

WEEKLY Hungary + SEE POWER REVIEW

For Wk28-2024 (08.07.-14.07.) - published on Monday 15.07.2024



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PRICES | CONSUMPTION | COAL | GAS | HYDRO | NUCLEAR | RES | MAINTENANCES | TRANSMISSION | FLOWS

1. SPOT Power prices and Short overview

Main price drivers:

- Wk28 was among the stressed weeks ever, as hourly prices reached even 940 EUR/MWh on HUPX.
- HU-DE spread was among the highest ever, due to sharp reduction of FBMC flows from Austria to HU+SEE Region in H19-H24 starting from 08.07.2024.
- The power balance of the HU+SEE Region further worsened and it was relatively low for the 6th week in a row, on extreme rise of consumption across the region.

	Absolute level				Wk-28 change vs previous weeks		
	Week 28	Week 27	Week 26	WK-28-2023	Week 27	Week 26	WK-28-2023
Average price	Prices						
HUPX price	177.87	91.64	114.14	95.49	+86.2	+63.7	+82.4
HU-DE difference	109.29	40.31	-18.56	16.74	+69.0	+127.8	+92.5
HU-AT difference	122.33	40.24	42.83	7.14	+82.1	+79.5	+115.2
AT GAS (CEGH)	33.22	34.27	35.52	30.65	-1.1	-2.3	+2.6
* EUA – CO2 (Dec23)	68.78	69.84	67.35	86.12	-1.1	+1.4	-17.3
SEE Power	MW AVG						
Consumption	35,853	31,441	32,082	32,745	+4412	+3771	+3108
Temperature	29.0	23.5	25.1	23.3	+5.5	+3.9	+5.7
Hydro generation	6,691	6,078	6,966	7,175	+613	-275	-484
Coal generation	7,480	6,752	6,650	8,251	+728	+830	-771
Gas generation	5,745	5,027	4,961	5,146	+718	+783	+599
Nuclear generation	5,756	4,862	4,353	5,825	+893	+1403	-70
Wind	2,467	2,044	2,467	1,799	+423	-	+668
Solar (peak)	7,765	7,116	7,367	6,165	+649	+398	+1600
SEE Export	MW AVG						
Base-load	-2,865	-2,468	-2,230	-1,137	-397	-634	-1727

Base load (EUR/MWh)	14.07. SUN	13.07. SAT	12.07. FRI	11.07. THU	10.07. WED	09.07. TUE	08.07. MON	AVG EUR/MWh
HU-DE spread	78.91	115.11	139.40	172.72	115.24	69.62	74.03	109.29
Hungary	103.29	143.80	230.00	263.99	194.25	147.31	162.45	177.87
Germany	24.38	28.69	90.60	91.27	79.01	77.69	88.42	68.58
AT-DE spread	-6.06	-2.78	-21.17	-20.15	-14.57	-15.70	-10.86	-13.04
Austria	18.32	25.91	69.43	71.12	64.44	61.99	77.56	55.54
Slovenia	37.14	45.03	100.93	116.85	94.33	94.93	100.73	84.28
Romania	118.09	162.78	212.06	189.89	148.30	118.87	148.76	156.96
Bulgaria	81.86	105.79	110.15	95.61	96.69	77.57	96.59	94.89
Croatia	57.20	83.18	131.87	147.99	115.48	105.24	116.92	108.27
Serbia	149.51	169.50	183.59	158.62	138.47	131.75	135.88	152.47
Greece	139.78	152.69	190.13	184.79	115.55	99.45	125.41	143.97
Turkey	61.09	71.93	71.14	73.48	71.70	73.00	53.03	67.91
IT NORD	99.50	95.72	106.48	115.59	114.08	113.93	102.09	106.77
SI-IT NORD. spread	-62.36	-50.69	-5.55	1.26	-19.75	-19.00	-1.36	-22.49
RO-HU spread	14.80	18.98	-17.94	-74.10	-45.95	-28.44	-13.69	-20.91
BG-RO spread	-36.23	-56.99	-101.91	-94.28	-51.61	-41.30	-52.17	-62.07
GR-BG spread	57.92	46.90	79.98	89.18	18.86	21.88	28.82	49.08

Sharp rise of consumption, driven by extremely high temperatures for consecutive days, was the main local driver in the region, resulting with the lowest power balance since February this year. In addition, the net export of the region without Greece was the lowest since February 2022, while the net export of the region without Greece was record high during summer! On the other hand, all types of generation rose compared to previous week, but this could not offset extreme rise of the consumption.

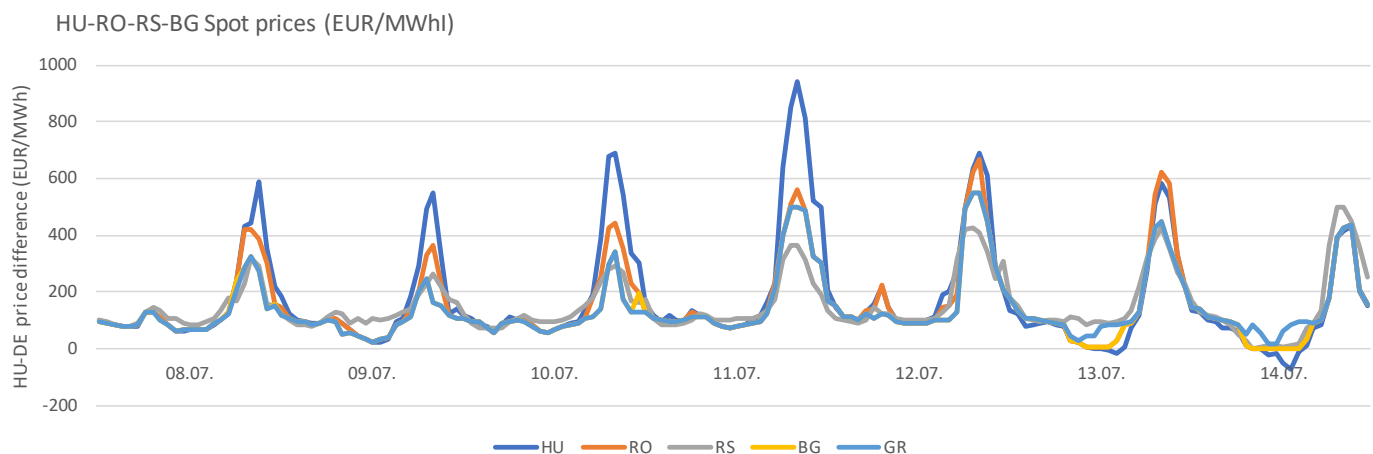
Interestingly, imports from Core in Wk28 were higher on average compared to previous week, as lower flows from Austria were offset by higher flows from Slovakia, but the flows were much lower in H19-H24.

