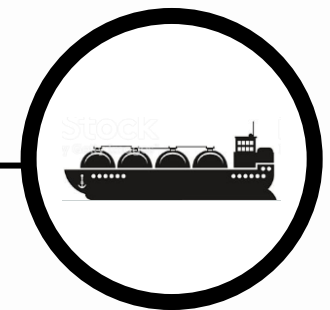


Global & Regional Market Analysis

Natural Gas

June 2022

20/07/2022





Stories of the recent weeks

6th package of EU sanctions against Russia was accepted by cutting oil imports from Russia by 90% by the end of the year. NATO announced new country members. On 23 June Germany signed off on the 2nd stage of their emergency plan.



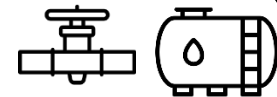
On 14 June Russian flows decreased on the NS1 pipeline, a day later flows were further cut to 40% of capacity due to maintenance (gas turbines stuck in Montreal amid sanctions). TurkStream was suspended between 21-28 June due to scheduled annual maintenance.



A fire took place at Freeport plant on 8 June, 2nd biggest LNG terminal in the US, it will not be fully operational until late 2022. On 30 June a Russian decree was issued to seize full control of the Sakhalin-2 gas and oil project (4% of the world's LNG output).



FGSZ could be ordered under the supervision of the Hungarian state in the case of gas supply security emergency situation. Srbijagas signed a contract to store 500mcm of natural gas in Hungary.

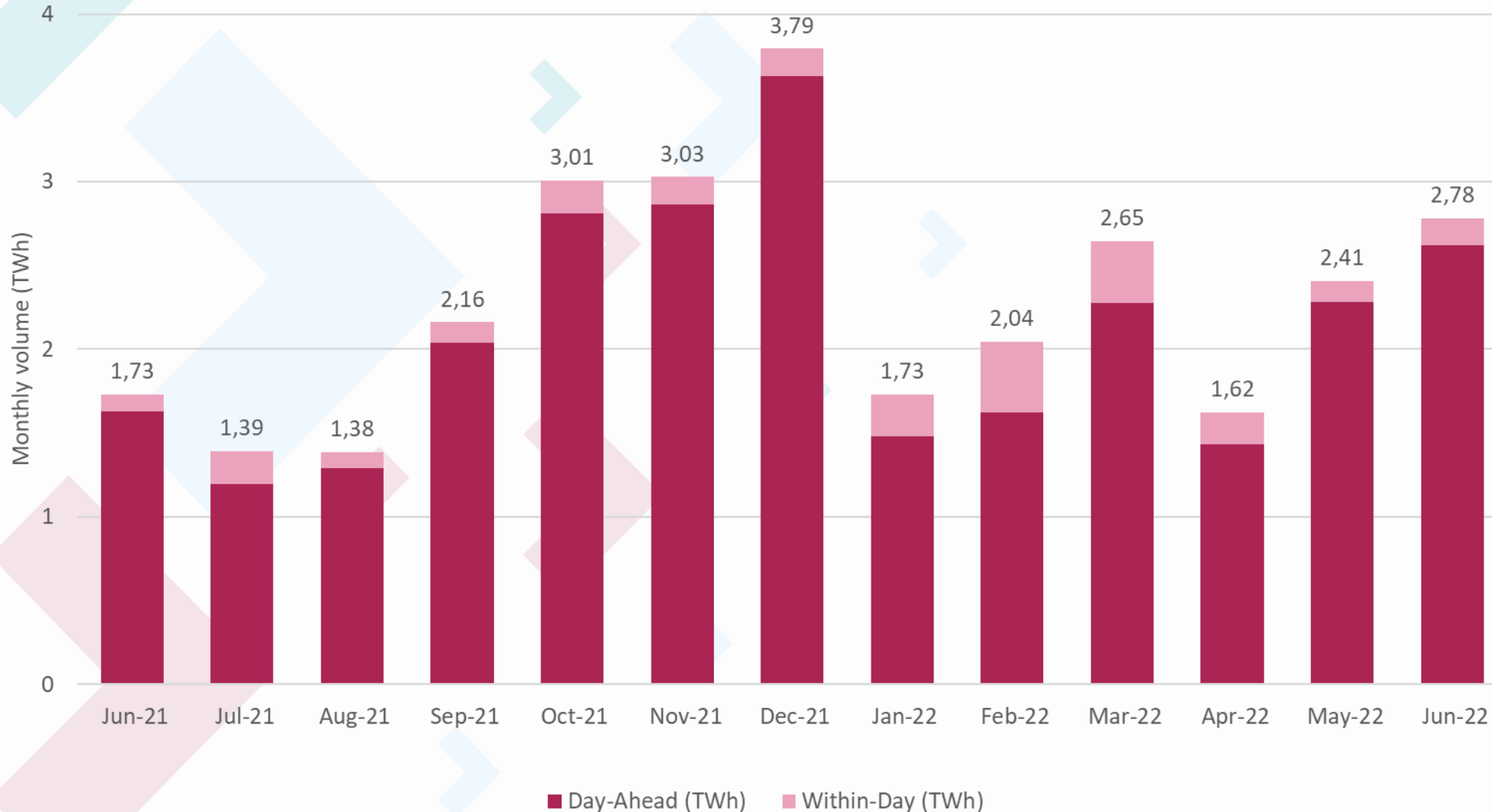


The European Parliament formally approved the bloc's new gas storage rules mandating that stocks be 85% full by 1 November. Iberian gas-for-power price cap to start June 14 after EC approved measure for 12 months.



CEEGEX monthly traded volumes

Source: CEEGEX

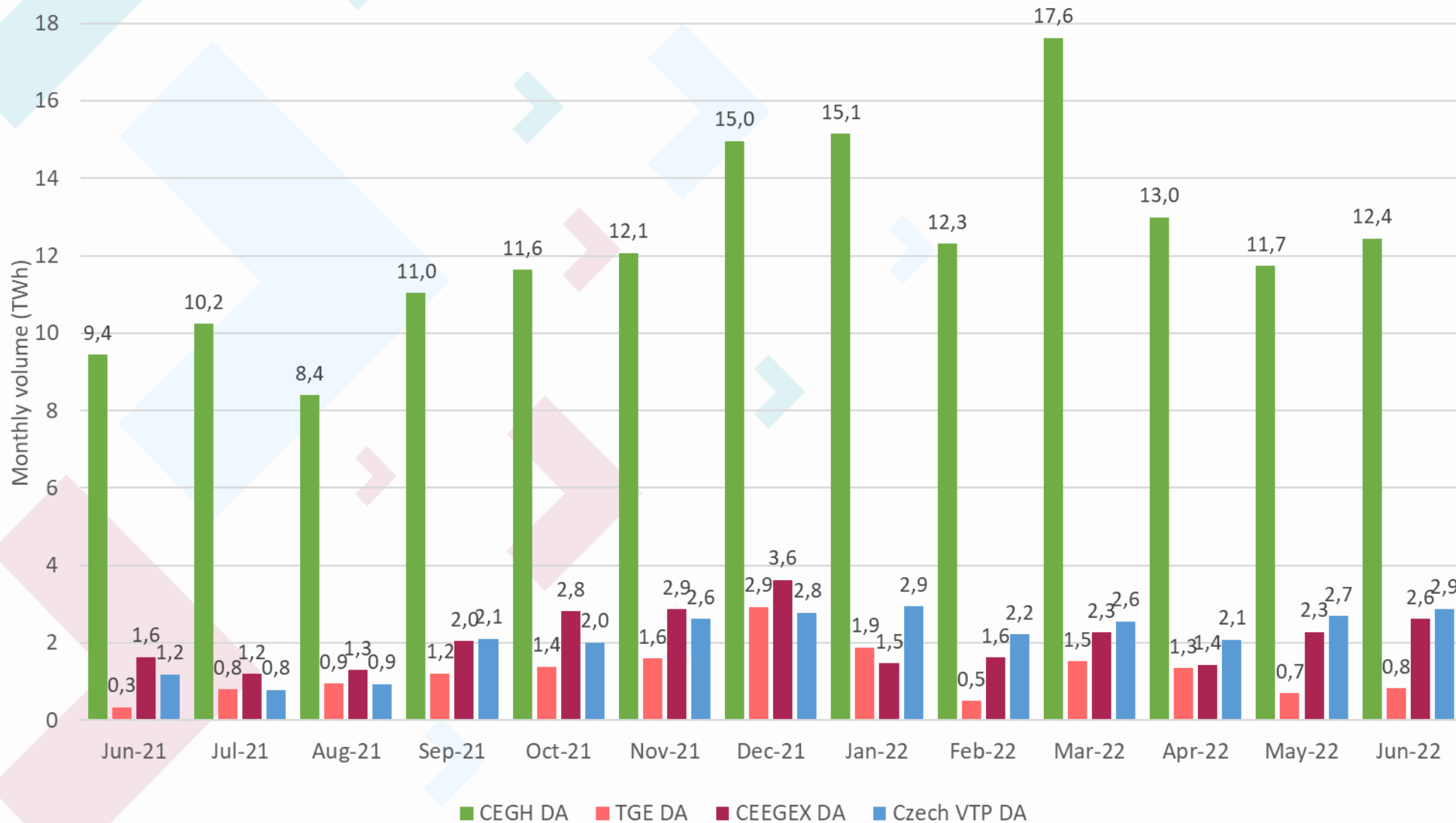


EXPERT OPINION:

- CEEGEX traded volumes further increased in June.
- Injections started to increase with almost a month delay in May, but remained strong throughout June, despite lower Russian flows.
- Winter-summer spreads in May returned to the positive territory. (Discussed in more detail later).

Regional scope DA markets

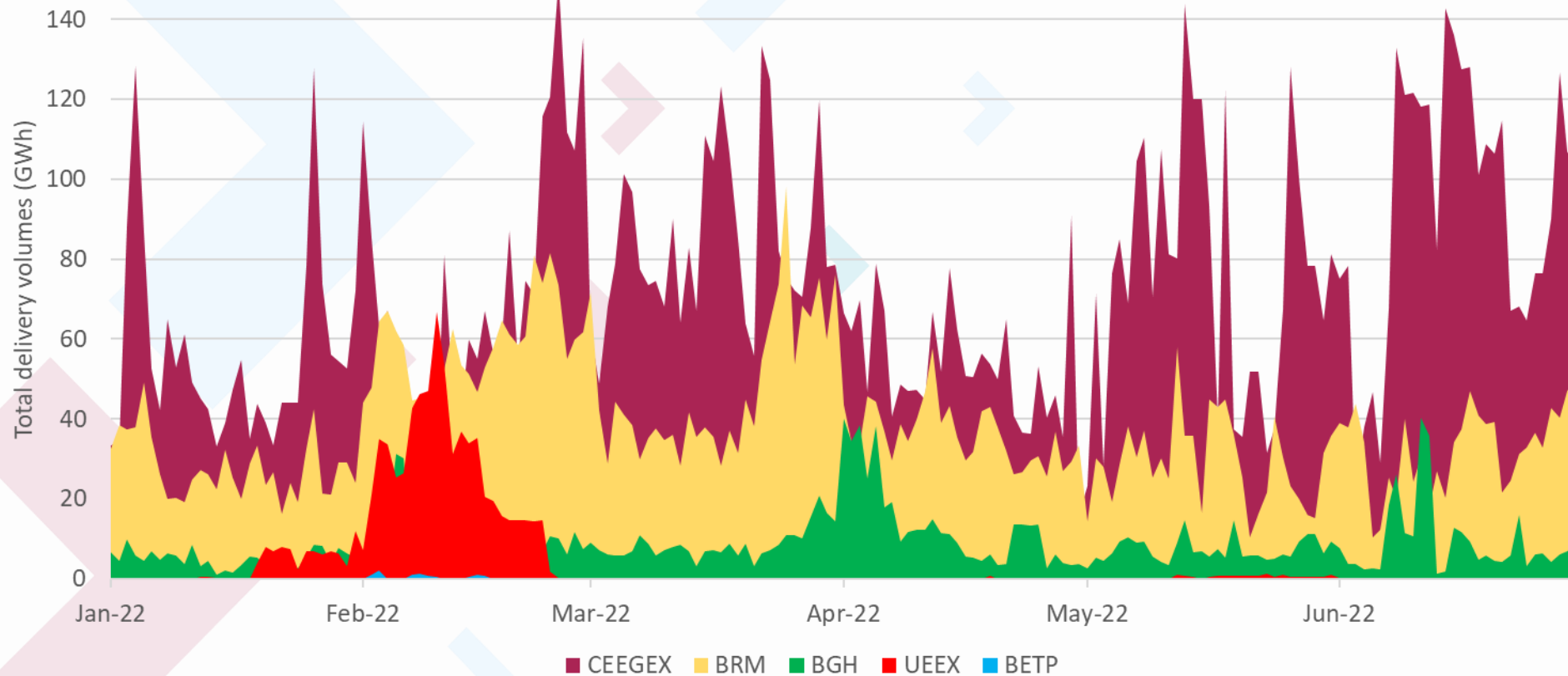
Source: CEEGEX, CEGH



EXPERT OPINION:

