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CENTRAL EASTERN EUROPEAN
GAS EXCHANGE



Global & Regional Market Analysis

NATURAL GAS, March 2023

19/04/2023

STORIES OF THE MONTH

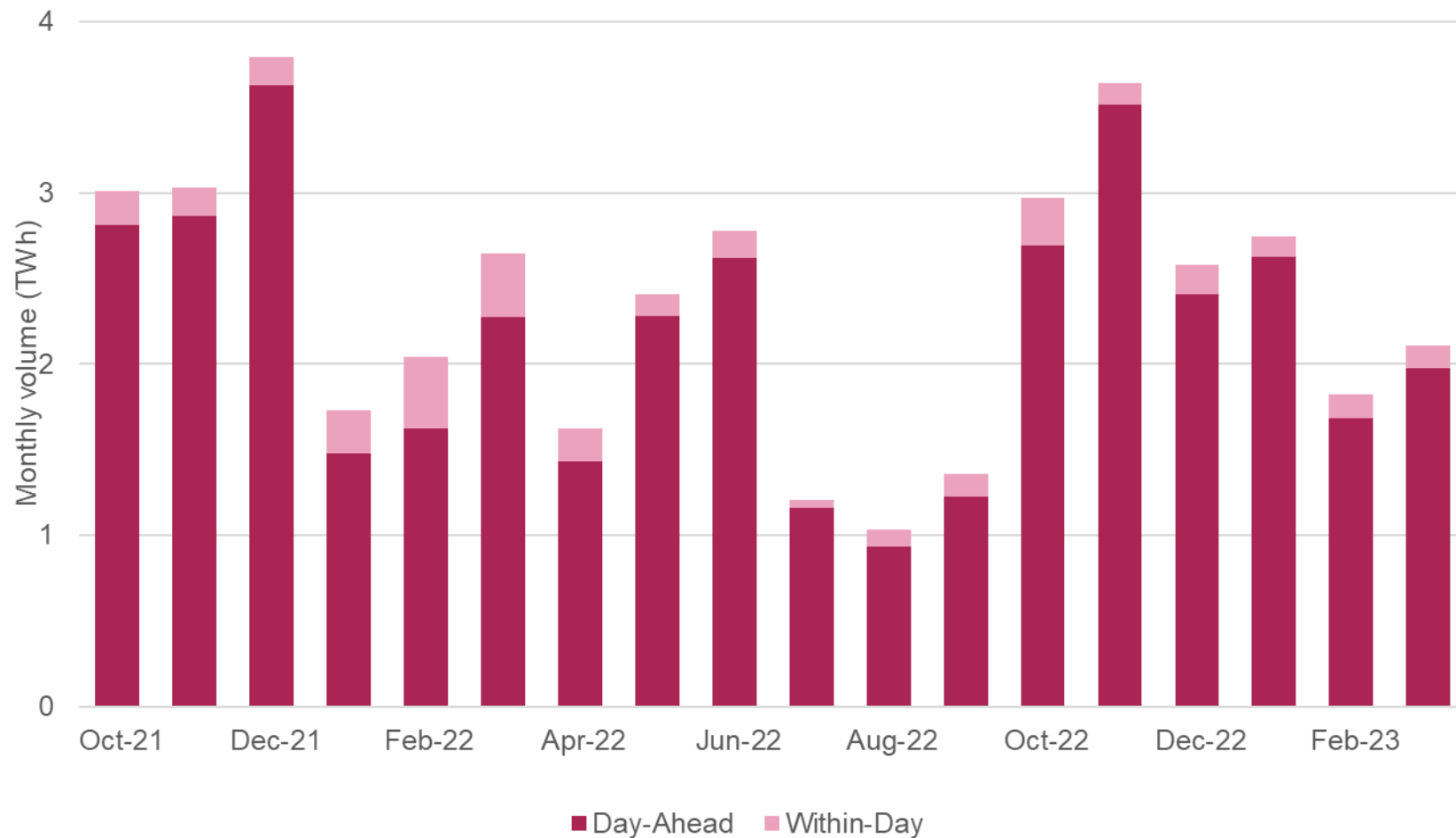
MARCH 2023

- » On 1 March **ACER published its report for the EC** in which they supported extending the TTF gas hub price cap (MCM) to other virtual gas hubs if they are liquid enough.
 - » **EC adopted an implementing act on 31 March** to set out the technical details regarding the **application of the MCM mechanism to derivatives linked to other virtual trading points in the EU from 1 May**.
- » ACER extended the **timeframe in the LNG price benchmark to 10 days** instead of 5. It also started calculating a single EU LNG price assessment in addition to the price for NWE & SE.
 - » ACER started **publishing the spread between its LNG price and the ICE TTF FM** on 31 March.
- » **Registrations for companies to use the AggregateEU** service provided via the Prisma platform opened on 28 March.
- » EU ministers also agreed to **extend the 15% gas reduction targets for another year**. Countries are free to choose how they achieve this.
- » **Planned annual maintenance** along Russian 31.5 bcm **TurkStream** natural gas pipeline to Turkey is expected to take place **between 5-12 June**.
 - » Russian Deputy Prime Minister said that “Hungary’s natural gas supplies will remain undisturbed in the upcoming period”.
- » **Four LNG terminals** (Dunkirk, Montoir, Fos Cavaou and Fos Tonkin) **were affected by a French energy worker’s strike** over government pension reforms during the majority of March.
 - » The **doubling of capacity at Croatia’s Krk LNG** import terminal to 6.1bcm is expected to be completed in **2025**.
- » On 28 March EU energy ministers decided that Member states would have the option to **temporarily limit access to capacity for Russian pipeline gas and LNG**. The new rules still need to be discussed and agreed with the European Parliament before they can become binding.
 - » Earlier on 9 March **EU energy commissioner asked member states and companies to stop importing Russian LNG**.
- » **MOL carried out 3 successful shallow gas drillings in Eastern Hungary** in the last two months, two in the Komádi area and one in Álmosd; the three new wells can meet the gas needs of up to 20,000 average family homes for several years.
- » The unit rate of the **security natural gas member contribution will increase** from 471.70 HUF/MWh to 688.68 HUF/MWh with effect from April 1, 2023.
 - » Gergely Gulyas said the **special stock will be maintained**. Last summer a 739 mcm special stock was built by MSZKSZ.