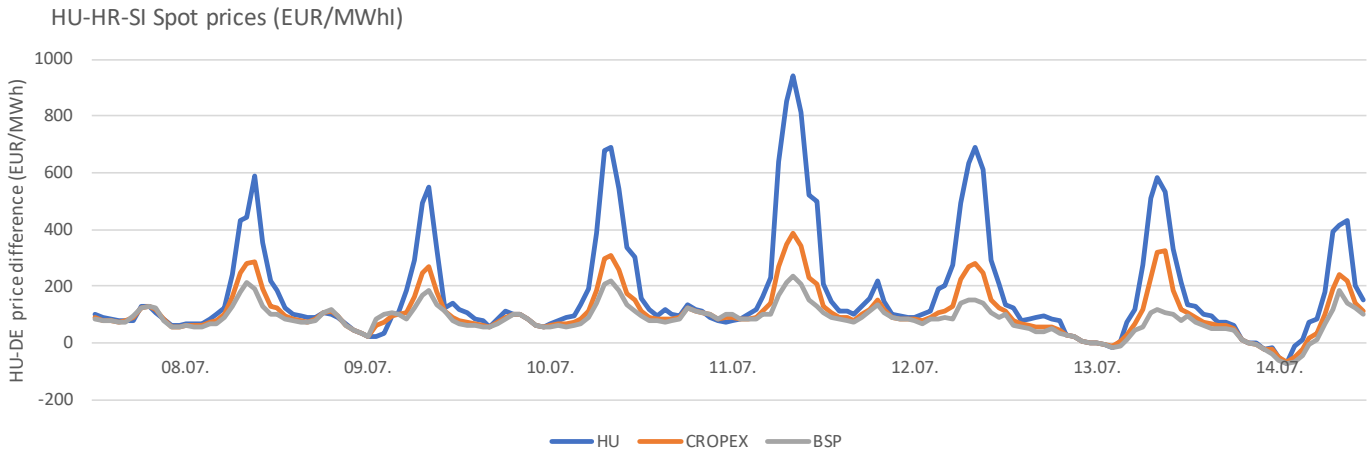
But there were many other elements resulting with high absolute price level and high price difference between SEE markets and German market.

- Maximal Flow Based Market Coupling (FBMC) exchange towards Hungarian market is greatly reduced after 08.07.2024. Maximal FBMC exchanges from Western Europe towards Hungary got reduced by 1,200 -1,300 MW on average in hours H19-H24 as of 08.07.2024. This is a very unexpected and uncomfortable situation which is happening at the same time when RS>HU and BG>RO NTCs are also reduced. There are no maintenances in Central-Eastern Europe which could cause such strong reduction of grid capacities in FBMC. It is difficult to estimate until when this reduction will last since it is also difficult to identify what transmission grid maintenance caused this reduction.
- FBMC Mechanism was favoring increase of Hungarian generation which came at extreme prices—as stronger Hungarian imports would further increase pressure on central European Grid. This would not be the case in NTC-based market coupling
- BG>RO capacity is reduced from 1,700 MW on 1,200 MW due to maintenances in transmission grid. which makes Romania dependent on imports from Hungary on the HU>RO border due to extremely low wind power generation in Romania and increased consumption in Romania with rising temperatures. Huge amount of network elements was in maintenance in Romania in a period 08.07.-12.07.2024, many of them not included into annual maintenance plan. Most of these elements were actually out for that exact period. On 13.07., BG>RO NTC increased to values of over 1700 MW
- SR>HU capacity is reduced from 800 MW on just 200 MW since 25.06.2024
- Entry of 1000MW unit in NPP Kozloduy had limited impact on HUPX in hours H19-H24. BG>RO and SR>HU borders are anyhow fully nominated in hours H19-H24 and no additional energy from NPP Kozloduy can get to Hungarian and Romanian markets in those hours.
- Finally, a reason for high prices is the increase of selling offers prices on all markets, mostly on the Greek market. Stress on the market just feeds even higher stress. The first highly stressful day (08.07.2024) induced the price increase of selling offers which resulted in even higher market price in following days which in turn fueled additional increase of prices of selling offers. On the Greek market, the last 2,000 MW of offered energy is now offered at much higher price than during the last week in hours H19-H24.
- There is no lack of energy on Greek, Bulgarian, Northern Macedonian, Albanian, Montenegrin, Serbian and Croatian markets – it is just the case that available energy go offered at much higher price than last year.