- In June volumes increased also on other regional markets.
- Most probably the intensive efforts to refill storages before the winter are motivating the boost on spot markets.
- Polish volumes halved in May after Russia halted gas supplies by the end of April. Before the cut off Polish storages were already at 80%.

Emerging gas hubs & CX spot volumes by delivery days

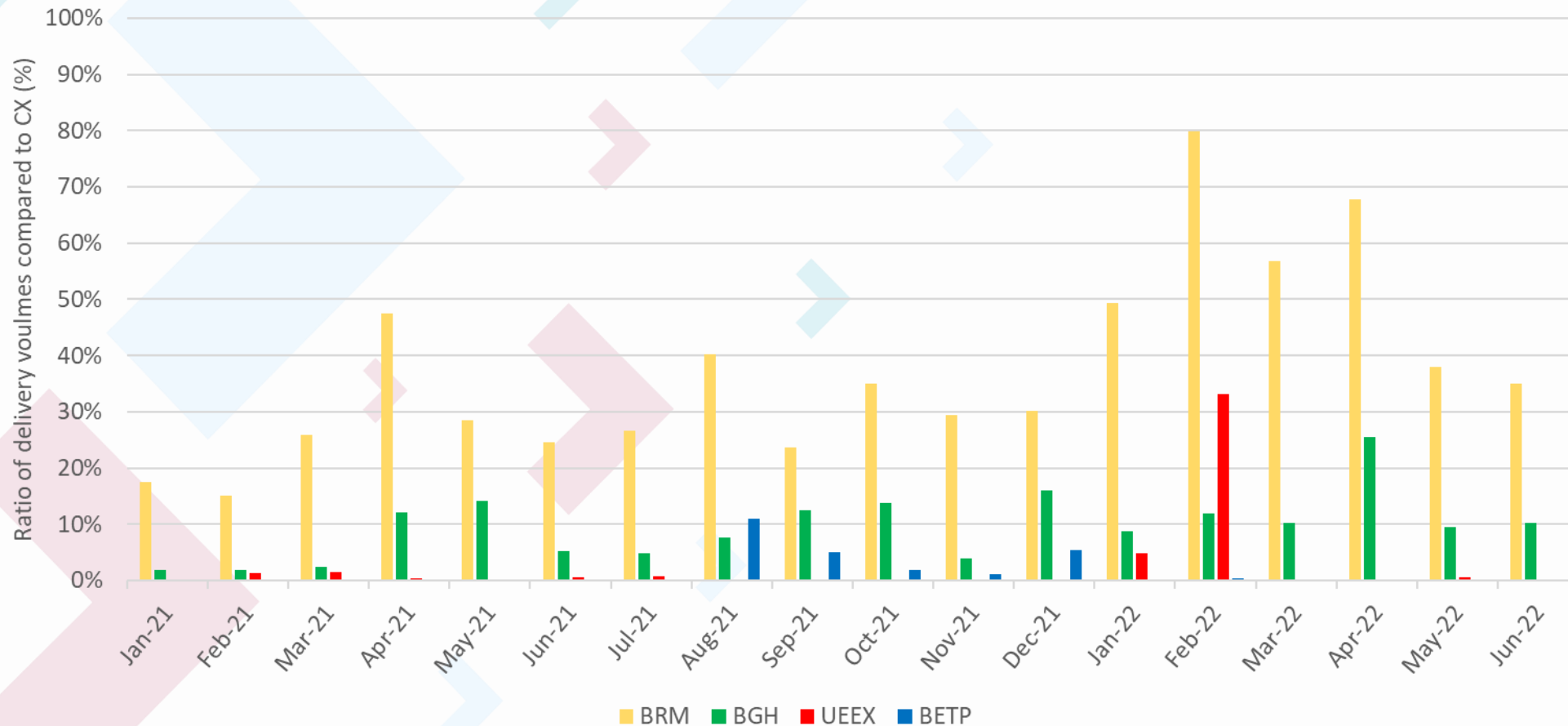


EXPERT OPINION:

- UEEX spot market delivery volumes increased rapidly in February reaching a record high **671 GWh**. Since the beginning of the war the total delivery volumes has only been **12 GWh**.
- One of the UEEX offices was hit by a missile, luckily nobody was injured, and the trading wasn't affected either.
- There has been no trading on the BETP spot market since February.

Market share of emerging gas hubs

Source: CEEGEX, BRM, BGH, UEEX, BETP

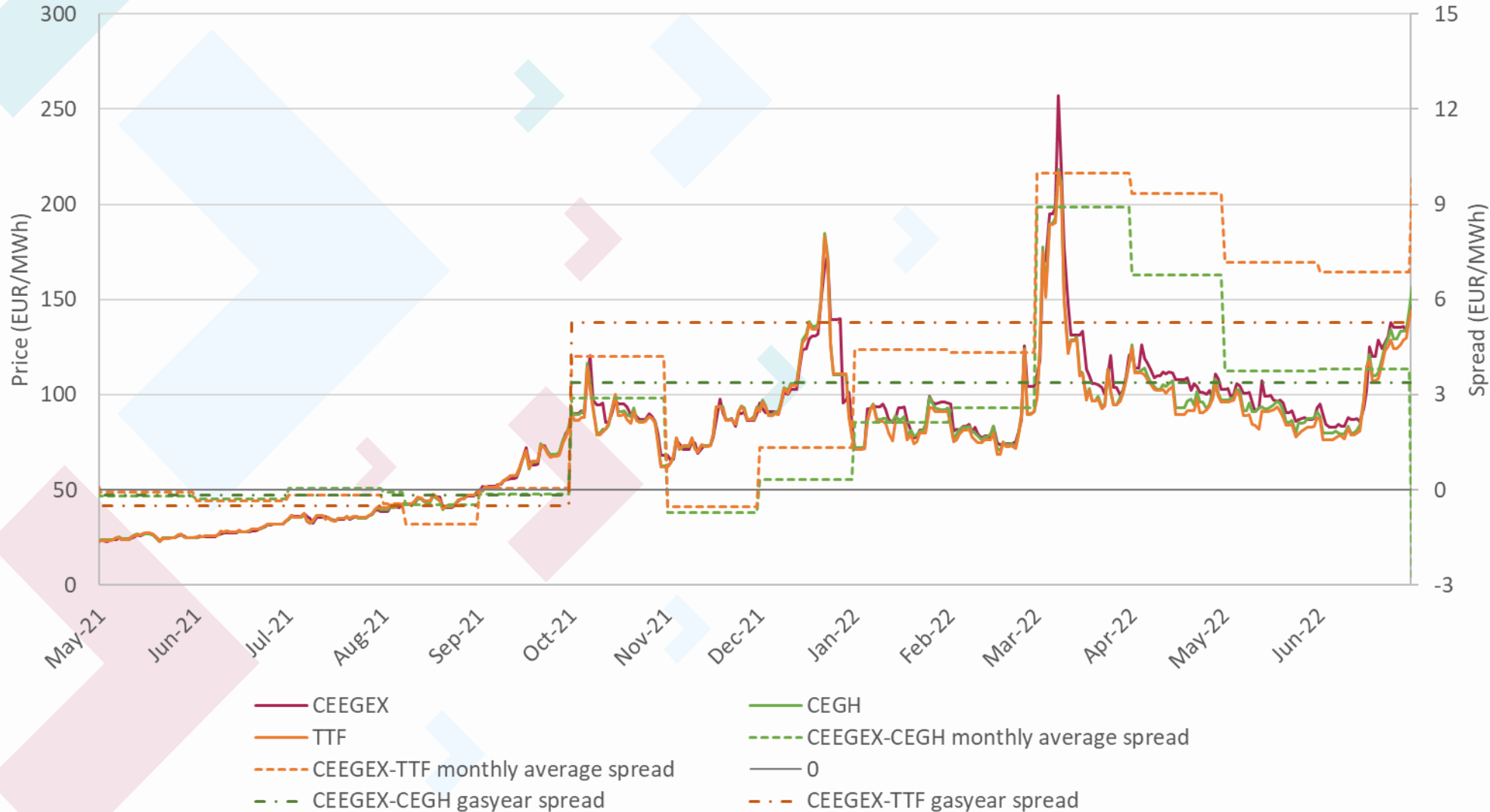


EXPERT OPINION:

- The delivery volumes of the BRM exchange came close to CEEGEX volumes at the first half of 2022. The reason for that is the target was not met on CEEGEX, while the BRM market more than doubled in size compared to last year.
- The delivery volumes have barely changed on BGH, their market share only increased when CEEGEX performed worse than expected.