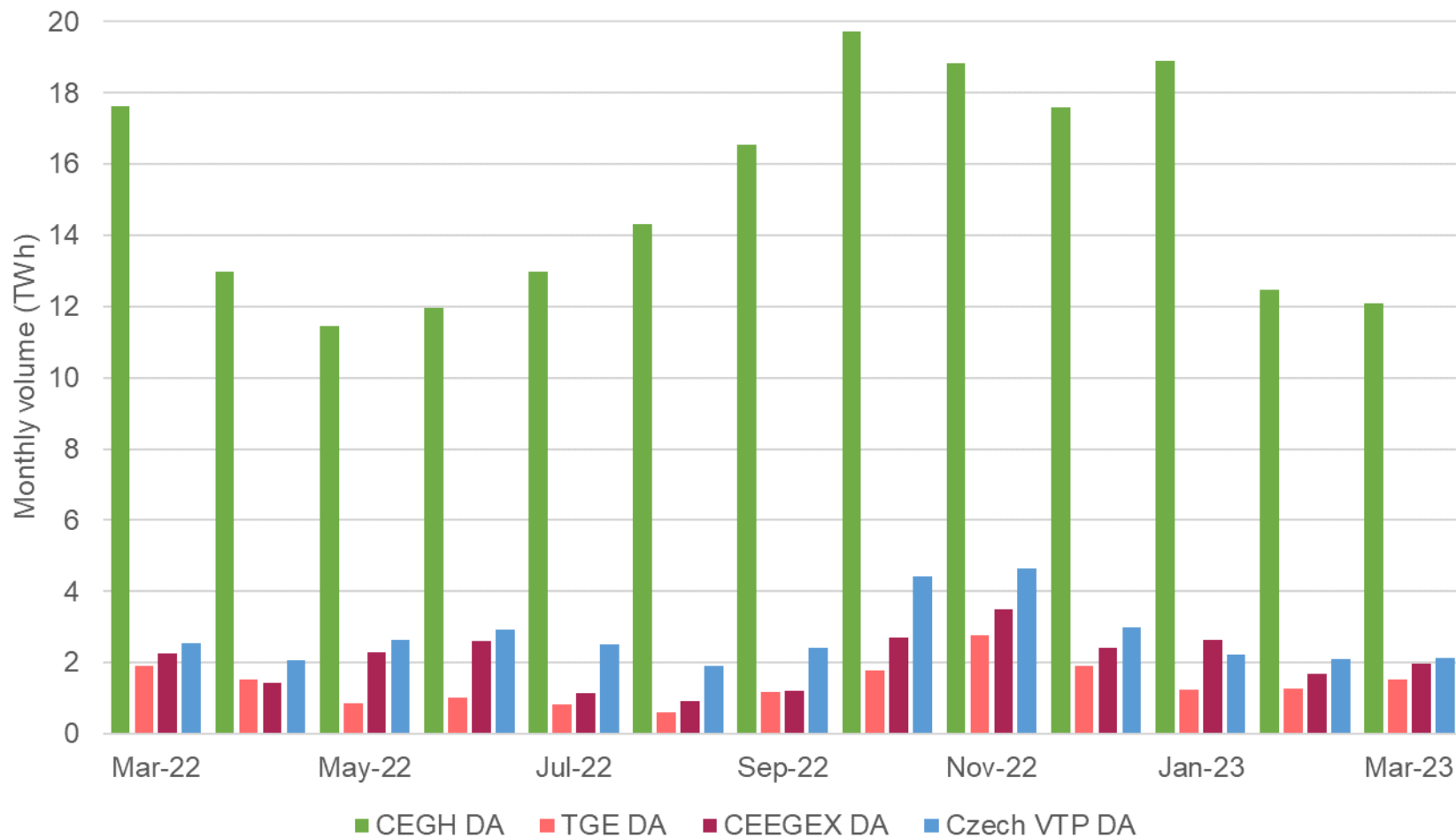
TRADED VOLUMES

EXPERT OPINION:

- » CEEGEX traded volumes decreased YoY, **but increased MoM.**
- » WD volumes proved to be stable, thus the increase was caused by higher DA volumes.
- » Since February the **TTF FM-spot spread remained close to 0**, which means there was no real incentive to trade spot volumes.
- » Furthermore, **domestic demand lowered** and storage **withdrawals slowed** down, too.



REGIONAL SCOPE DA MARKETS



EXPERT OPINION:

- » In March CEGH DA volumes decreased, but **traded volumes increased on other regional exchanges.**
- » On overall, there was a drop in volumes compared to 2022 March.

REGIONAL PRICES AND SPREADS

EXPERT OPINION:

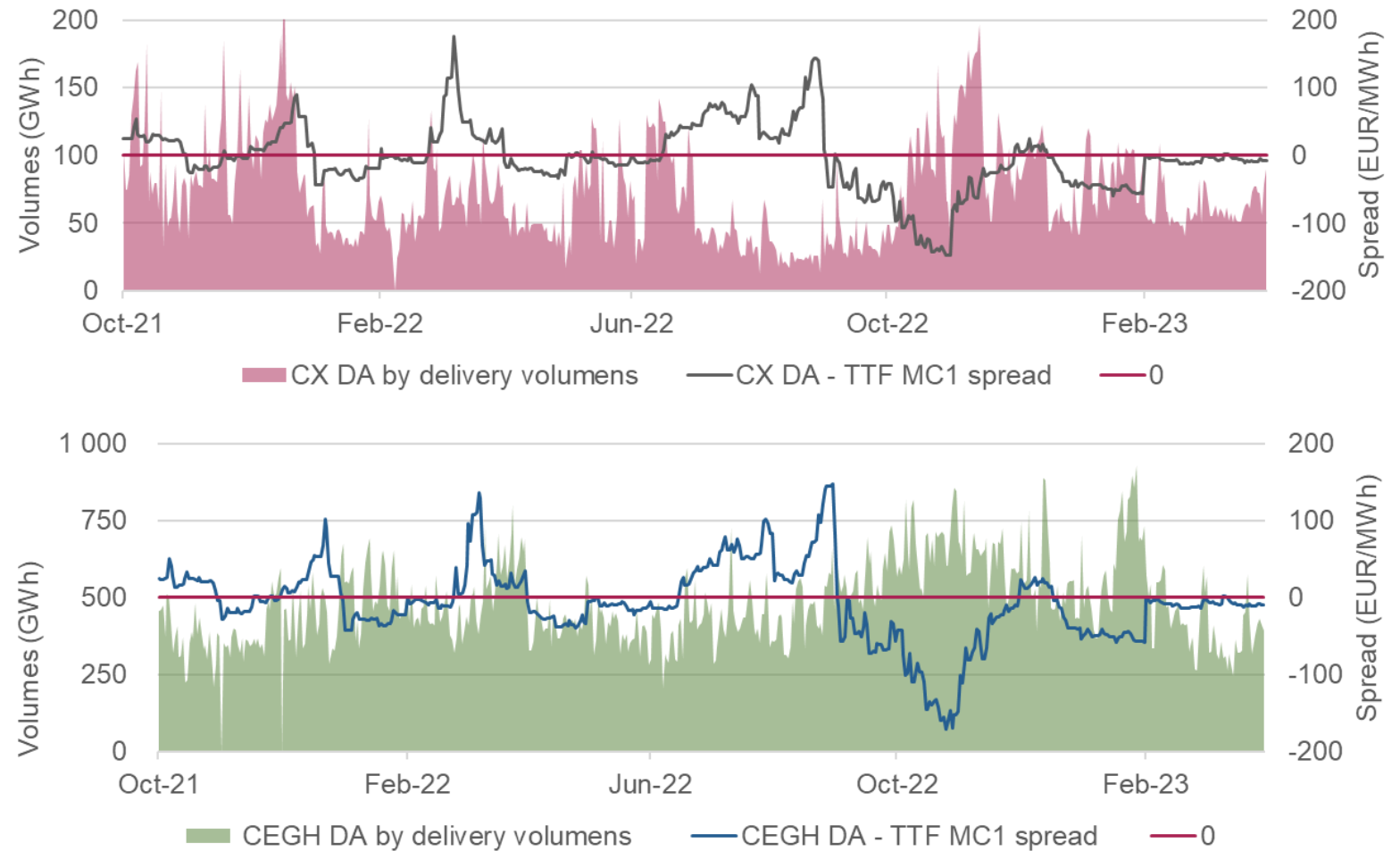
- » The **CX-CEGH** and **CX-TTF** spreads **narrowed** in comparison to 2022 values.
- » The **CX-CEGH** remained **positive**, resulting in the profitability of gas imports from AT to HU even at higher annual cross border fees.
- » **AT>HU** flows have been **increasing since January** after a drop in December, when the spread was below 0.