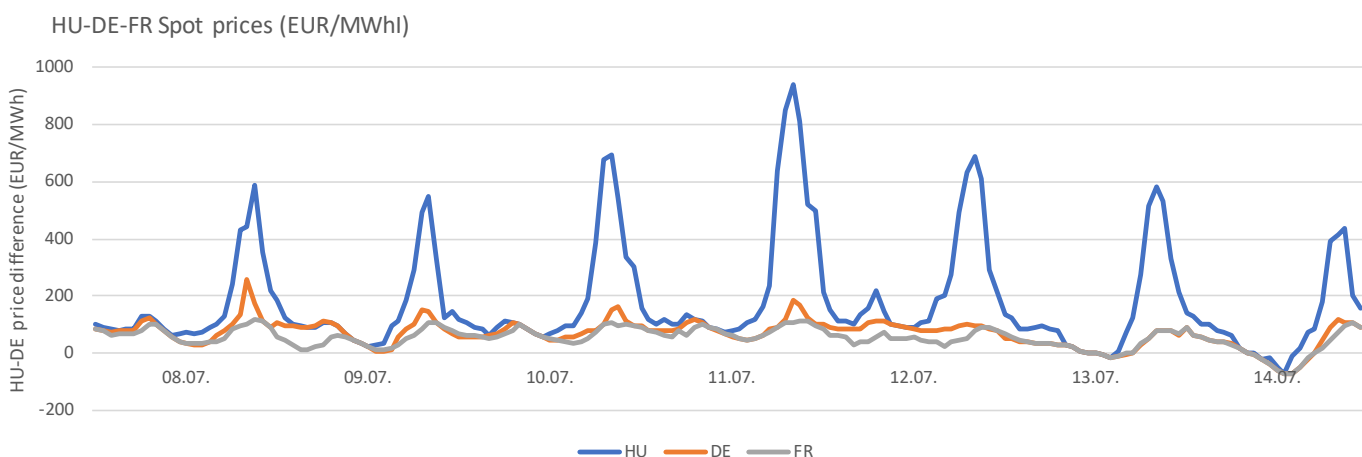
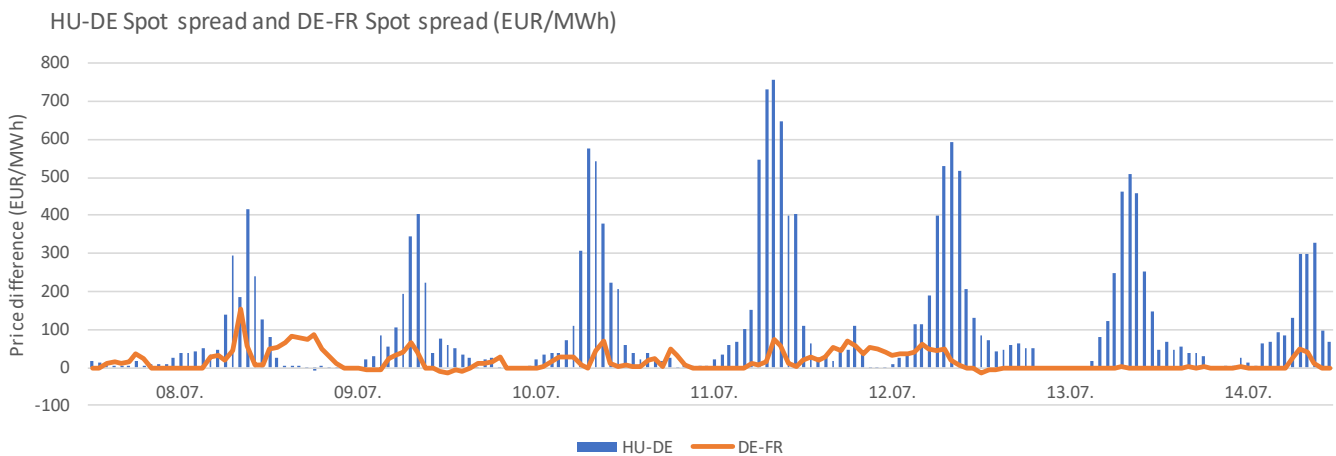
- Exports to Ukraine increased as NTC HU>UA increased as of 01.07.2024 by additional 185 MW and flows towards Ukraine remained at high level during Wk28.
- The most of the markets had extreme pricing, Hungarian pricing was the most surprising one. Comparing this heatwave (08.07.2024 – 10.07.2024) with heatwave in 2021 July, which had quite similar temperatures (27.07.2021-30.07.2021). The consumption in these two hours was indeed 500 MW higher than at the same time during heatwave, but Hungarian imports were not that high – they were the same as in 2021 heatwave
- In heatwave of July 2021, region was importing on average 700 MW of cheap energy from Ukraine. Now, during this heatwave region was exporting 800 MW of expensive energy to Ukraine and Moldova. This has huge effect on OPCOM and HUPX
- Consumption did rise in risky hours, but for entire region, just 500-1000 MW, or up to 2.5%. This is not significant effect, but does not help also.
- Romania was supplied from Hungarian market in FBMC, however in a very non-intuitive manner. In hours H18-H24 all available selling offers on the Romanian market are taken and the only solution for FBMC was to nominate high commercial flow from Hungary to Romania. However, flow from Hungary to Romania is somehow nominated in highly counter intuitive manner since FBMC gives to OPCOM much lower price than to HUPX (sometimes even 250 EUR/MWh lower price than HUPX) while delivering energy from HUPX to OPCOM. This is difficult to explain, but this flow from Hungary to Romania makes a huge pressure on HUPX.
- Bulgaria does not have sufficient amount of energy to decouple and fully deliver to Greece, as base-load generation (coal) in Bulgaria was 800 MW lower than in heatwave of 2021. As a result, while fully delivering to very short OPCOM, Bulgarian price in risky hours is defined by Greek pricing. And that is one of the most dominant elements

On HUPX, average price during H21 in Wk28 was around 616 EUR/MWh (in previous week price was 213 EUR/MWh), compared to 500 EUR/MWh on OPCOM, 394 EUR/MWh on IBEX and HENEX, 367 EUR/MWh on SEEPEX , 300 EUR/MWh on CROPEX and 187 EUR/MWh on BSP.