Regional prices and spreads

Source: CEEGEX, EEX, IEA

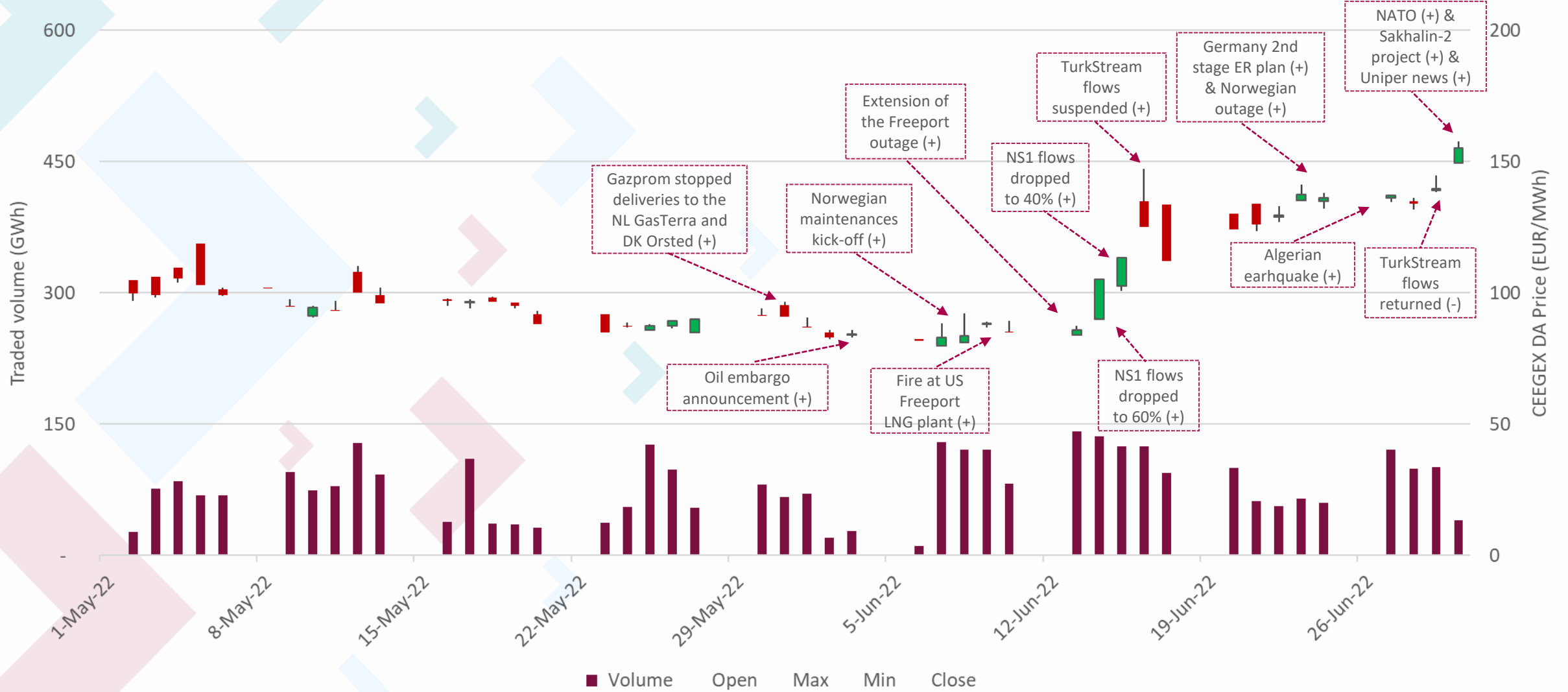


EXPERT OPINION:

- In June the spread further decreased, but it is still above the pre-war level.
- CEEGEX prices are still at a premium to regional benchmark exchanges.
- Most probably the main reason behind that is that CEE markets are more reliant on Russian pipeline gas supplies than NW European markets, where LNG cargoes arrive are at record high levels.
- In June for the first time, LNG overtook Russian piped gas supplies into Europe mostly due to suspensions on NS1 and TurkStream.

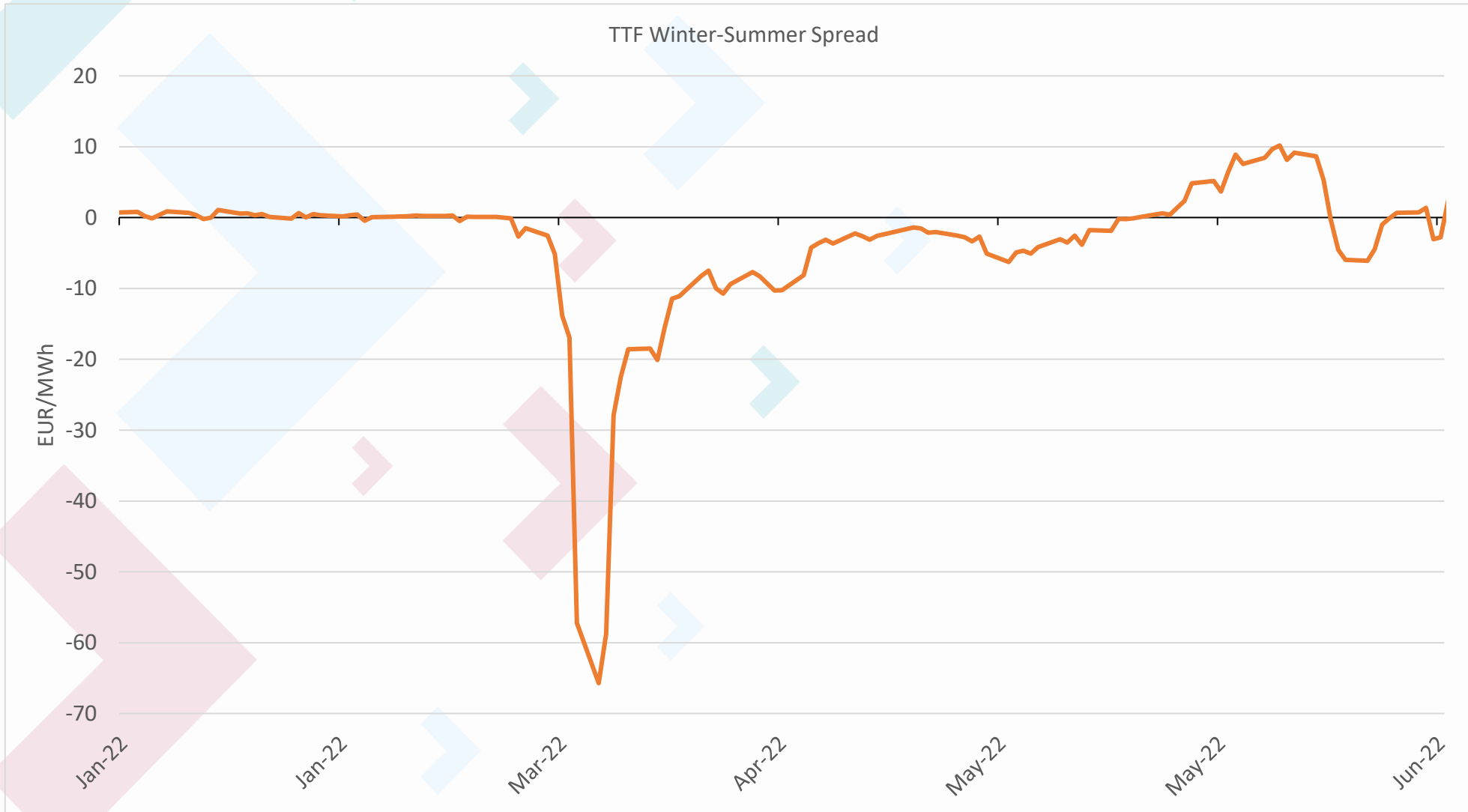
Japanese candles

Source: CEEGEX, ICIS



Negative winter-summer spread

Source: Refinitiv

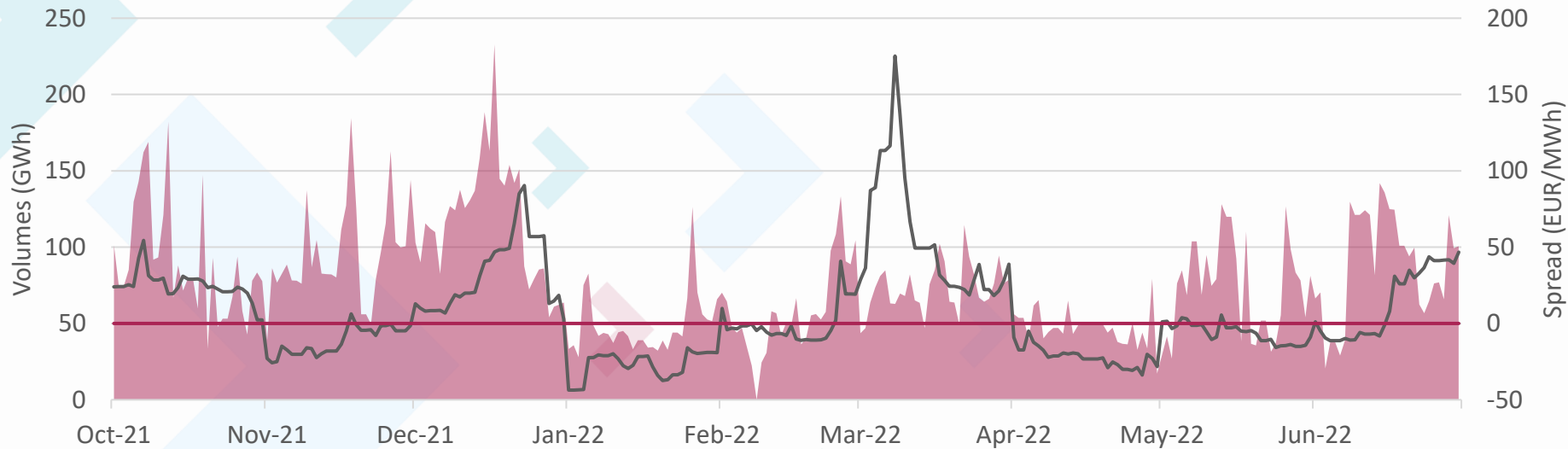


EXPERT OPINION:

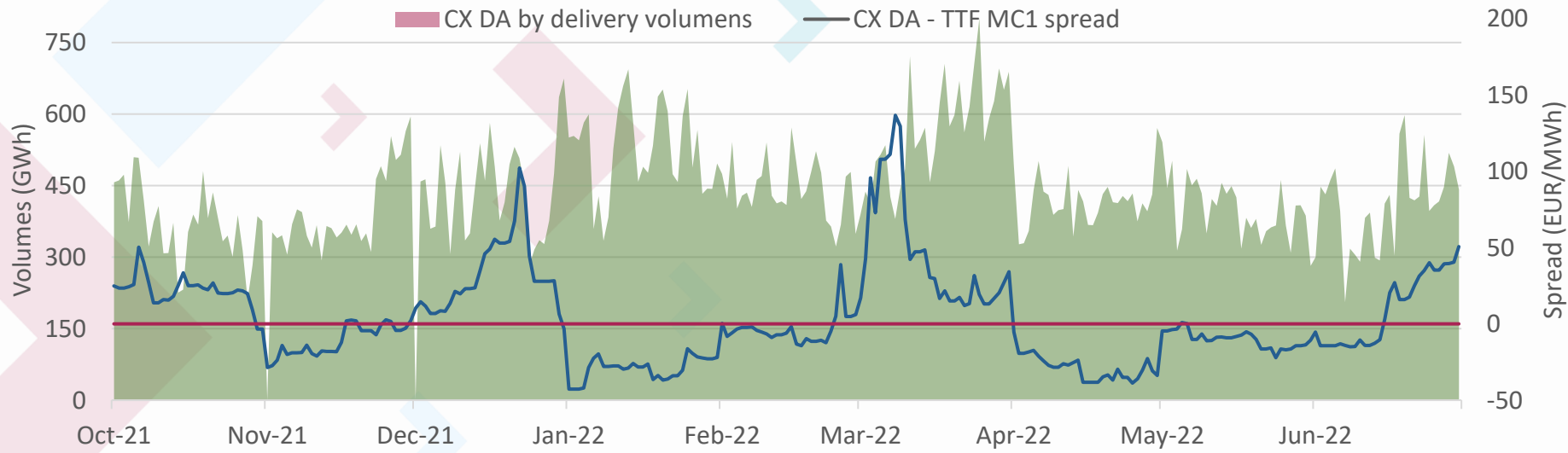
- The continuous bearish trend in May pushed the winter-summer spread back into positive range.
- However, the bullish mid-June prices pulled the spread back into negative.
- The larger swings are mainly due to uncertainties about the European gas supplies. According to the market expectations, these will be followed by a prolonged correction, which will remove the seasonality of the natural gas prices and maintains the negative spread.

