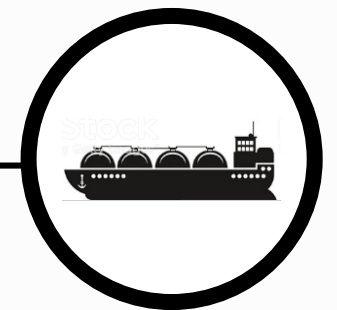


# Global & Regional Market Analysis

Natural Gas

November 2021

06/12/2021



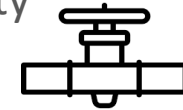


# Stories of the recent weeks

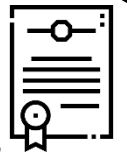
An outage at the Balkan Stream affected flows from Serbia, later Norwegian maintenances limited supply to NW Europe. European storages closed the month at 68% as winter withdrawals kicked off, but a new Covid-19 variant mitigated slightly demand concerns.



Gazprom started injections to EU storages on 8 November. However, results of capacity auctions suggest the continuation of low Russian exports to Europe via Ukraine. Belarus threatened to block gas transit to Europe due to EU refugee spat.



Nord Stream 2 certification was suspended by the German regulator, some analysts expect supplies on the pipeline to start only in Q3 2022. Serbia negotiated a six-month new gas deal with Russia and plans to build new UGS.



Hungary introduced a cap on petrol prices and reduced energy prices for small enterprises. Main Romanian gas producer defaulted, several energy suppliers decided to suspend their activity on the Romanian gas market.