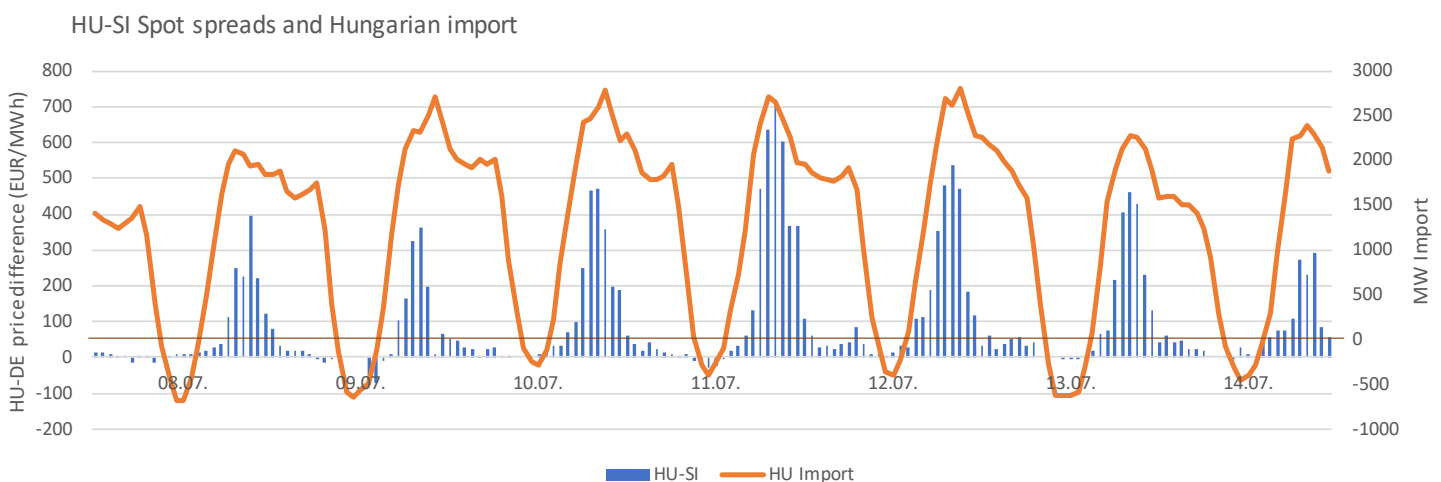
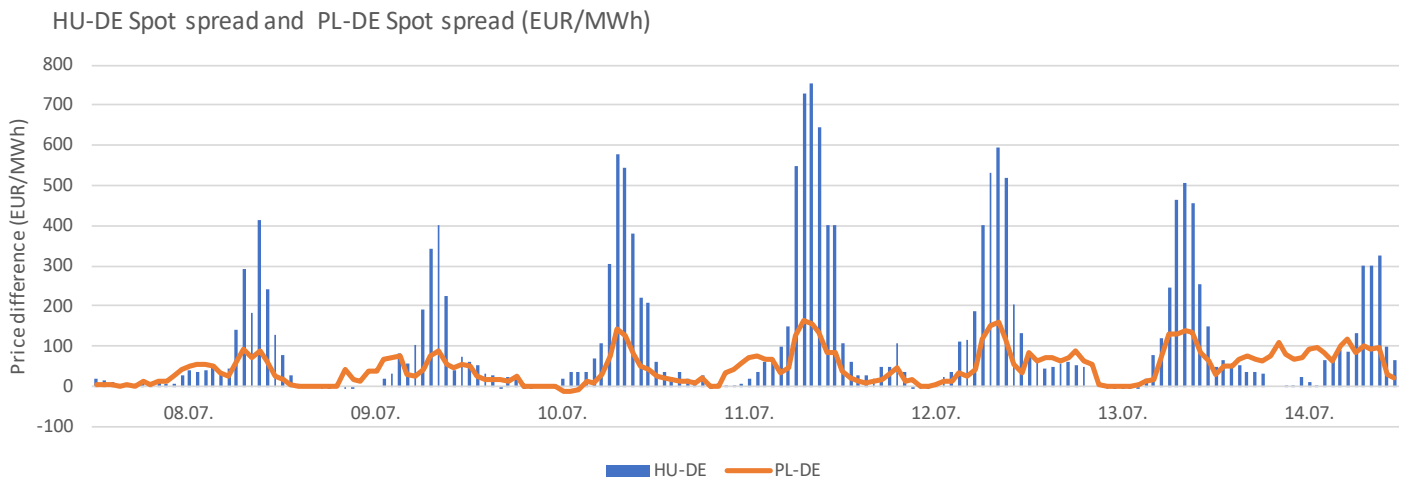
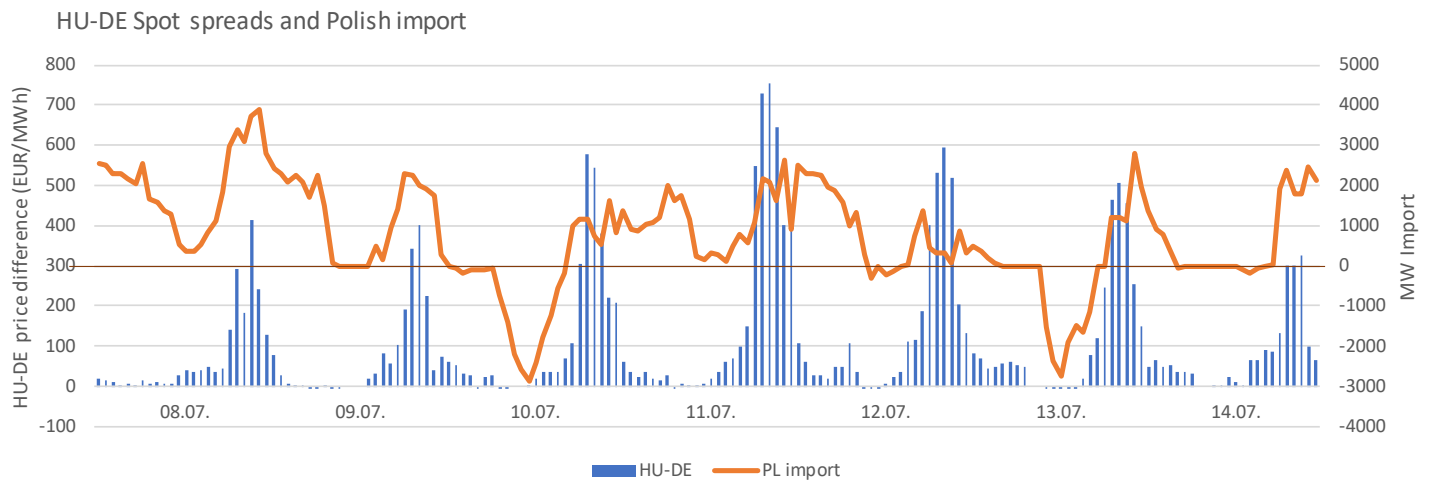


The spreads between markets in HU+SEE Region sharply rose to the highest level since January 2023. All markets settled above previous week, but the rise on BSP was much lower compared to other markets in the region. HUPX, as well as OPCOM, price was the highest since December 2022. SEEPEX, CROPEX and IBEX and HENEX price was the highest since February 2023. BSP price was the lowest, while HUPX. price was the highest in the region. The spread between HUPX and CROPEX was record high (around 70 EUR/MWh). The spread between HUPX and SEEPEX was among the highest ever. The spread between HUPX and Austrian market was record high, while the spread between HUPX and German market was the second highest ever. All neighboring markets, settled noticeably above previous week, but the rise was minimal in Austria and Italy. ITA Nord-DE and ITA PUN-DE spread dropped and it stood at 38-44 EUR/MWh. On the other hand, DE-FR spread further dropped compared to last week, which was not beneficial for HU-DE spread. German net position worsened, on much lower wind generation.

