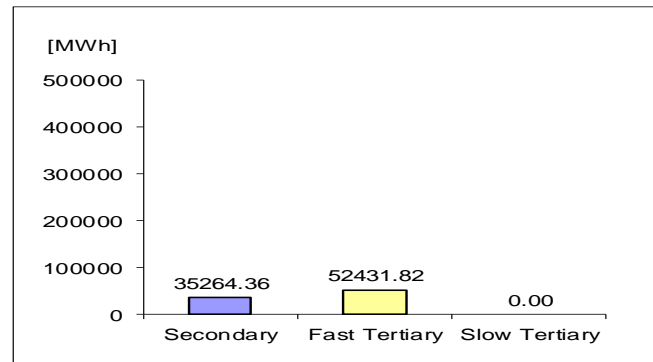
Downward regulation - selected quantities [MWh]



Upward regulation - average price [lei/MWh]



Upward regulation - selected quantities [MWh]



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

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 .

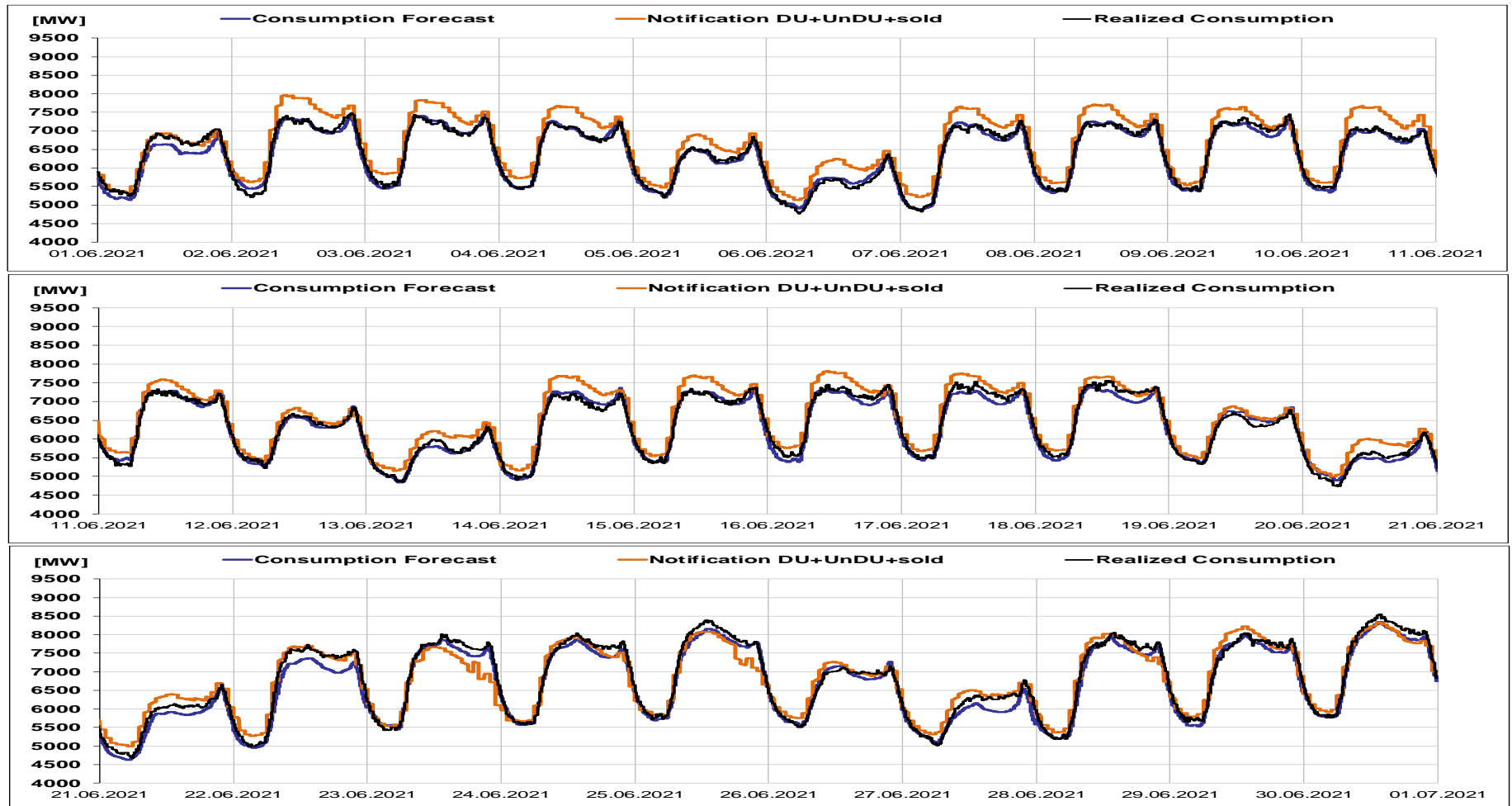


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Balancing Market