TTF FM-SPOT SPREADS

EXPERT OPINION:

- » In March the **TTF FM-spot spread was again close to 0**, which means there was no real incentive to trade spot volumes.
- » On both exchanges the DA volumens decreased compared to the previous year.



JAPANESE CANDLES



EXPERT OPINION:

- » In March **volatility remained moderated** in comparison to 2022.
- » Since January prices have been pressured by **mild weather, low demand & high LNG inflow**.
- » No significant news relating to pipeline supply drops or regulatory changes also kept markets calm.
- » By the end of March **colder weather forecasts and LNG terminal worker strikes** slightly bolstered prices.

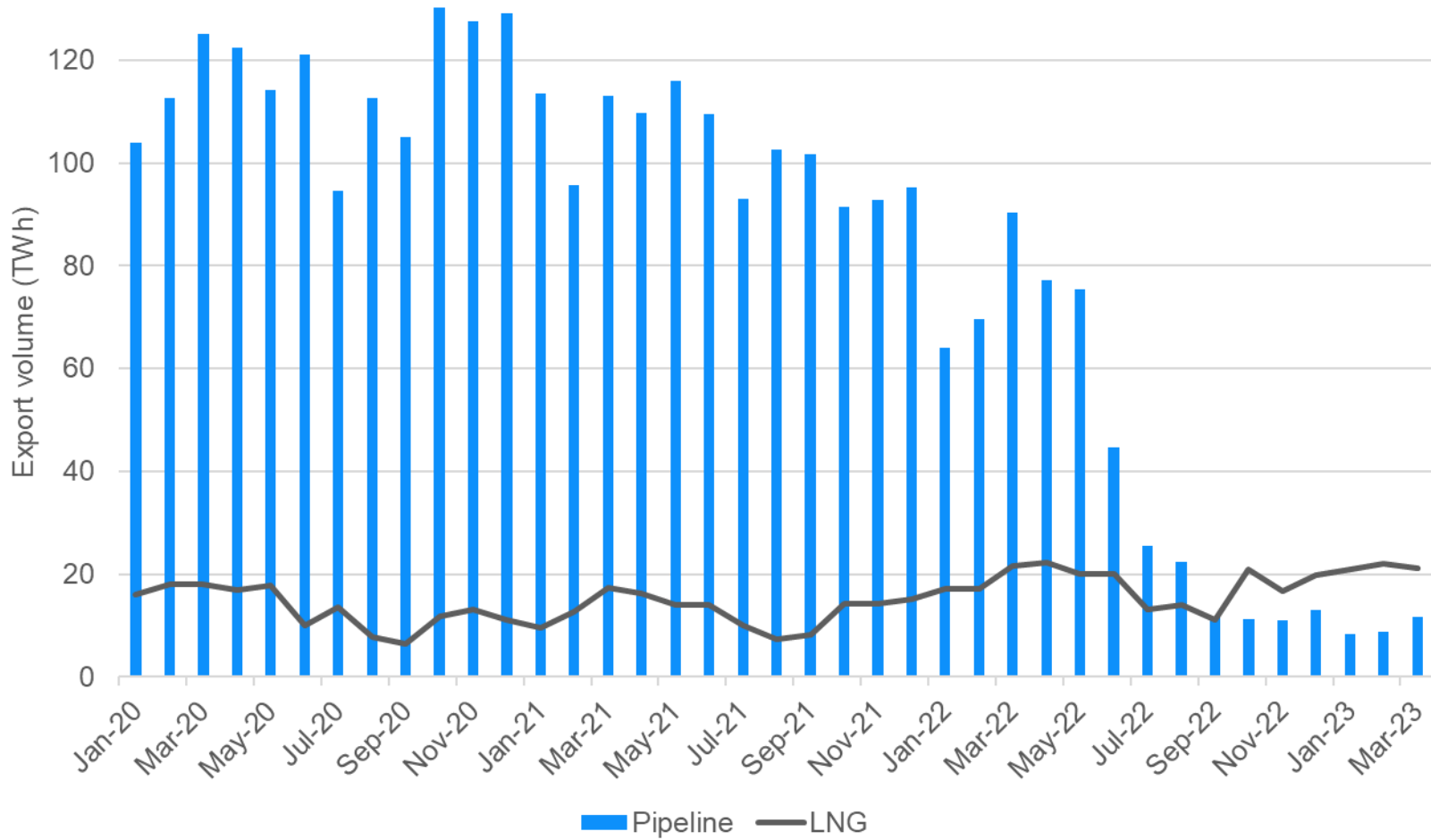
NATURAL GAS PRICES SNAPSHOT

01/03/2023

31/03/2023



RUSSIAN GAS EXPORT TO EU



EXPERT OPINION:

- » Russian natural gas export to the EU via pipeline have fallen significantly since summer 2022, mainly due to the consequences of the war.
- » The LNG export have increased, reaching a steady **20 TWh monthly** volume recently, but this is still far from making up for the lack of pipeline volume.
- » Russian LNG export to non-EU members haven't increased since 2022, meaning the total export is higher only because of the LNG sent to the EU.

BIOMETHANE OUTLOOK



» Production:

- The most important step in the production of biomethane is the purification process, when water and carbon-dioxide are removed from the biogas. Biomethane can also be produced by converting solid biomass to syngas which is later goes through to methanation process.
- The base of biogas is **feedstock**, which is the organic material used as substrate. It can be solid and liquid manure, agricultural waste and residues, industrial food and beverage waste, sustainable crops, sewage sludge and the organic fraction of municipal solid waste.

» Regulation:

- Renewable gases were highlighted by the European Union's **RED II** directive **in 2018**, which extended guarantees of origin to energy sources other than electricity. In September 2022, EU voted to revise RED II, the **RED III** package could bring significant changes to the rules in the coming years.
- The biomethane quality conditions for the injection are set by international and domestic standards, which must be fully complied with.

» Price:

- The cost of producing biomethane is higher than the current price of natural gas, which means that the difference is paid by selling the GOs. The price of biomethane GOs vary strongly, but they are much higher than certificates in the power sector. The price range is around **23 – 70 EUR/MWh**, which is depending on the producing country, the feedstock and other variables.