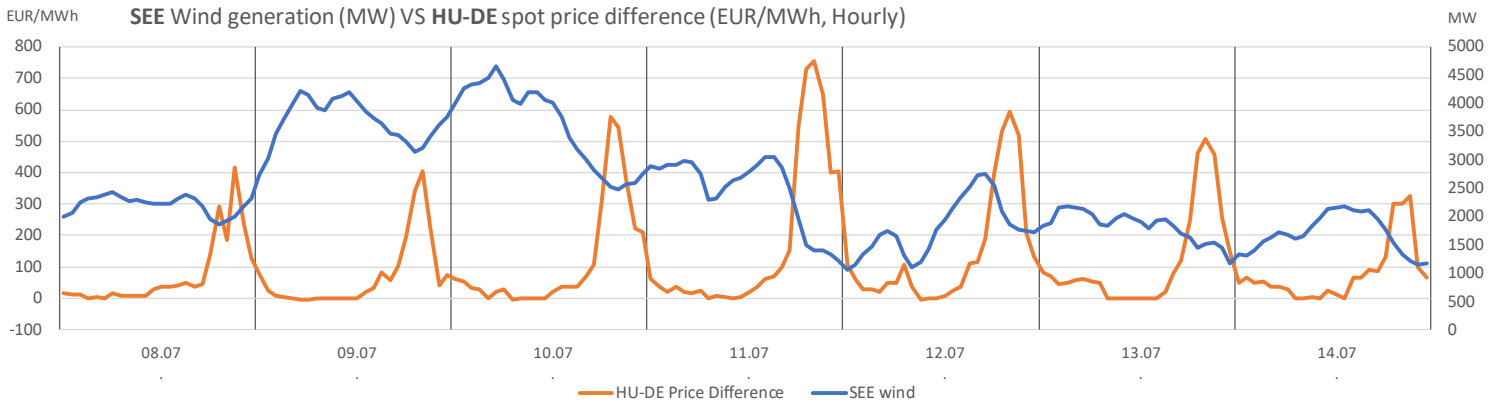


Critical days, entire week!!! HU-DE spread was extremely high during entire week and it was among the highest ever. Hourly price on HUPX of 940 EUR/MWh in H21 on 11.07.2024 was the among the highest ever recorded on HUPX. The prices were higher only in August 2022.

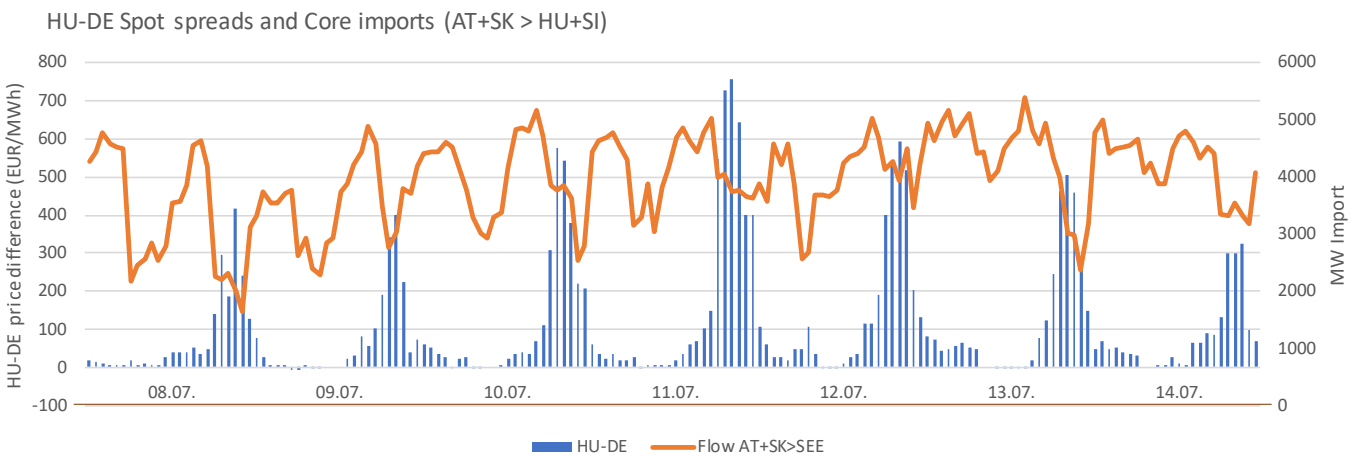
Unlike in previous year, HUPX vs EPEX-DE difference remains highly influenced by import of Poland. PL-DE remained at high level in Wk28, which was not beneficial for HU-DE spread. The net export of Poland was lower than last week and it remained negative. However, the net position of Poland was better than the same period last year. Polish market is the driver for HUPX-EPEX(DE) spread not vice versa. If Poland is more than 1500 MW short, HUPX-EPEX(DE) spread will exist regardless to whether HU+SEE position is long or short, and if the French market do not settle considerably below German market (up to 20 EUR/MWh).



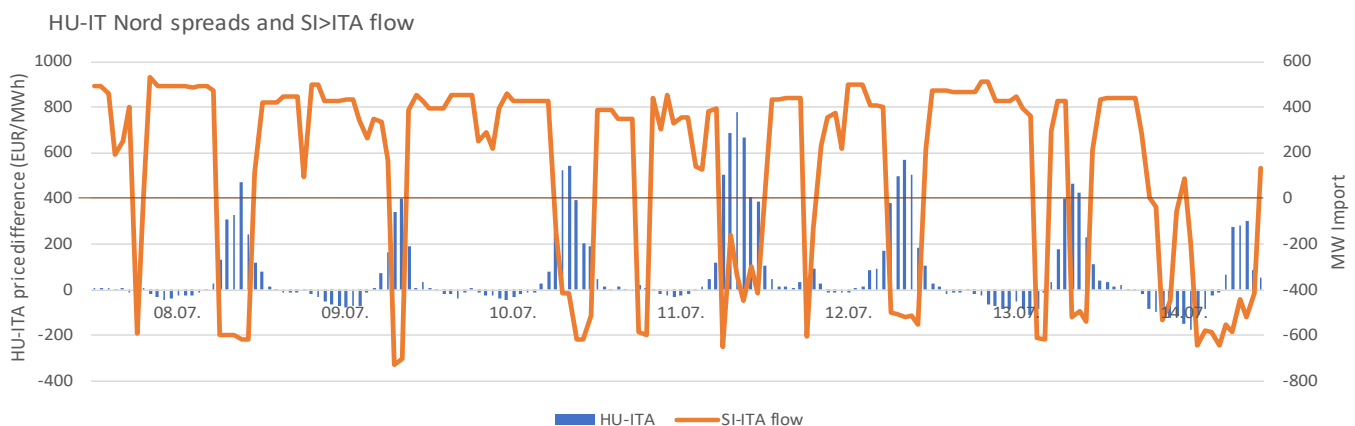
Observing entire SEE Region, the higher wind output compared to previous week could not offset influences of lower FMBC flows from Austria in evening hours and sharp rise of consumption. HU-DE spread of over 109 EUR/MWh was the second highest ever!