TTF FM vs CX and CEGH spreads vs volumes by delivery

Source: CEEGEX, EEX



■ CX DA by delivery volumens — CX DA - TTF MC1 spread



■ CEGH DA by delivery volumens — CEGH DA - TTF MC1 spread

EXPERT OPINION:

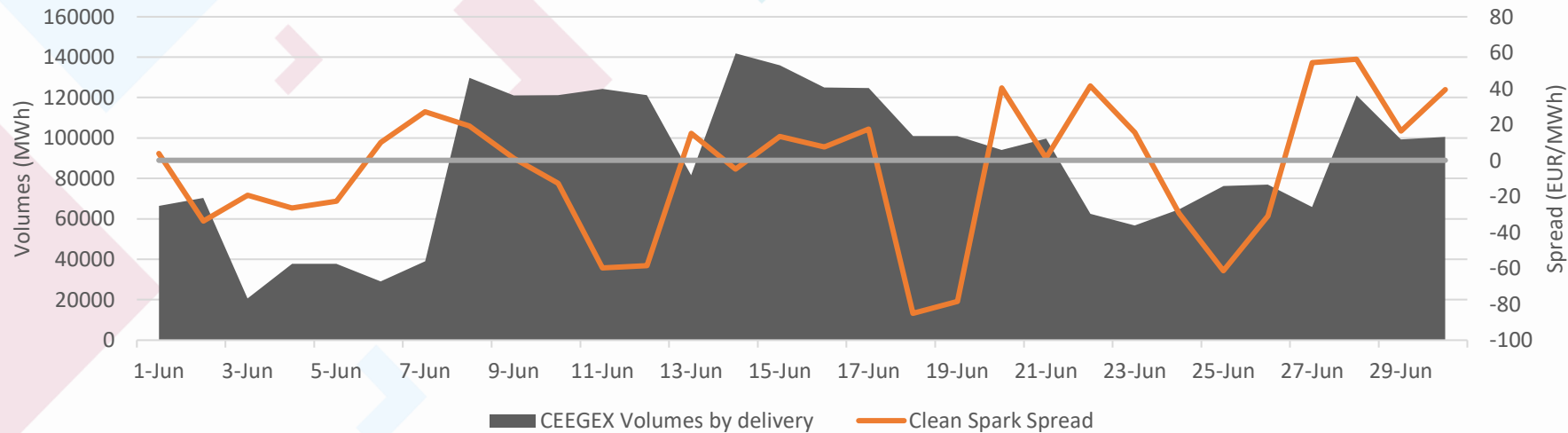
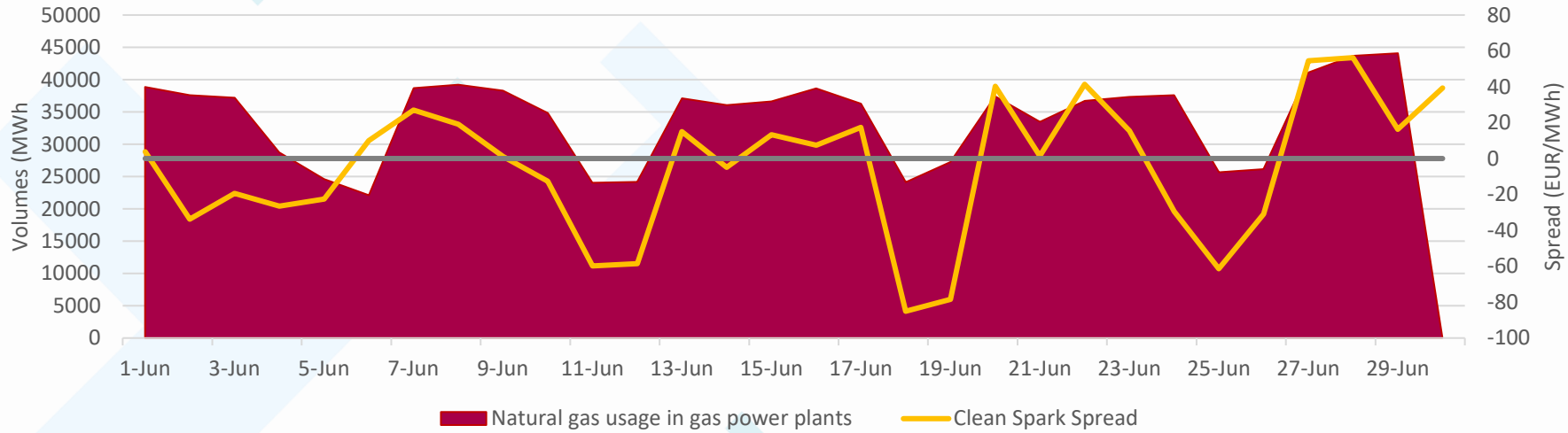
- Most of Gazprom's contracts with European countries are linked to the TTF FM index.
- Spot prices tended to remain below the TTF FM, thus European buyers had an incentive to buy gas on spot markets and to nominate lower volumes under their long-term contracts with Gazprom.
- In Jan, Feb or Apr spot prices below the TTF FM were not associated with higher traded volumes on CEEGEX. In case of CEGH a slight volume increase can be detected in Jan.

Spot Clean Spark Spread

Source: CEEGEX, HUPX , Reuters

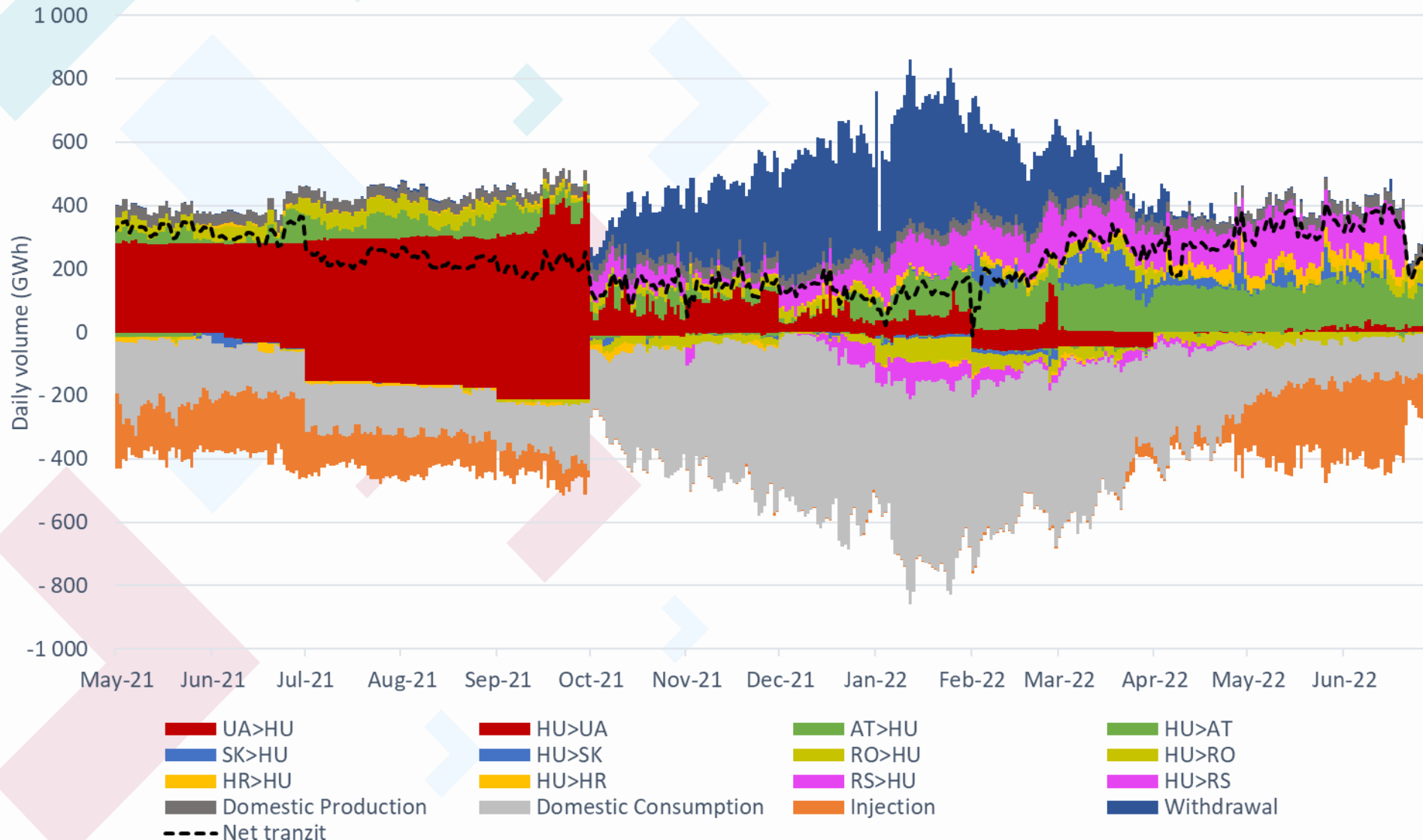
EXPERT OPINION:

- There is a correlation between the natural gas used in power plants and the clean spark spread.
- While we can see that, on days with positive CCS, the volumes increased on the CEEGEX spot market.
- The CCS was calculated with 49% electrical efficiency, while the gas emission intensity factor was 0,41 tCO₂/MWh.