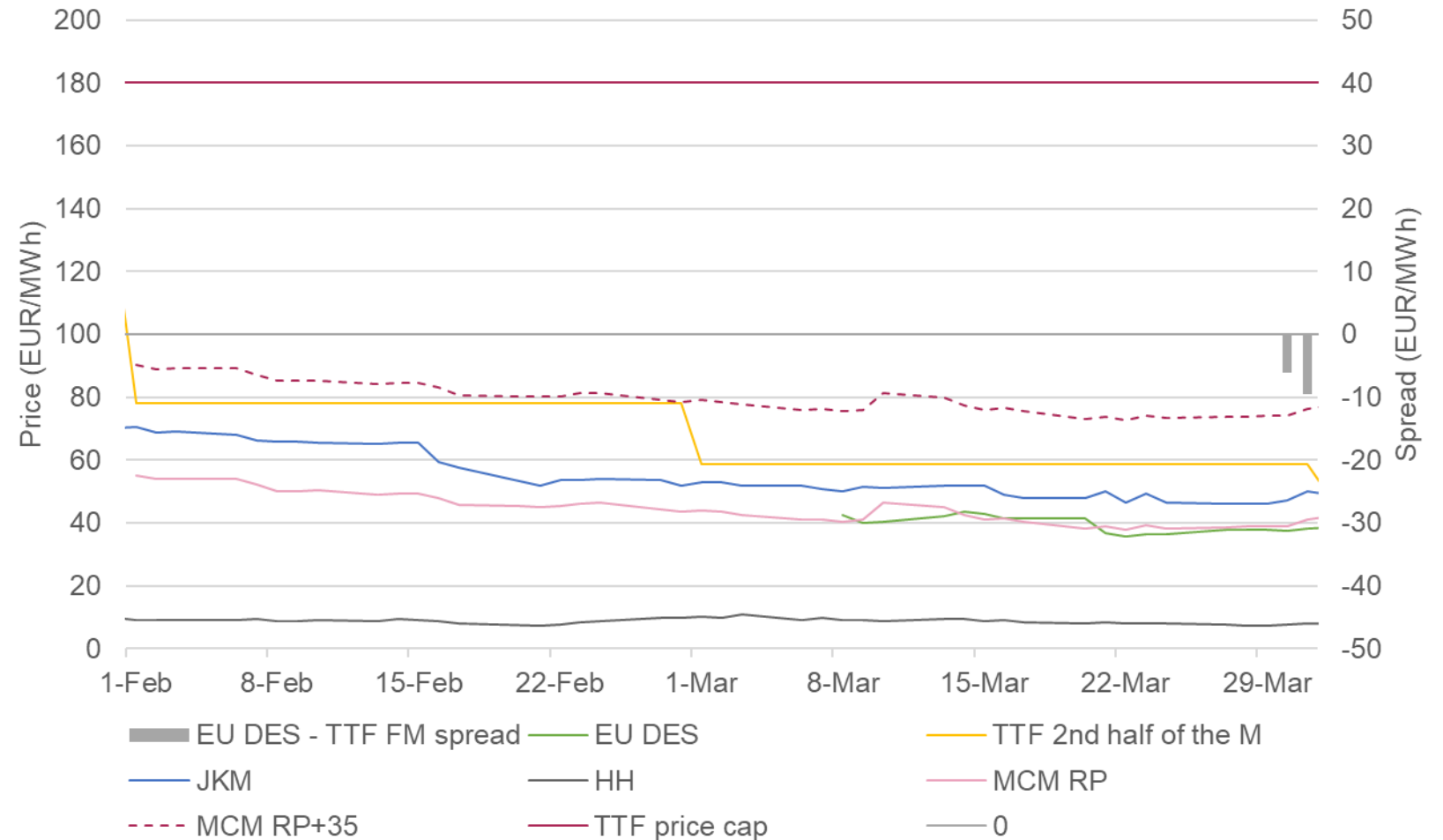
» Hungarian relation:

- The total Hungarian biogas production is **1 TWh**, while total biomethane injected to the gas grid is only **50 GWh**. So far biomethane was injected to natural gas system only in one place in Hungary, at the Kaposvár sugar factory.
- Currently there is no opportunity to sell biomethane GOs in Hungary. Landwärme is a biomethane supplier and service provider for the Kaposvár sugar factory, they sell biomethane in Germany, and under a new agreement with CEGH GreenGas Platform, also in Austria.

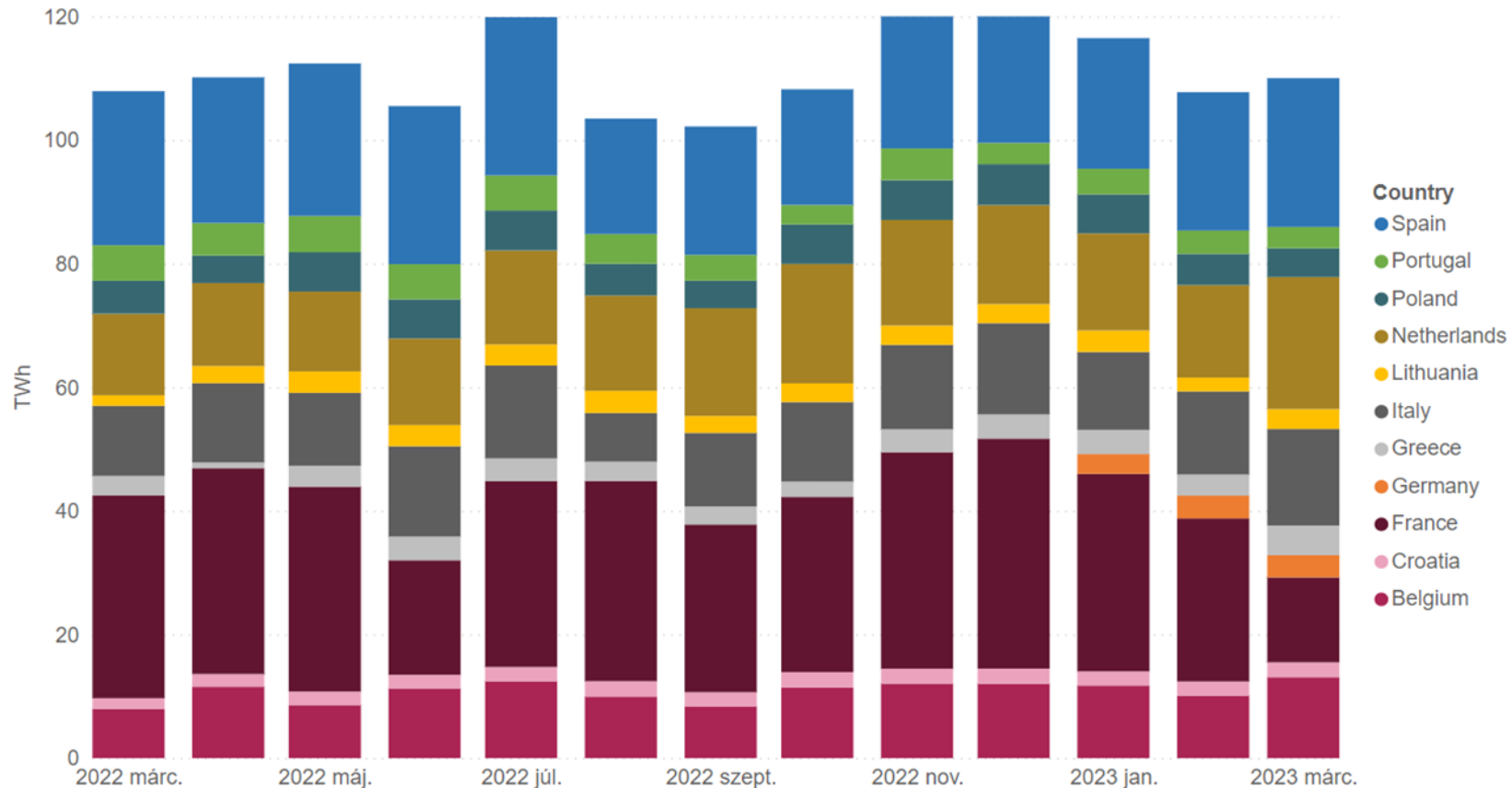
LNG BENCHMARKS VS MCM

EXPERT OPINION:

- » ACER started publishing a set of new benchmarks in 2023:
 - **EU DES** = LNG price benchmark for EU (NWE & SE) based on data reported by market participants
 - **MCM RP** = benchmark price based on EU DES, JKM, HH. This is the first basis of the „price cap” activation.
 - **EU DES – TTF FM spread** = This is the second basis of the „price cap” activation.
- » The **dynamic bidding limit** is set at MCM RP + 35 EUR/MWh.
- » The **price cap is activated** if the TTF FM price is above 180 EUR/MWh & the MCM RP – TTF FM spread is above 35 EUR/MWh.
- » In present analysis TTF daily prices for the FM product are averaged according to the **methodology of calculating JKM** with the purpose of a more precise comparison.