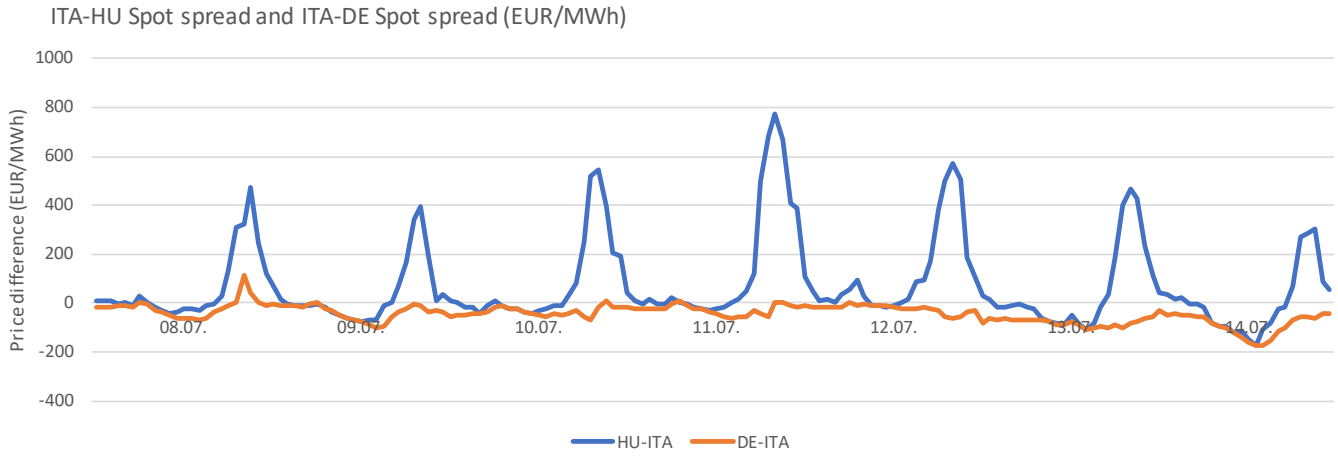


From the chart below, it can be seen that imports from Core were very high during entire week.

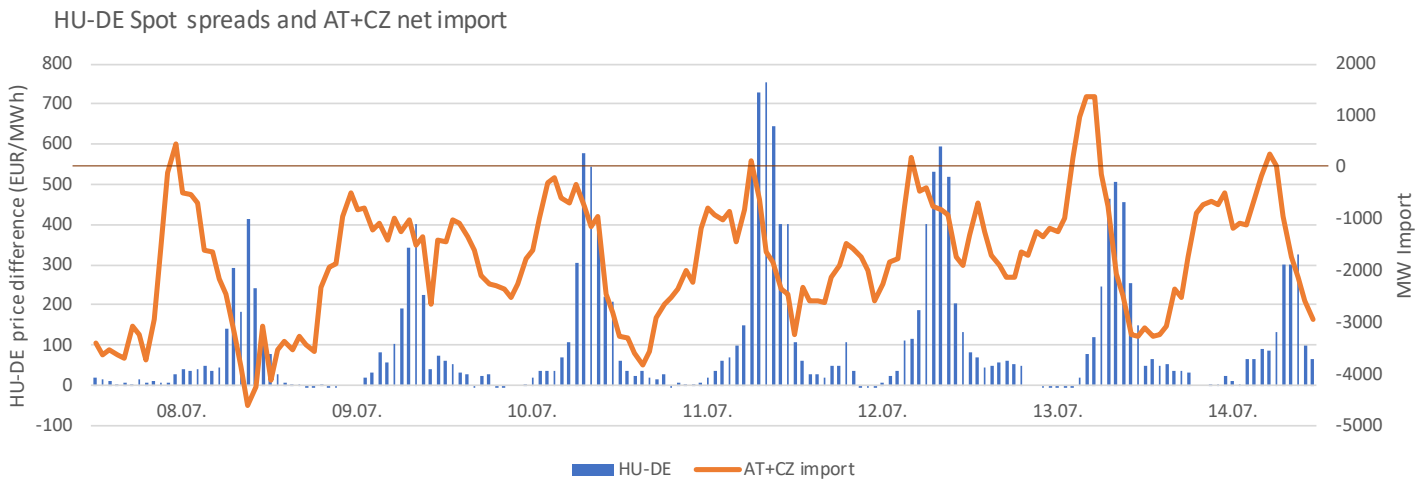
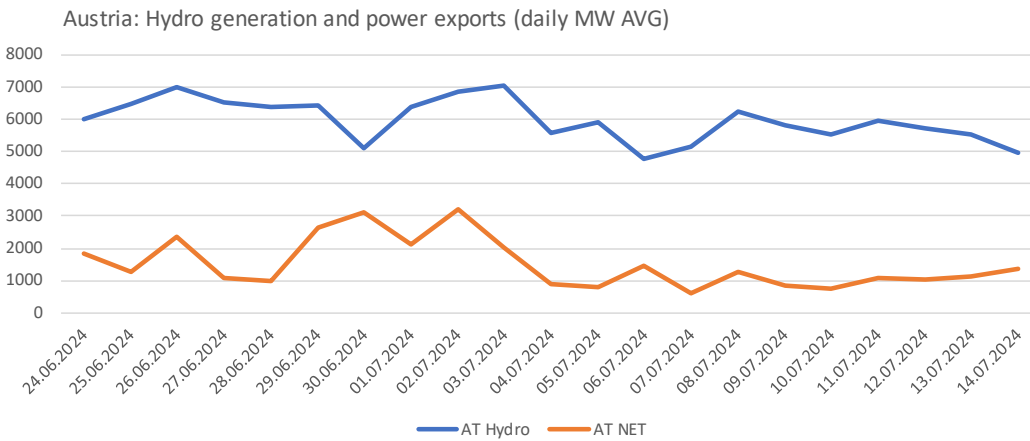


German market settled above Italian market during only 12 hours in Wk29, similar to previous week. When German market settles above Italian market, there is a much higher chance for HUPX also to settle above Italian Nord market, but in such scenario, HUPX has a chance to settle below or closer to EPEX-DE.