Hungarian gas market balance

Source: AGSI, FGSZ

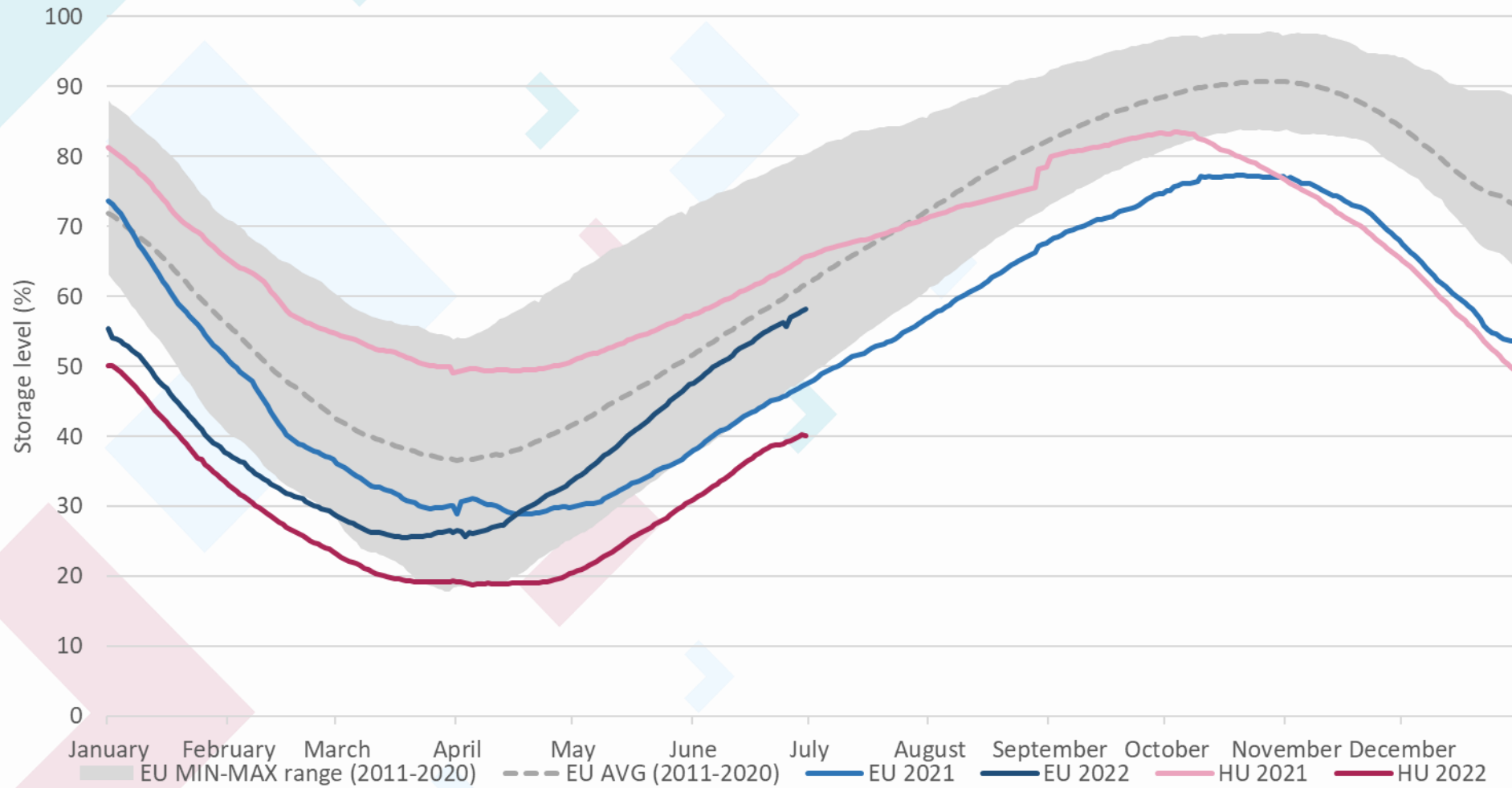


EXPERT OPINION:

- Imports remained on similar level to May, except for a drop during TS suspension (21-28 June), while exports fell to 5% of the imports.
- Flows from UA slightly increased at the start of the month, then dropped by mid June (NS1 drop), and rose again from 20 June. RO imports also strengthened. Flows from AT decreased and remained lower after the TS drop, HR volumes were also moderated, while RS imports grew directly before and after the TS stop. SK imports dropped to minimum since mid June.
- Domestic consumption remained similar to May.
- Injections continued at a high rate, except for TS suspension.

Gas storage level in EU and HU

Source: AGSI, ICIS



EXPERT OPINION:

- European aggregated storage levels (excluding Ukraine) returned to their historical min-max range between 2011-2020 and almost surpassed the 10-year average.
- The pace of injections remained stable in June despite lower Russian flows, Norwegian maintenances and rising global competition for LNG.

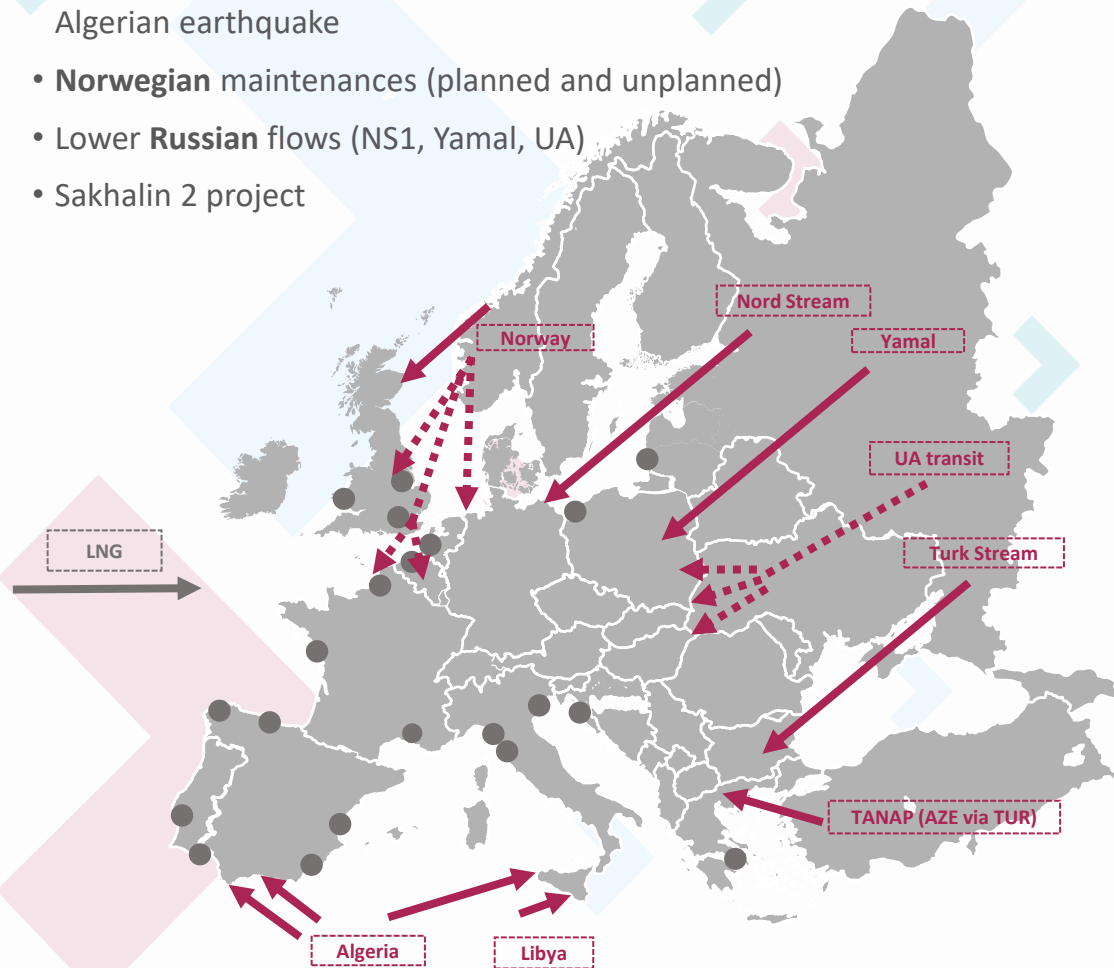
At the end of February Ukrainian storage operator temporarily halted withdrawals and suspended publishing storage data on its website in response to the emergency situation.

Drop in EU gas supply volumes in June

Source: Bruegel, EIA, ICIS, IEA, Montel, Platts, Reuters

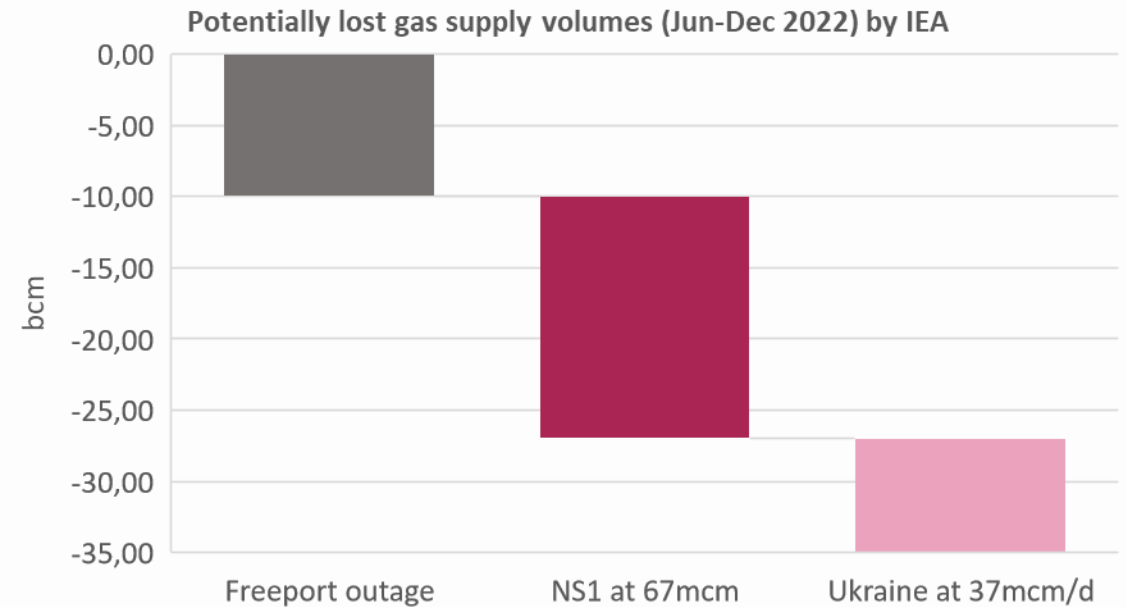
MAIN FUNDAMENTALS IN JUNE:

- Fire at **Freeport** LNG, French LNG terminal maintenances, strike at Prelude FLNG, Algerian earthquake
- **Norwegian** maintenances (planned and unplanned)
- Lower **Russian** flows (NS1, Yamal, UA)
- Sakhalin 2 project



CONSEQUENCES IN JUNE:

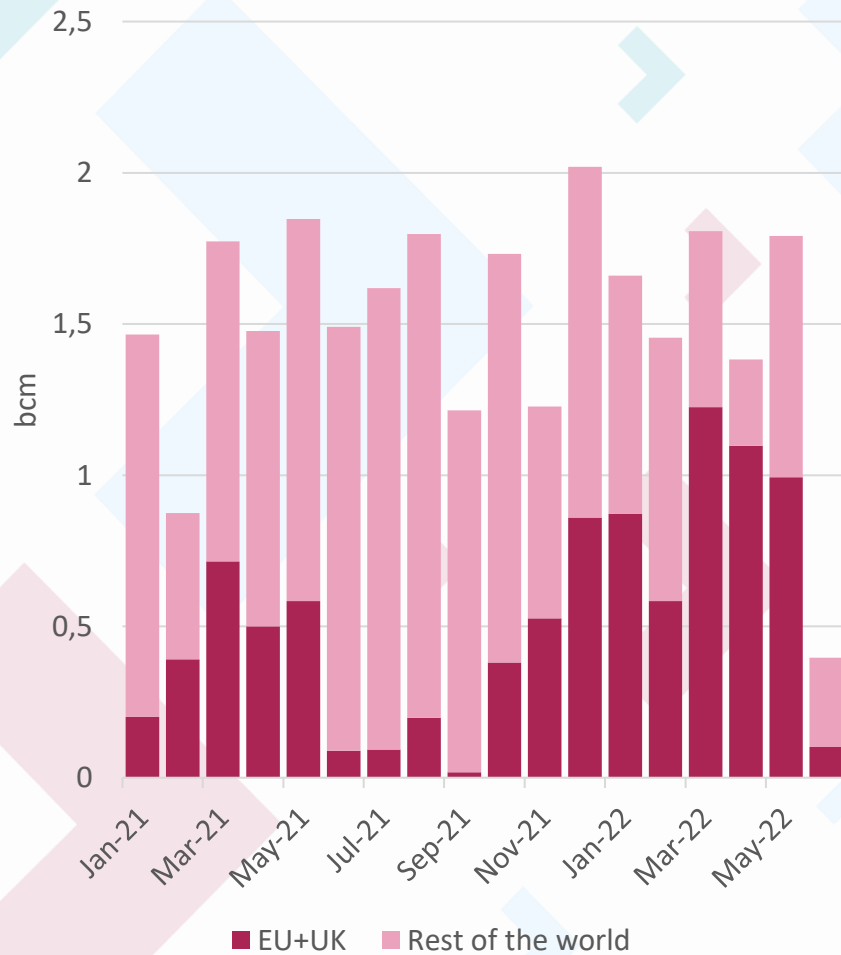
- Bullish prices and volatility
- European **storage targets at risk**
- Germany **second stage of the emergency gas plan**, Uniper bailout
- IEA warning - Recent disruptions to natural gas supplies are set to **remove around 35bcm of gas from the market this year** (worst case scenario for Freeport applied in calculations).