LNG SEND-OUTS BY EUROPEAN COUNTRIES*



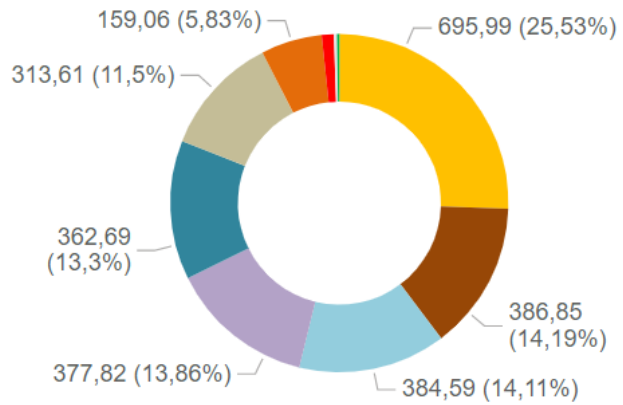
EXPERT OPINION:

- » Europe's LNG Send-Outs increased in March.
- » French LNG Send-Out has halved due to LNG terminal worker's strikes.
- » Some countries, such as **Belgium, Greece, Italy, Lithuania, the Netherlands and Spain** have increased the amount of LNG in the system.
- » In Italy, Spain and the Netherlands, we see that **gas storage facilities were being filled in March** and are all above the average for the last 4 years at the same time of year.
- » **Finland new FSRU began supplying gas to the grid**, but data at ALSI is not available so far.

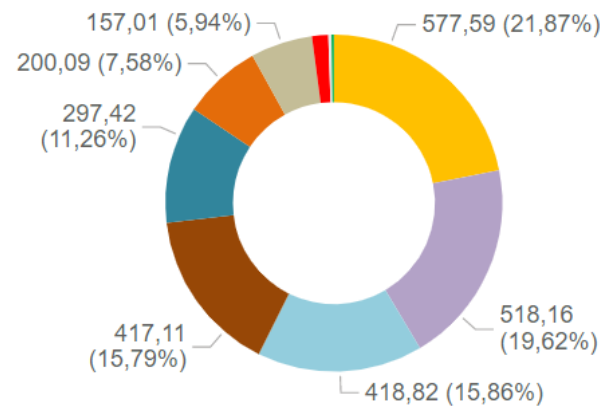
• Excluding UK, Finland (data not available)

NET ELECTRICITY GENERATION BY TYPE OF FUEL (TWH)

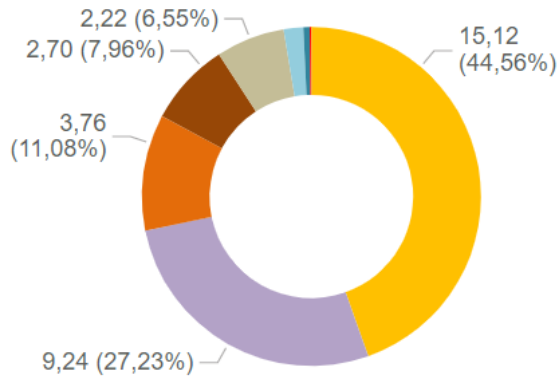
2021 European Union



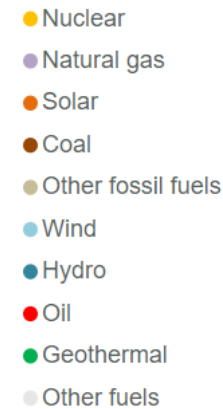
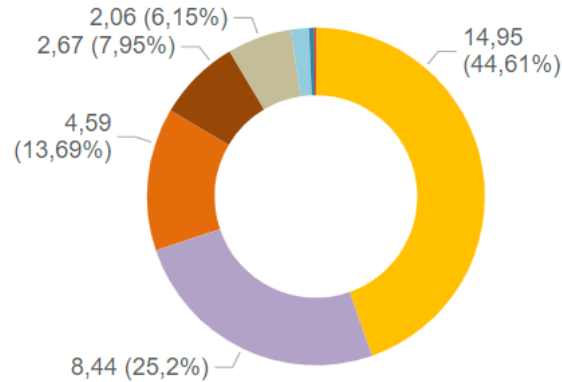
2022 European Union



2021 Hungary



2022 Hungary



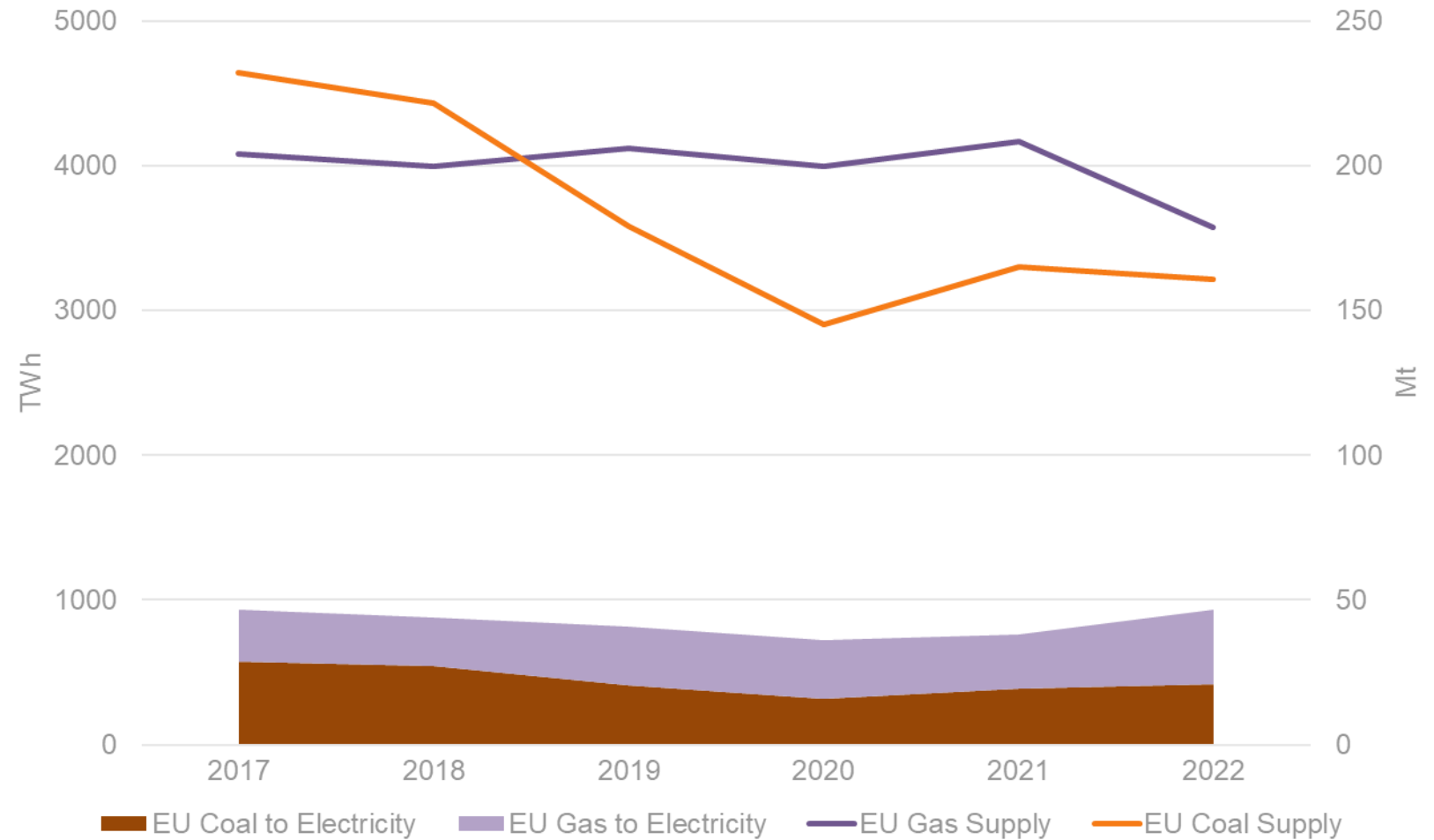
EXPERT OPINION:

- » In the EU, the **energy mix for electricity generation has changed** in just one year, with **the use of nuclear reactors declining**, although the second largest percentage of the mix has changed **from coal to gas**.
- » Both solar and **wind power increased their use for electricity generation**, but **hydropower decreased** due to warm weather.
- » The **use of coal in the energy mix grew**, while the use of other fossil fuels fell.
- » There are **no significant changes** in the energy mix used for electricity generation **in Hungary**. We can see that the amount of **solar energy produced has increased**.

GAS AND COAL PRODUCTION IN THE EU

EXPERT OPINION:

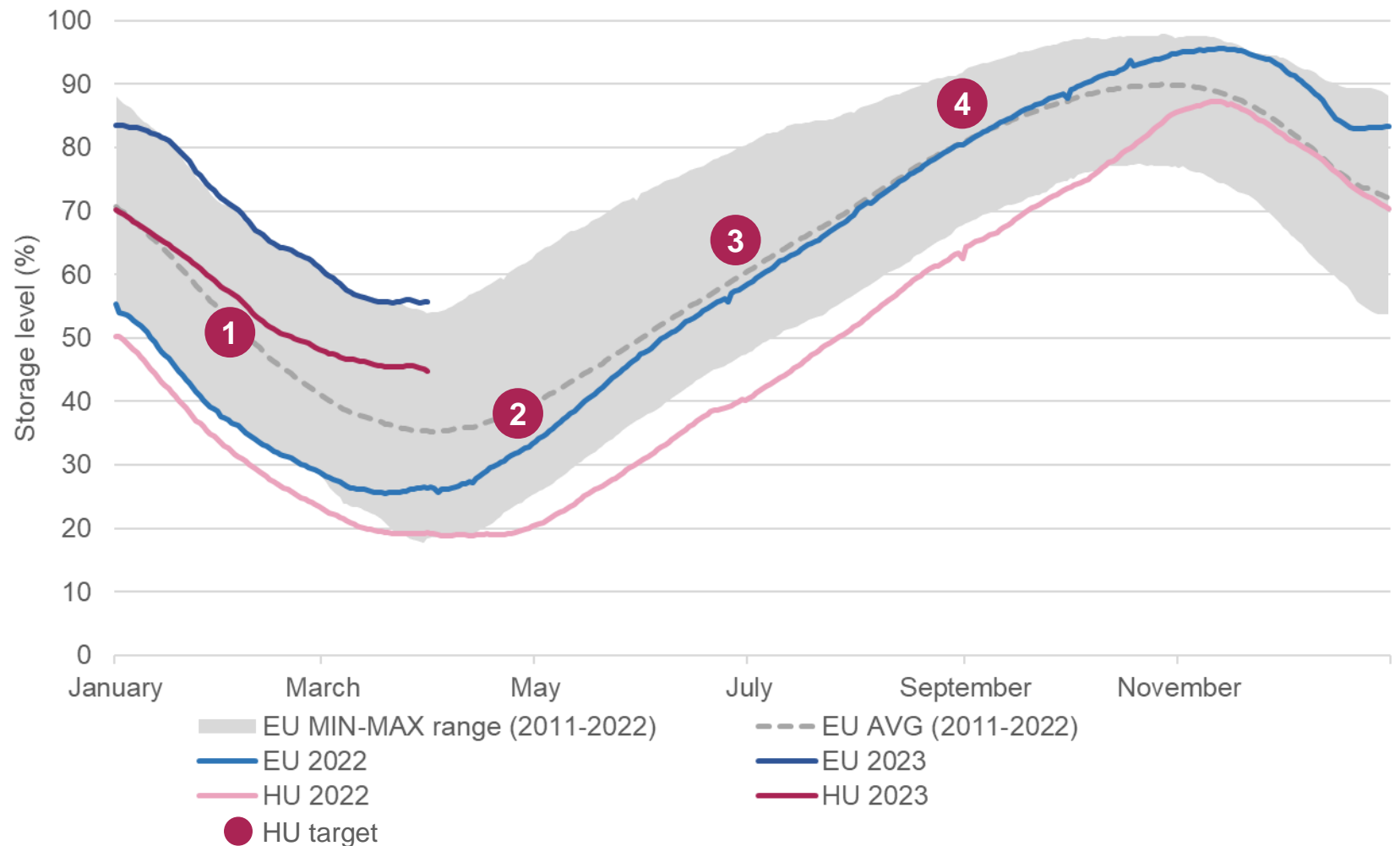
- » The trend over the past 6 years has been **for gas to replace coal in some areas of energy.**
- » The amount of **coal mined decreased from 230 Mt to 160 Mt**, the amount of **coal used to generate electricity fell from 550 TWh to 400 TWh**.
- » In contrast, **gas supply decreased less steeply from 4,000 TWh to 3,500 TWh**, while the importance of **gas used for electricity generation increased from 400 TWh to 600 TWh**.