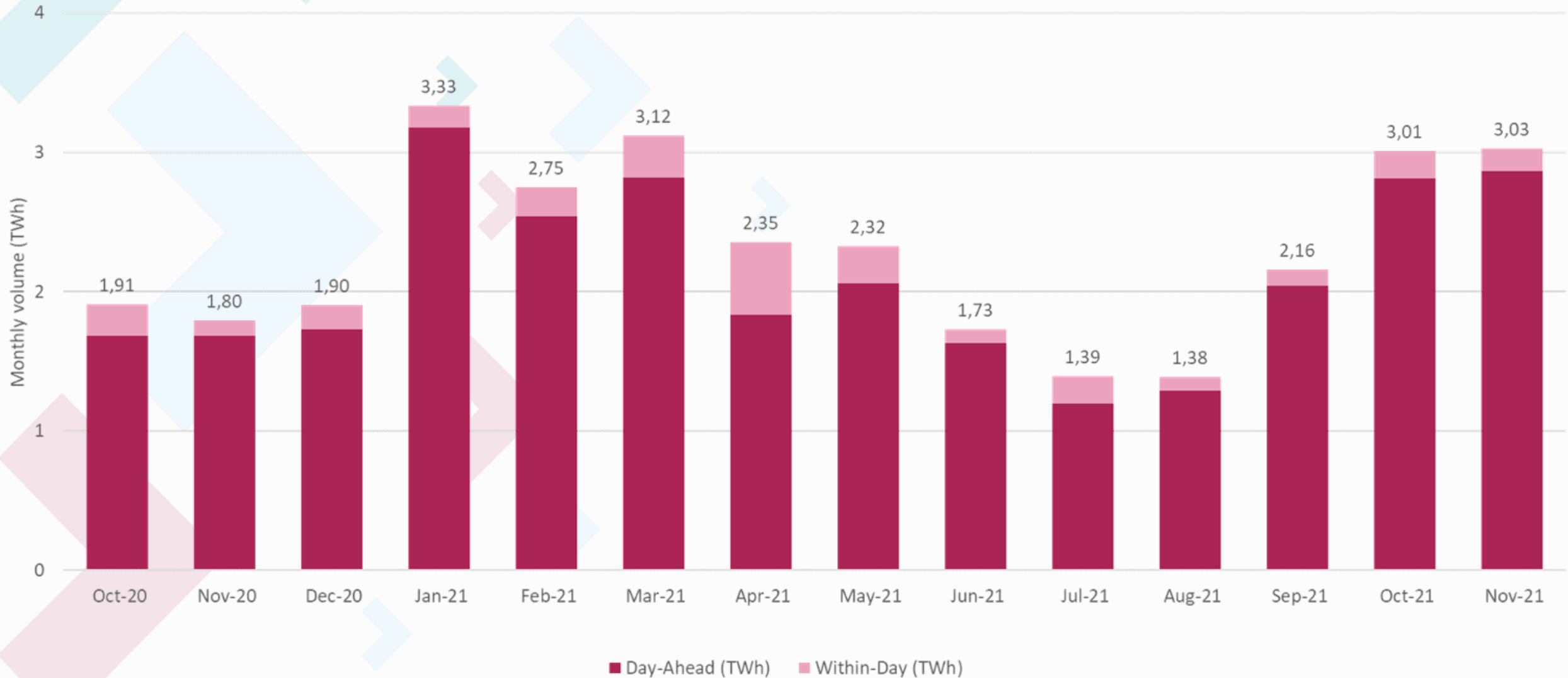


COP26 did not exploit its potential and missed 1.5 degree target, while ACER investigation found no obvious manipulation behind high energy prices. Carbon hit new price records on proposals by Germany's incoming coalition government.



# CEEGEX monthly traded volumes

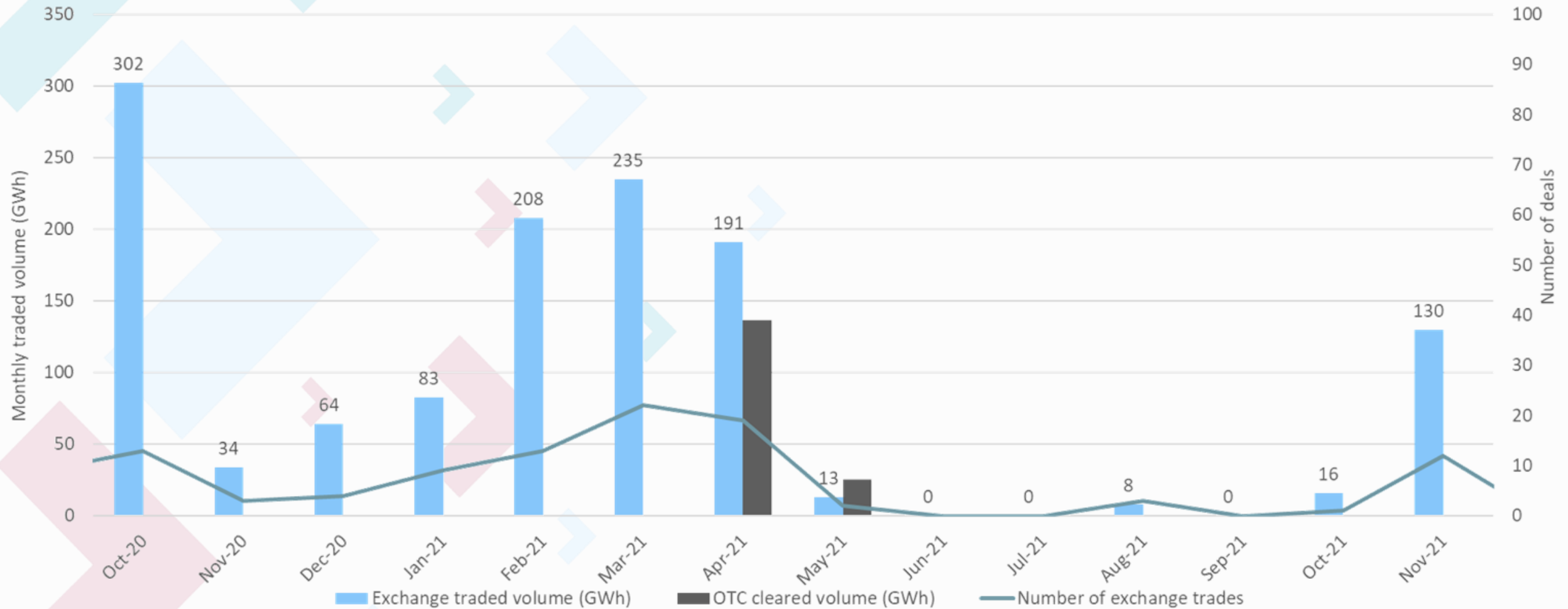
Source: CEEGEX



Disclaimer: This document contains analyst opinions, which don't necessarily represent the official views of HUPX Group or any of its subsidiaries.