Realized consumption, forecast, notifications in D-1



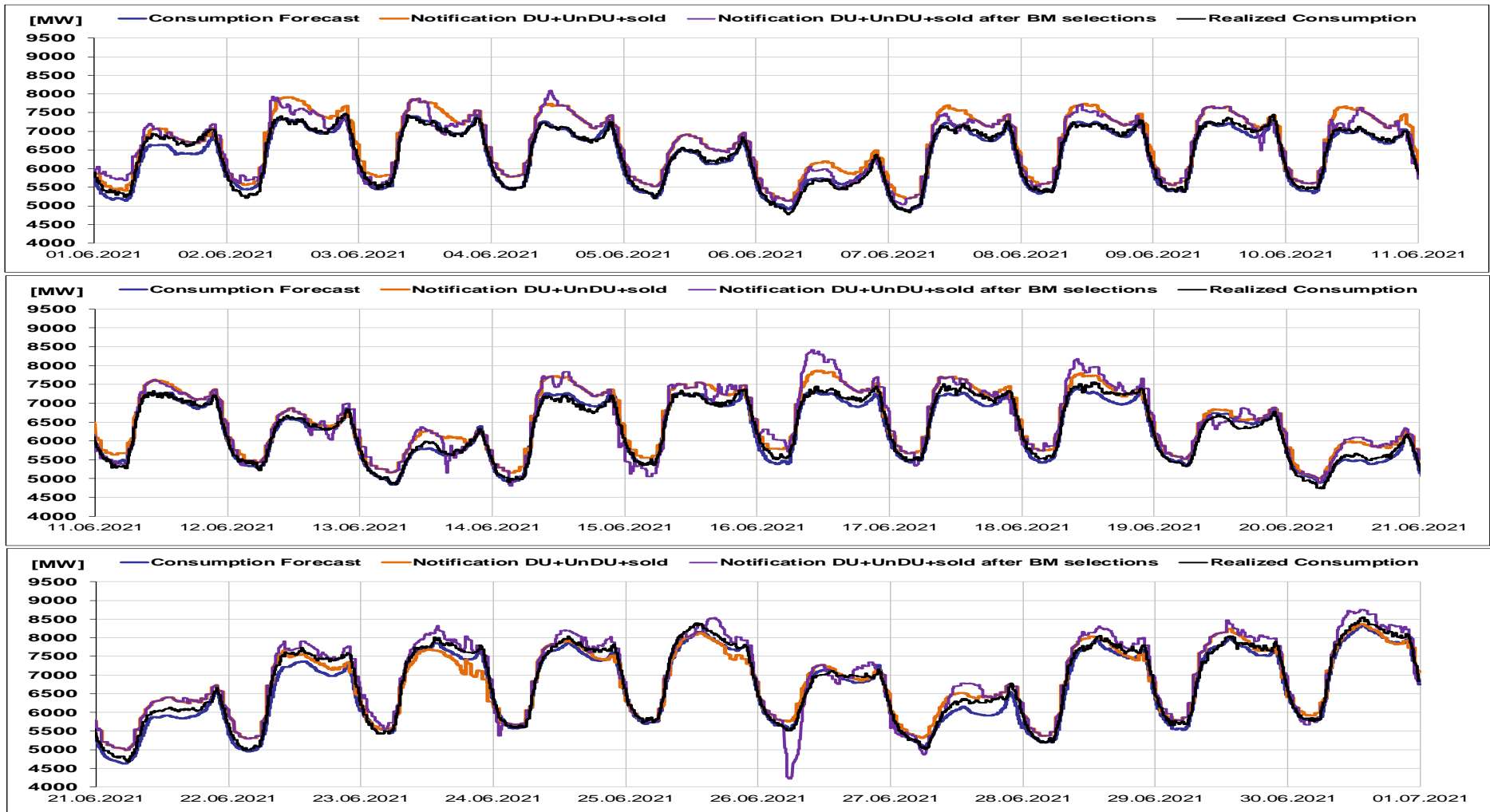


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Balancing Market

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





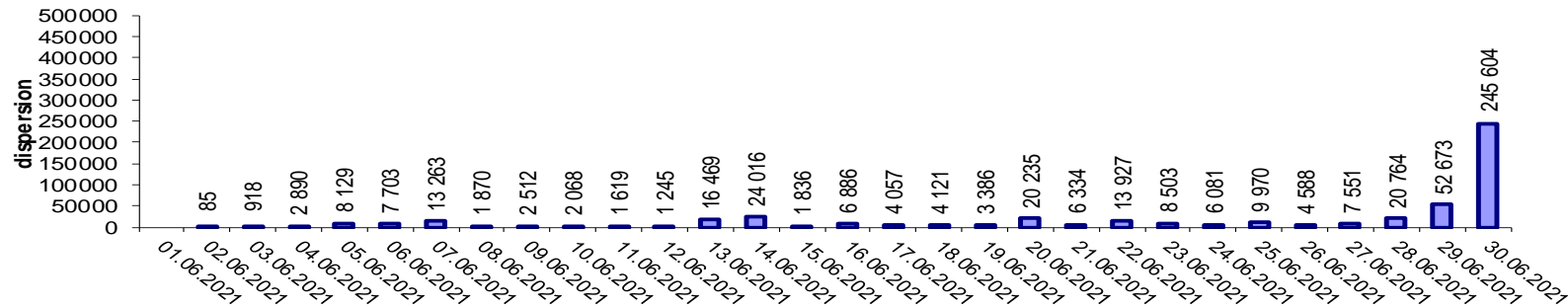
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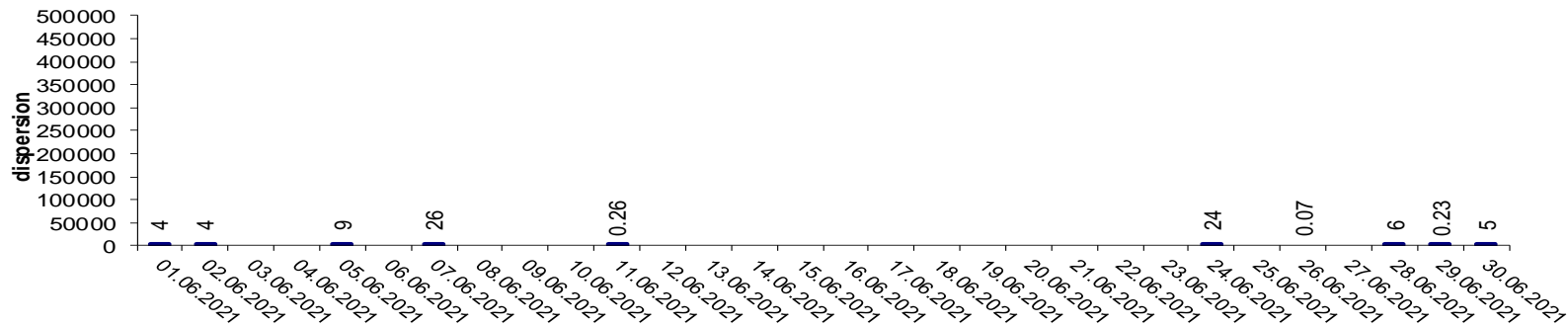
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Indicators – Price Volatility for Secondary Regulation

Price Volatility for Secondary Upward Regulation



Price Volatility for Secondary Downward Regulation



Volatility = price dispersion on studied interval:

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

Public



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