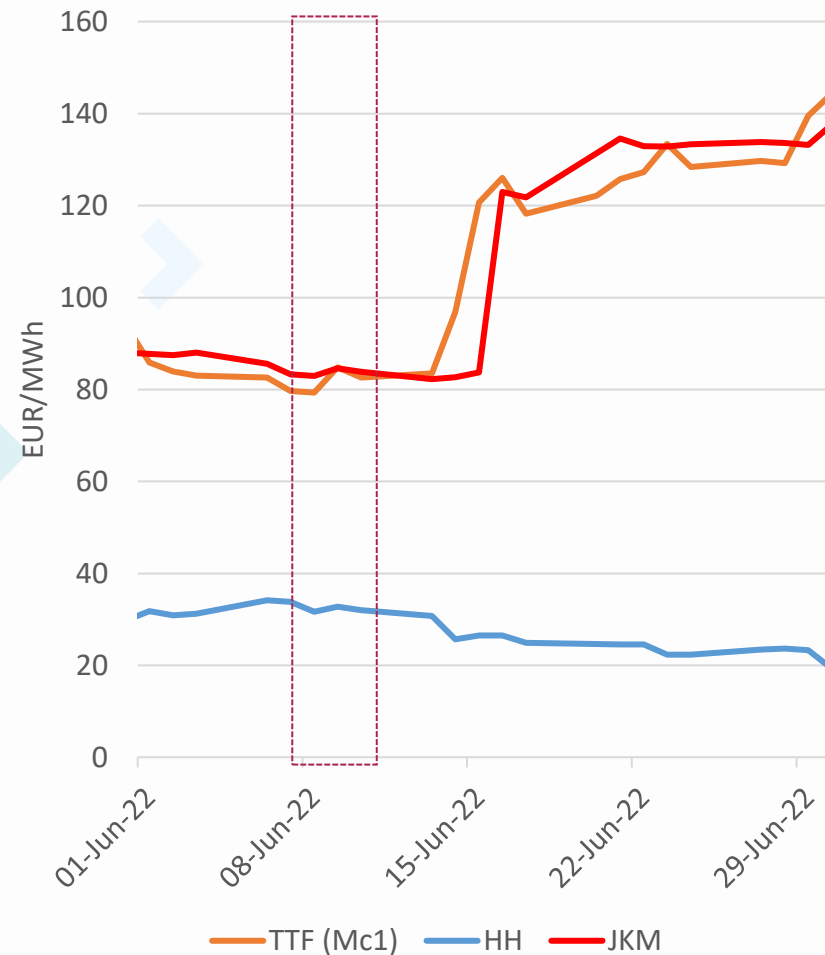
Freeport shutdown

Source: Refinitiv, IEA, Reuters

Freeport export by destination (bcm)



Global LNG prices



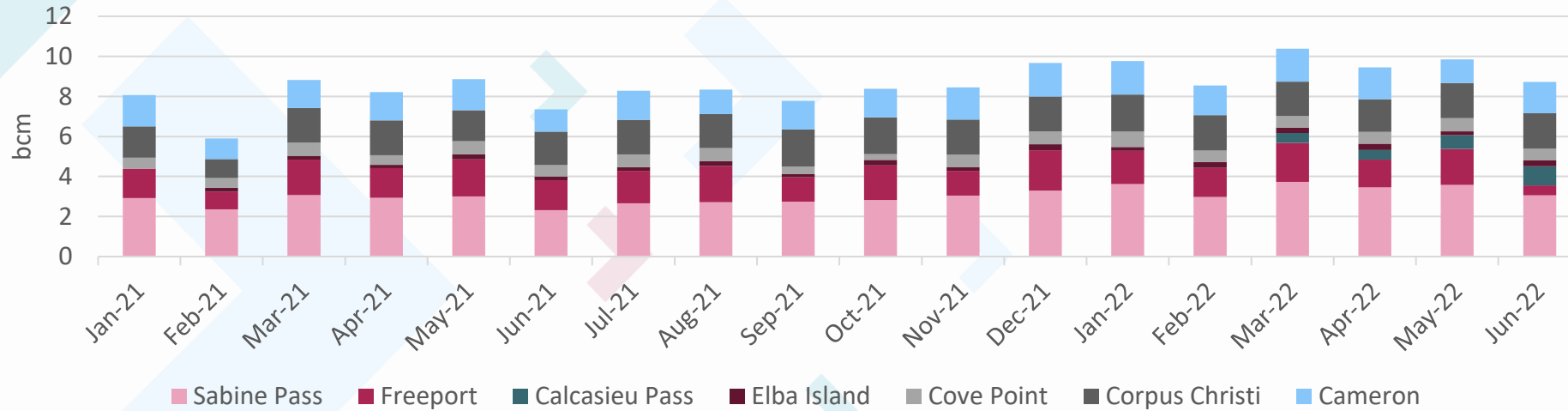
EXPERT OPINION:

- An explosion occurred at the Freeport LNG production plant in the United States on 8 June. The incident was followed by a complete shutdown. The investigation, repair and permitting required for a restart, takes months.
- However, it is planned to be partially operational by October, but full capacity is not expected until the end of the year.
- HH prices remained moderate in June due to the extended outage. However, it increased pressure on the European market, and the price of TTF's front month product raised by €5.5

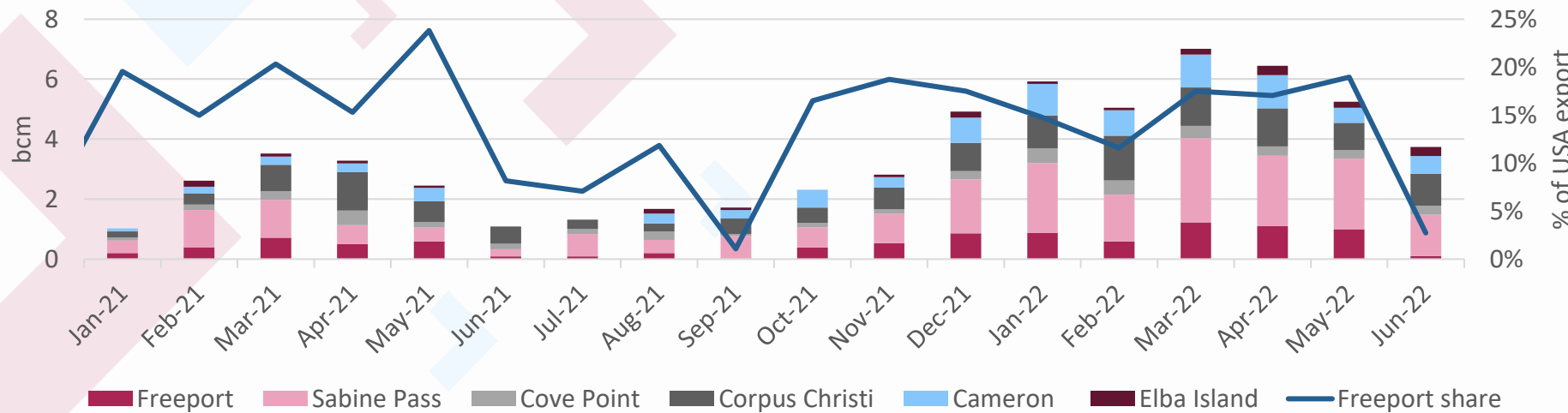
Freeport shutdown

Source: Refinitiv, ICIS

Export by terminal (bcm)



USA LNG export to EU+UK by terminal (bcm)



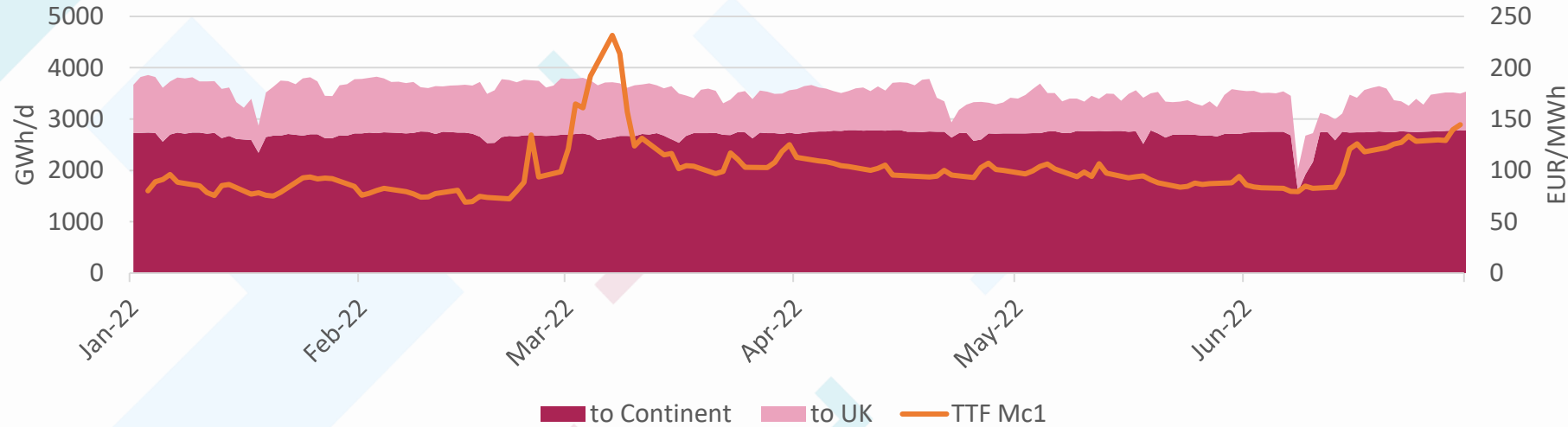
EXPERT OPINION:

- Freeport is the 3rd largest LNG export facility in the US based on the last 12 months' data.
- In the 3 months before the explosion, nearly 70% of the LNG produced here went to Europe.
- The Freeport terminal is responsible for nearly 20% of the US LNG exports to Europe.
- The shutdown of Freeport and the resulting decline in US LNG exports will further boost European prices