GAS STORAGE LEVEL IN EU AND HU

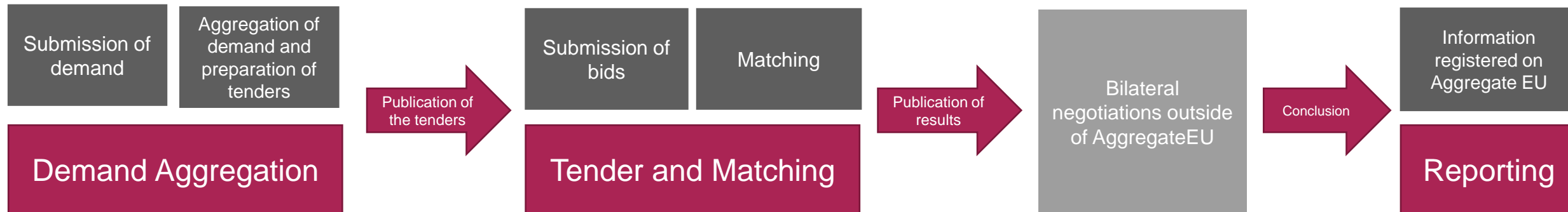
EXPERT OPINION:

- » European **withdrawals slowed down** in March and aggregated EU storage levels remained above the maximum values of 2011-2022.
- » EU storages were at 55% by the end of the month.
- » Hungary is on track to meet the next intermediate target level.
- » **HU intermediate targets:**
 1. Feb 1: 51%
 2. May 1: 37%
 3. Jul 1: 65%
 4. Sept 1: 86%
- » **EU final target by Nov: 90%**

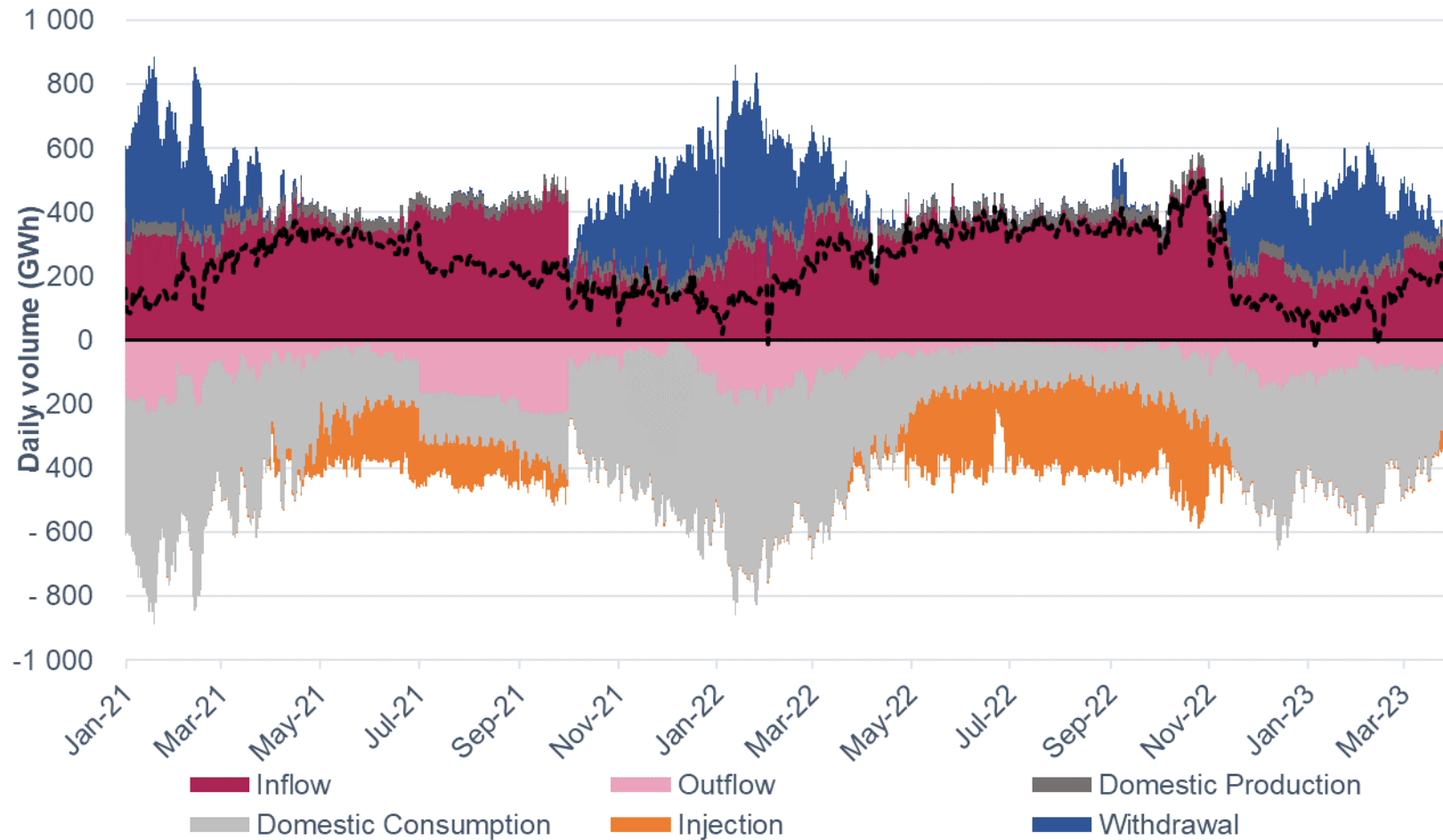


AGGREGATEU – OVERVIEW, TENDERING AND MATCHING PROCESS

- » The platform service provider is **PRISMA**, the aim is to demand aggregation and joint purchasing of gas.
- » The **trading** will be open to companies in the **27 EU member states**, as well as **Ukraine, Moldova and Serbia**, but Russian gas will be excluded from the platform.
- » Create an opportunity for large energy users in sectors such as **cement, fertilizers and steel** to pool their demand and buy gas directly from suppliers outside the EU.
- » The volumes will be traded and **delivered as monthly** products for a **maximum period of 12 months**.
- » Allows for the aggregation of demand for **both pipeline natural gas and LNG**.
- » **Minimum** demand value is **5 GWh at VTP** and **300 GWh at the European Virtual LNG**
- » **Registrations** for companies to PRISMA platform **opened on 28 March**.
- » The **first aggregation of demand** would happen in **late-April**, followed by a joint purchasing **tender for it in May**. This would be followed by further aggregations and tenders organized every two months.
- » The delivery point will either be national/virtual trading/balancing points or an LNG terminal