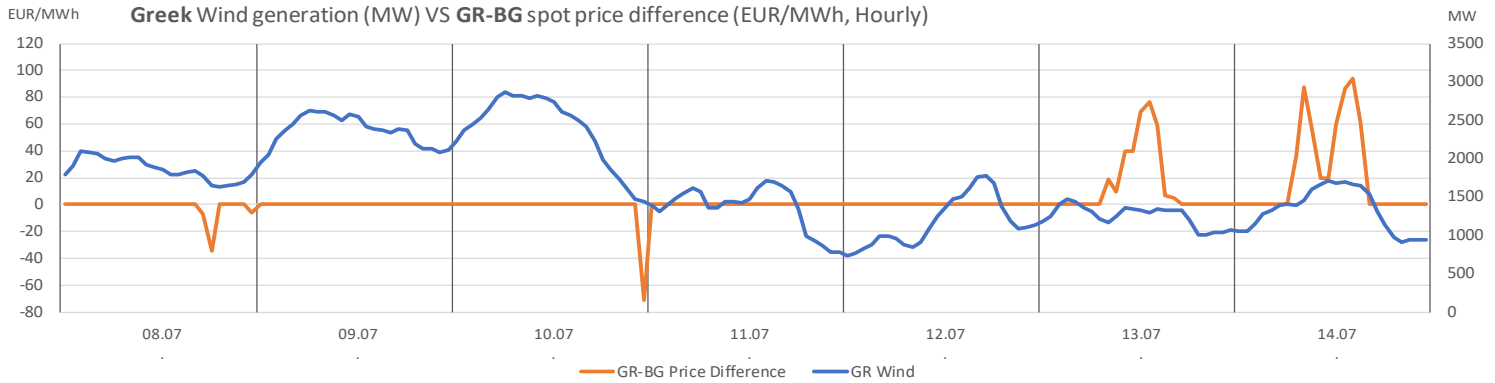




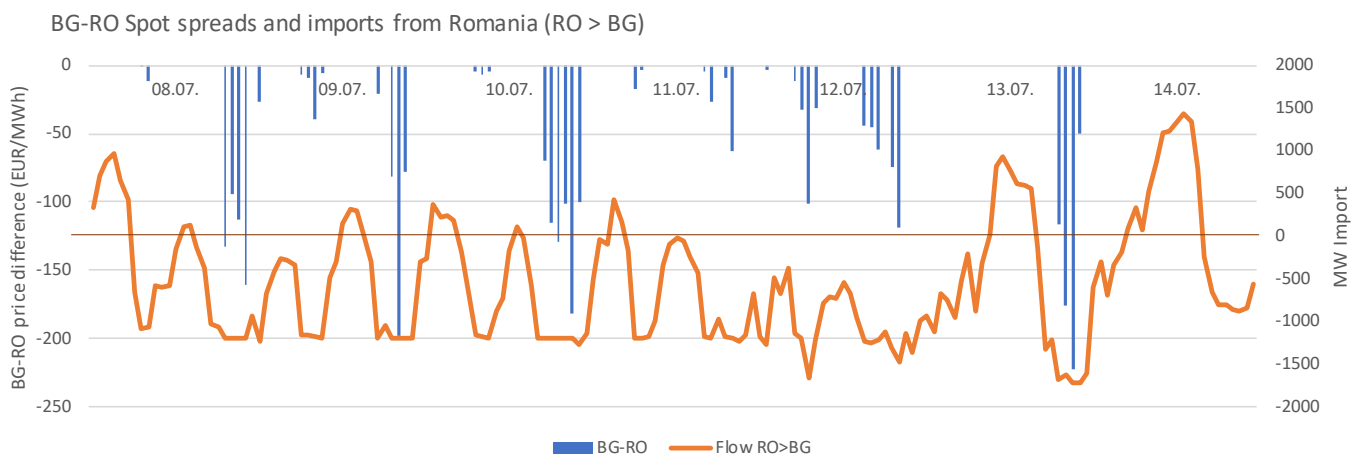
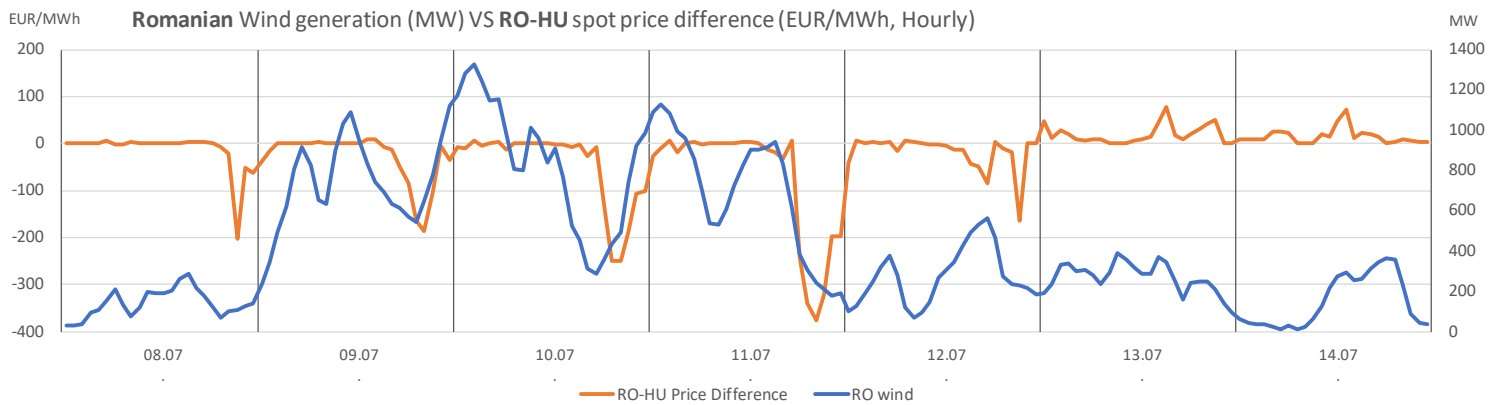
Austrian exports also had an impact on SEE pricing compared to EPEX-DE. Austrian exports further dropped (lower hydro generation), but remained at relatively high level. Positive Austrian exports help HUPX and EPEX -AT not to spike above EPEX-DE as physical energy injection in Austria reduce congestion on critical AT-DE grid elements. In the same time, FBMC exchanges are around 5-10% higher than 12 months ago due to the obligation of TSOs to increase RAMs on critical lines.