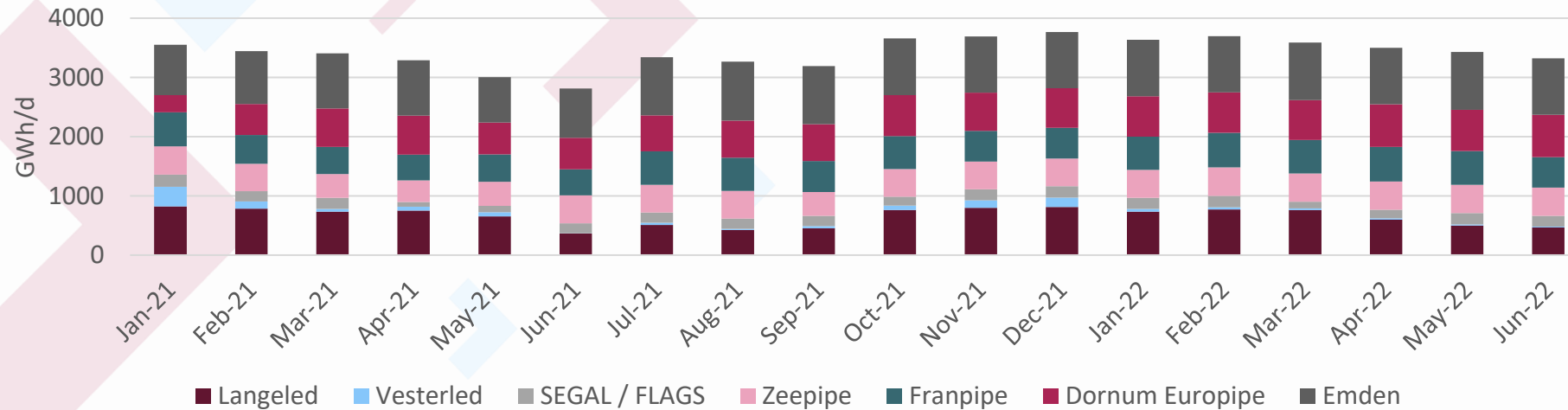
Norway maintenance

Source: Refinitiv, Bloomberg, ICIS

Daily export by destination



Monthly export by pipeline

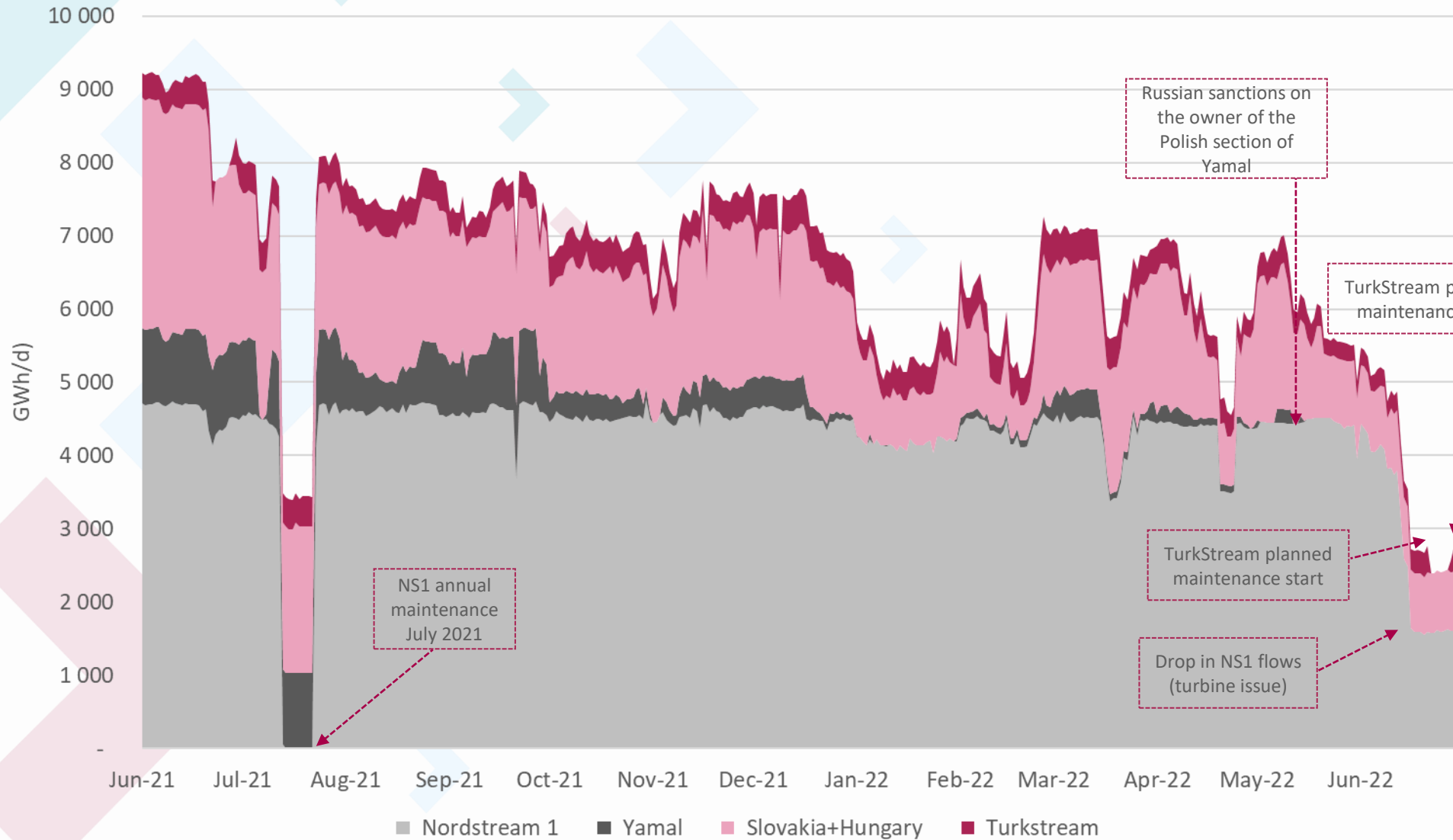


EXPERT OPINION:

- In June, there were several declines in Norwegian exports. Firstly, the Troll field was shut down between 9 and 15 June for planned maintenance, during which time exports to the UK were almost completely halted and exports to the continent also fell.
- The Troll field also needed maintenance later due to a compressor failure.
- At the end of June, the unplanned outage of the Ormen Lange field further strengthened the bullish trend of European prices, which by then were back above 120 due to the fall in NS1.

Lower gasflows from Russia in June

Source: ENTSOG, ICIS



EXPERT OPINION:

- On 14 June Russian flows decreased on the NS1 pipeline, a day later flows were further cut to 40% of capacity due to maintenance. (Planned annual maintenance will take place 11-21 July).
- Yamal flows via Belarus disappeared after Russian sanctions. (Planned annual maintenance will take place 5-8 July).
- Supplies via Slovakia started to decrease and remained low in June, while Ukrainian transit increased in June.
- Deliveries via TurkStream dropped between 21-28 June, but apart from that remained on similar level to previous months.

Emergency gas plan in Germany

Source: DW, EC, Euractiv, ICIS, Platts, Prognos, Reuters

1. EARLY WARNING

- Berlin implemented the first phase on **March 30**
- „there are concrete, serious and reliable indications that **an event may occur which is likely to lead to a significant deterioration of the gas supply situation** and probably to the alarm or emergency level,,
- this level allows suppliers in theory to **pass on higher costs to consumers** to limit gas demand

2. ALARM

- The second alert level was activated on **23 June**
- „there is a disruption in the gas supply or an exceptionally high demand for gas which leads to a **significant deterioration of the gas supply situation, but the market is still able to cope with this disruption or demand** without the need to take non-market based measures,,
- this level aims to improve security of gas supply by curbing gas consumption to favour injections (auction model to **incentivise industrial consumers to save gas** over the summer and loans backed by German state-owned bank KfW available to THE for the procurement of gas to fill storage sites)

3. EMERGENCY

- The third, final state of emergency is declared when:
- „there is an exceptionally high demand for gas, a **significant disruption in gas supplies or another significant supply situation and all relevant market-based measures have been implemented, but gas supply is insufficient** to meet the remaining gas demand so that additional **non-market based measures need to be taken**, in particular to ensure the supply of gas to protected customers.”

EXPERT OPINION:

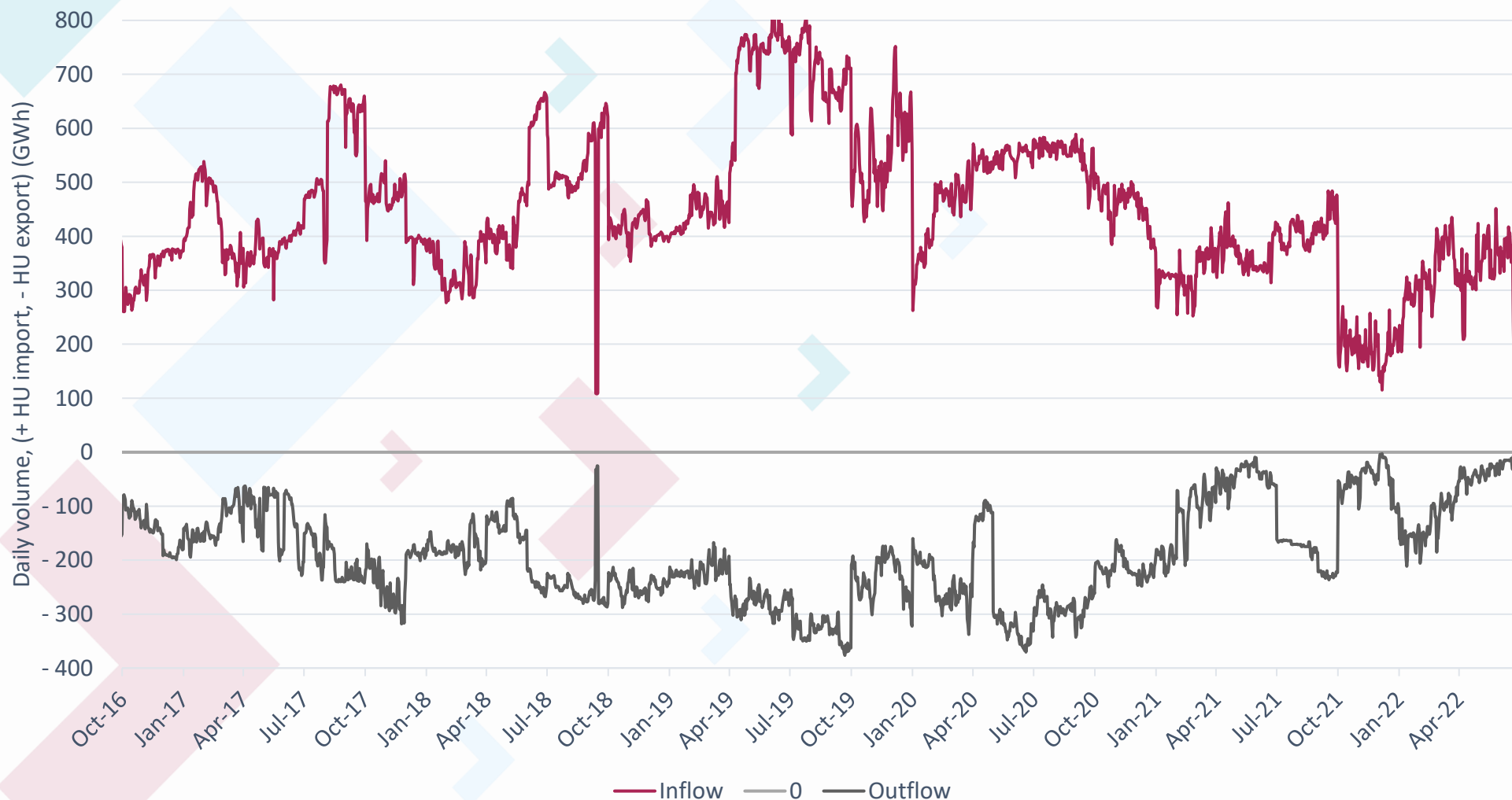
- Germany is the biggest importer of Russian pipeline gas in Europe, its storages were 50% full on 23 June.
- Prognos found that after 4 weeks, there would no longer be enough gas for everyone.
- By law private households, social services, and district heating suppliers would continue to be supplied, the stop would affect the industry.
- Sectors such as steel, crude iron, chemicals, and glass would be particularly hard hit, with production expected to fall by around 50%. Germany's economic output could drop ~13% by the end of the year.