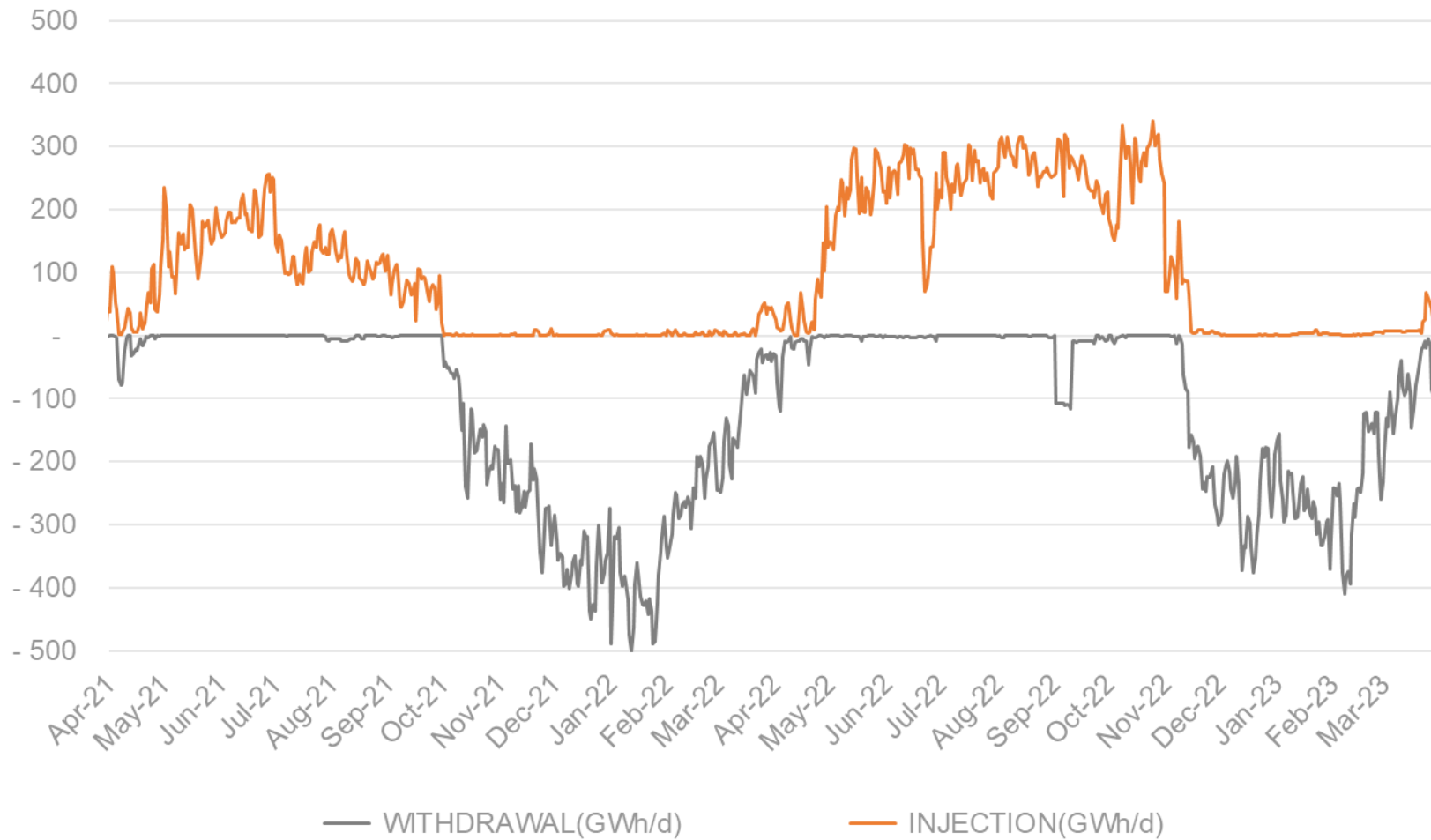
HUNGARIAN GAS MARKET BALANCE



EXPERT OPINION:

- » In Hungary, **March temperatures were mild**, except for the end of the month. The monthly **gas consumption was below February and 25% lower YoY**.
- » Storage withdrawals dropped in March in line with lower demand, **injections started** already by the end of March.
- » On overall **imports increased** in comparison to February **with the return of flows from AT**. HR and RO imports also ramped up.
- » **Exports to UA remained high** since February, while former exports to SK disappeared.

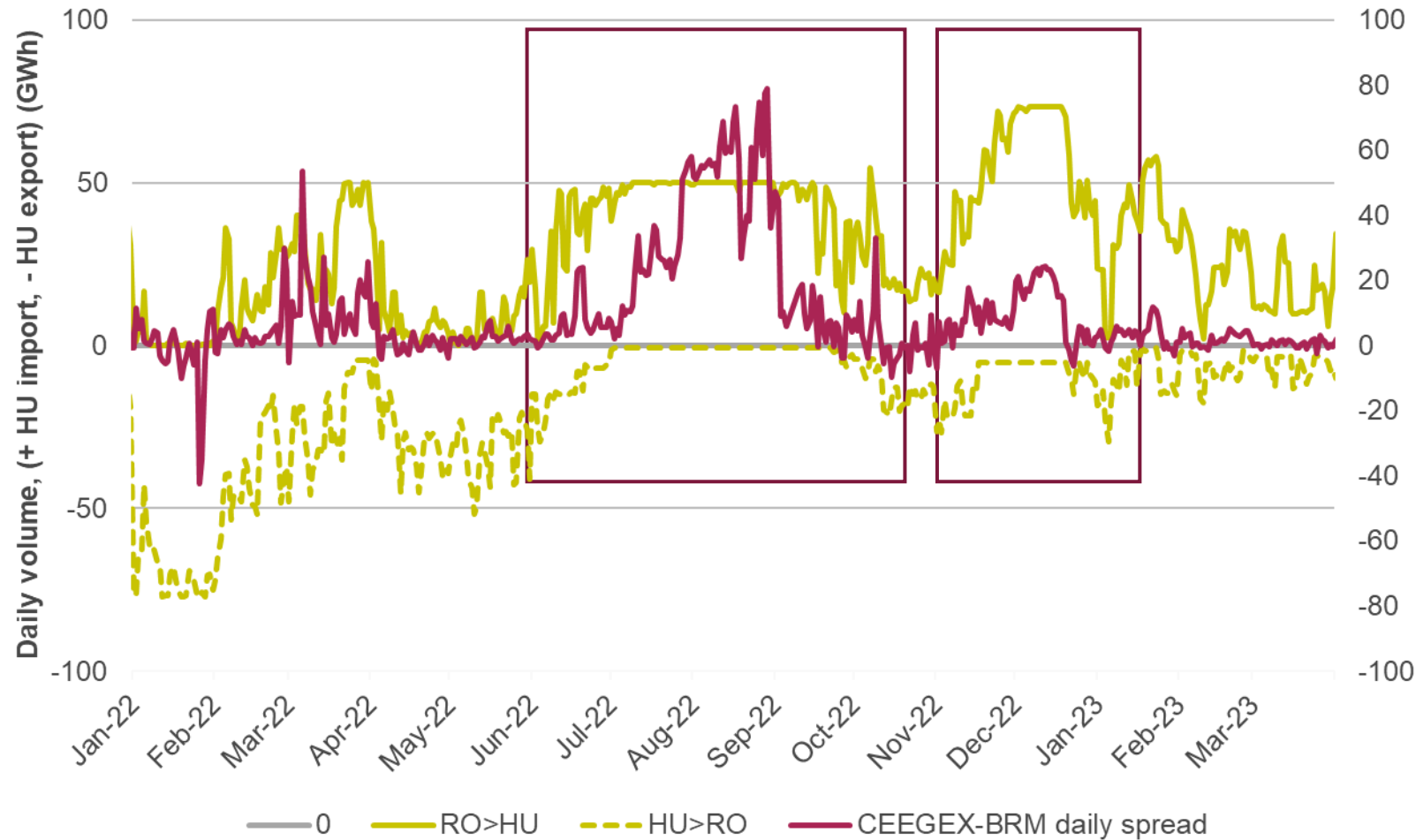
INJECTION AND WITHDRAWAL RATE IN HUNGARY



EXPERT OPINION:

- » Rate of injection was quite constant on the summer 2022.
- » Rate of withdrawal was lower in average than last year due to the milder weather.
- » Withdrawal decreased at the end of the winter season. Possible reason could be the lower price environment.

BRM-CEEGEX SPREAD AND HU-RO GAS FLOWS



EXPERT OPINION:

- » The CEEGEX-BRM spread directly affects the gas flows in the Hungarian-Romanian border.
- » When CEEGEX was premium, the amount of allocated gas increased in the direction of Hungary.
- » When CEEGEX-BRM spread was nearly zero, allocation was observed in both direction.