HENEX-HUPX price difference turned negative and it was the lowest since December 2022! Greece net position improved, despite sharp rise of consumption, due to significantly higher wind, gas and coal generation. However, HENEX settled above IBEX after three weeks, due to high spread during weekend.



In Romania, the wind output was similar to previous week. Unlike in previous weeks, the low wind output in Romania did not have impact on RO-HU spread, apart from weekend. The spread turned positive due to FMBC issues explained before. RO-BG spread was the highest since August 2022 as two markets were frequently decoupled during evening hours on working days. IBEX settled considerably below HUPX for the first time since the beginning of May. HU-RO and HU-BG spreads were the highest since June 2023 and January 2023, respectively.



- Spot prices on HUPX had a sharp rise of 86.52 EUR/MWh compared to last week, which was much higher compared to rise of prices in neighboring CWE markets, as well as compared to markets in the SEE Region, namely due to higher settlements on HUPX in H19-H24.
- The most important local drivers in HU+SEE Region this week was sharp rise of consumption, as temperatures were record high or close to record highs in most of the region. Another issue that supported consumption rise was long streak of days with extreme temperatures.
- Export of HU+SEE Region in Wk28 further dropped, and remained relatively low for the 6th week in a row. The net export of the region without Greece was the lowest since February 2022 and it was record low during summer! Exports sharply rose only in Bulgaria (the highest since April, turned into exporter). However, exports significantly dropped in Hungary (the lowest since the end of March), Croatia (among the lowest ever) and Serbia (the lowest since February) and they were lower in most of the region. Compared to the same period last year, the net position of the region was 1,700 MW worse. The exports were much lower in Serbia and Romania and they were lower in most of the region, apart from Greece.
- Imports from Core were higher on average, but the flows from Austria sharply dropped in H19-H24, due to FMBC issues, which was the main reason for extreme prices in those hours. The flows from HU+SEE Region toward Greece noticeably dropped, on higher flows from Greece, partly originating from Italy. The flows from HU+SEE Region towards Ukraine remained at high level.
- Generation structure in HU+SEE Region changed significantly (rise of all types!), but net position further worsened:
 - ⇒ Nuclear generation rose by around 900 MW.
 - ⇒ Gas generation rose by around 700 MW.
 - ⇒ Coal-fired generation rose by around 700 MW.
 - ⇒ Hydro generation rose by 600 MW.
 - ⇒ Wind generation rose by around 420 MW.
 - ⇒ Solar generation rose by around 650 MW in peaks.
- Temperatures in Wk28 sharply across HU+SEE Region, and they were record breaking in large parts of the region. Consumption-weighted temperature in SEE outside Greece was even 5.5 degrees Celsius higher than in Wk27 and stood at 29.0 degrees Celsius. Outside Greece, consumption sharply rose due to sharp rise of cooling demand. The consumption was even 3,200 MW higher compared to Wk27 and it was 2,900 MW higher than in Wk26 (for 3.9 degrees higher temperatures). The consumption in the region without Greece was even 2,650 MW higher than at the same time last year (-1/+1 week), for 5.7 degrees higher temperatures.
- Coal fired generation in Wk28 significantly rose compared to previous weeks and it was the highest since the end of March. The coal generation considerably rose in Serbia (the highest since the end of April) and it was higher in Greece, Croatia (the highest this year, it was zero until this week), Bulgaria and Montenegro. Revenues of coal units without fuel costs sharply rose. They were 87.3 EUR/MWh higher compared to last week, due to sharp rise of electricity prices and lower CO2 prices. Revenues remained positive and

stood at +109.1 EUR/MWh (without coal costs). In total, coal-fired generation was 730 MW higher than in Wk27, and it was 830 MW higher than in Wk26. Comparing to Wk27-Wk29 2023 period, coal-fired generation was around 800 MW lower. The coal output was considerably lower in Serbia and Greece. On the other hand, the coal output was higher in Bulgaria.

- Comparing to Wk27-Wk29 2023 period, coal-fired generation was around 800 MW lower. The coal output was considerably lower in Serbia and Greece. On the other hand, the coal output was higher in Bulgaria. The revenues of gas-fired units in Greece also rose and they were positive both on working days and on weekend. The gas generation in Greece was 360 MW higher than last week. The gas-fired generation in the region was higher than last year. Outside Greece, gas-fired generation was 80 MW above the last year (much higher in Romania). In Greece, gas-fired generation was 520 MW higher.
- Hydro generation in Wk28 noticeably rose in almost entire region, due to higher reservoir spending. The biggest rise was in Albania and Romania. The hydro generation was 9% higher than average for this time of year, or by some 550 MW. Danube inflow further declined by some 500 cbm/s, and the inflow was below average level by 12% in Wk28. It was 700 cbm/s lower than the long term average for this time of year, but it was around 300 cbm/s higher compared to the same period last year. Hydro generation was around 630 MW higher than in Wk27, but it was 300 MW lower than in Wk26. In the same time, the hydro generation was 500 MW lower than the same time last year.
- The wind generation in Wk28 noticeably rose compared to previous week and it was among the highest since mid-May, namely due to much higher output in Greece. In the rest of the region, the wind output was lower compared to previous week. The wind generation was above average level for this time of the year, i.e. it was 18 % higher compared to average or some 400 MW. Wind generation was 420 MW higher than in Wk27, and it was similar to Wk26. The wind generation was above the same period last year, by some 670 MW, also due to much higher generation in Greece. In the rest of the region, the generation was mostly below last year
- Solar generation in Wk28 noticeably rose and it was among the highest ever. The generation was higher in all countries. In total, solar generation was 650 MW higher in peaks compared to the last week. The overall solar generation was above the same period last year, by around 1,600 MW.
- Nuclear generation in Wk28 rose by 900 MW compared to last week, due to higher output in Bulgaria, as one unit in NPP Kozloduy was back service after unplanned outage that has lasted for over three weeks. The nuclear generation in the region was similar compared to +1/-1 week at the same time last year.
- Observing region (without BiH), the maintenance plan of thermal units in Wk28 was only 190 MW more intensive than last week. The gas availability was the same as the last week, the coal availability was 190 MW lower, while the nuclear availability was the same as the last week. Compared to the last year, total availability of thermal units in Wk28 was around 600 MW higher. The coal availability was higher (+900 MW), the gas availability was lower (-280 MW), while the nuclear availability was the same as the last year.