EU solidarity principle (2017): EU's security of supply regulation stipulates that gas solidarity between countries must be underpinned by **solidarity agreements governing coordination between national authorities**. “EU countries are required to put in place the necessary technical, legal and financial arrangements to make the provision of solidarity gas possible in practice.”

Hungarian net transit (allocations)

Source: AGSI, FGSZ

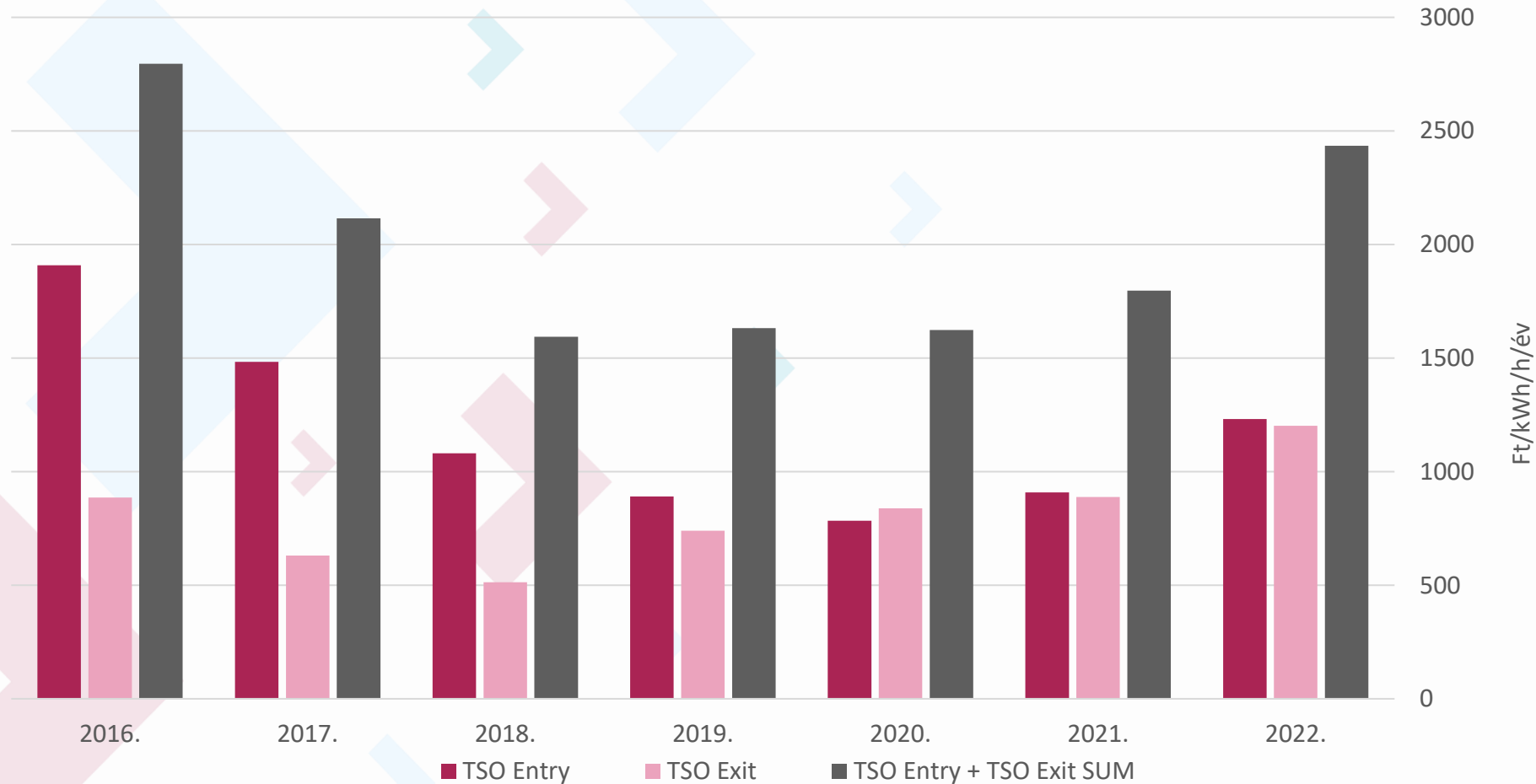


EXPERT OPINION:

- Total Hungarian gas transit decreased since last October
- The Ukrainian transit volumes disappeared
- This resulted in lower volumes on the Hungarian transmission system, which in turn means lower income from tariffs.

TSO Capacity tariff price evolution

Source: FGSZ



EXPERT OPINION:

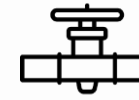
- Because of decreasing volumes MEKH increased capacity tariffs to compensate the income
- **From Oct 2022:**
 - TSO Entry fee change: +36% (YoY)
 - TSO Exit fee change: +35% (YoY)
 - TSO volumetric fee change: more than 300% (YoY)*

*not presented on the chart

Iberian price cap

Source: ICIS, EUROPEX, S&PGlobal

- Cap on the price of **gas and coal for power generation** since June 14 in Spanish and Portuguese markets
- The measure was **approved by the European Commission (EC)** to run until May 31, 2023
- Direct grant to **electricity producers to finance part** of their fuel costs
- Gas price cap set at an **average of 48.80EUR/MWh** during the duration of the measure
- First six months of the application the actual **price cap** will be set at **40EUR/MWh**
- As of the seventh month the **cap increase by 5 EUR per month** resulting the cap of **70EUR/MWh in the 12th month**
- Spanish power grid operator as result of **cross-border electricity trade** between **France and Spain** and a charge imposed by **Spain and Portugal** on buyers benefitting
- The measure allowed Spain and Portugal **to lower electricity prices**
- The estimated impact is **8.4billion Euros** (Spain 6.3billion, Portugal 2.1billion)



EXPERT OPINION:

- Price caps would be introduced by the EU only in case of an **emergency situation**.
- Caps could have a **market distorting effect**.
- An EU wide gas price cap could **incentivize higher gas consumption** as it would not sufficiently encourage energy savings & lead to an increase of power production from natural gas. It would **hamper the orderly price formation in the energy wholesale market** and prevent a continued accurate reflection of the current and expected future status of the energy system.

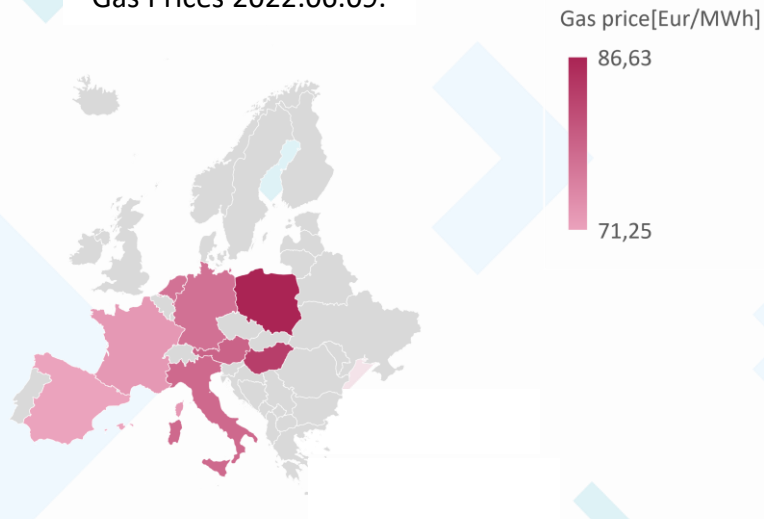
In Spain, both gas and electricity market prices remained lower after the implementation of the Iberian price cap (see next slide).

However, in France, Germany and Italy market prices (gas and electricity) grew higher than before the measure.

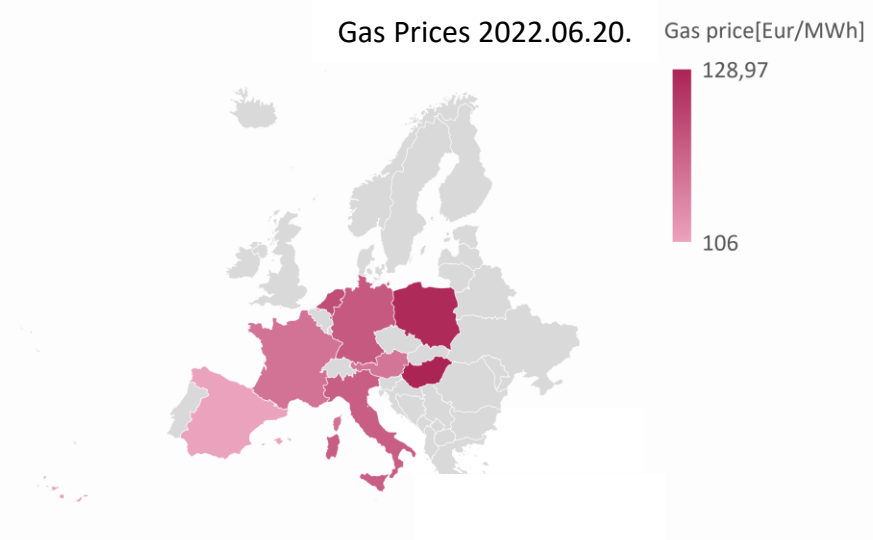
The Iberian price cap effects on EU markets

Source: Argus, ICIS, Refinitiv, TGE

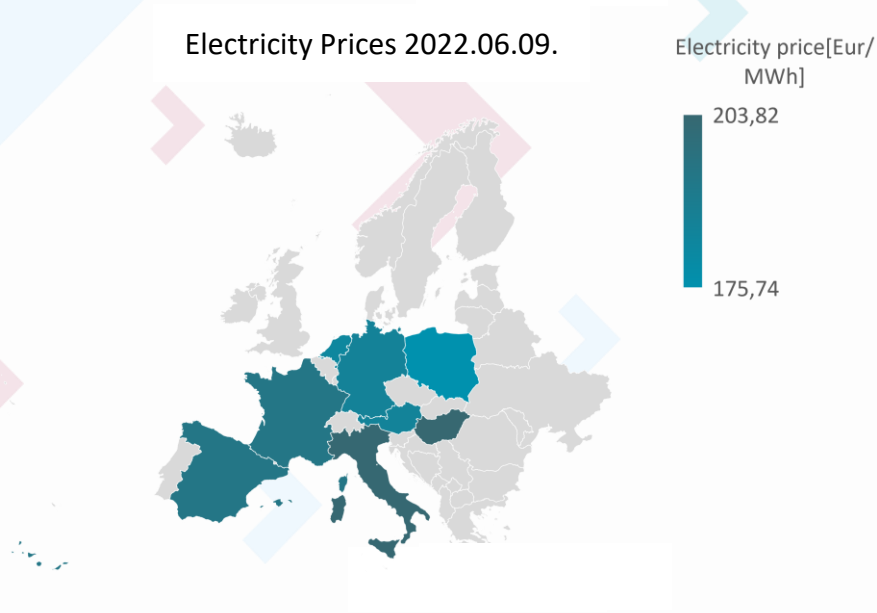
Gas Prices 2022.06.09.



Gas Prices 2022.06.20.



Electricity Prices 2022.06.09.



Electricity Prices 2022.06.20.