# HUDEX Natural Gas Segment

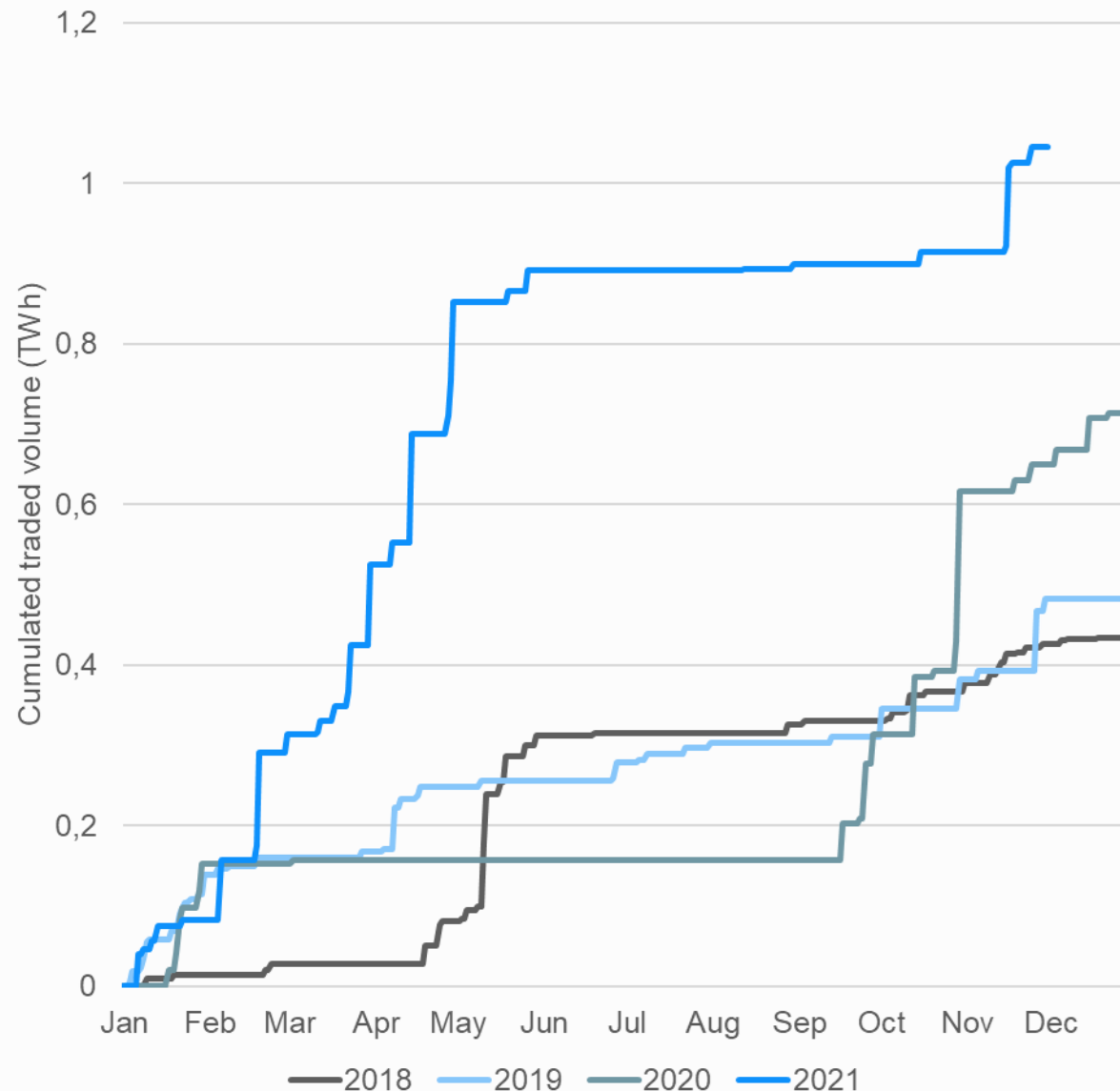
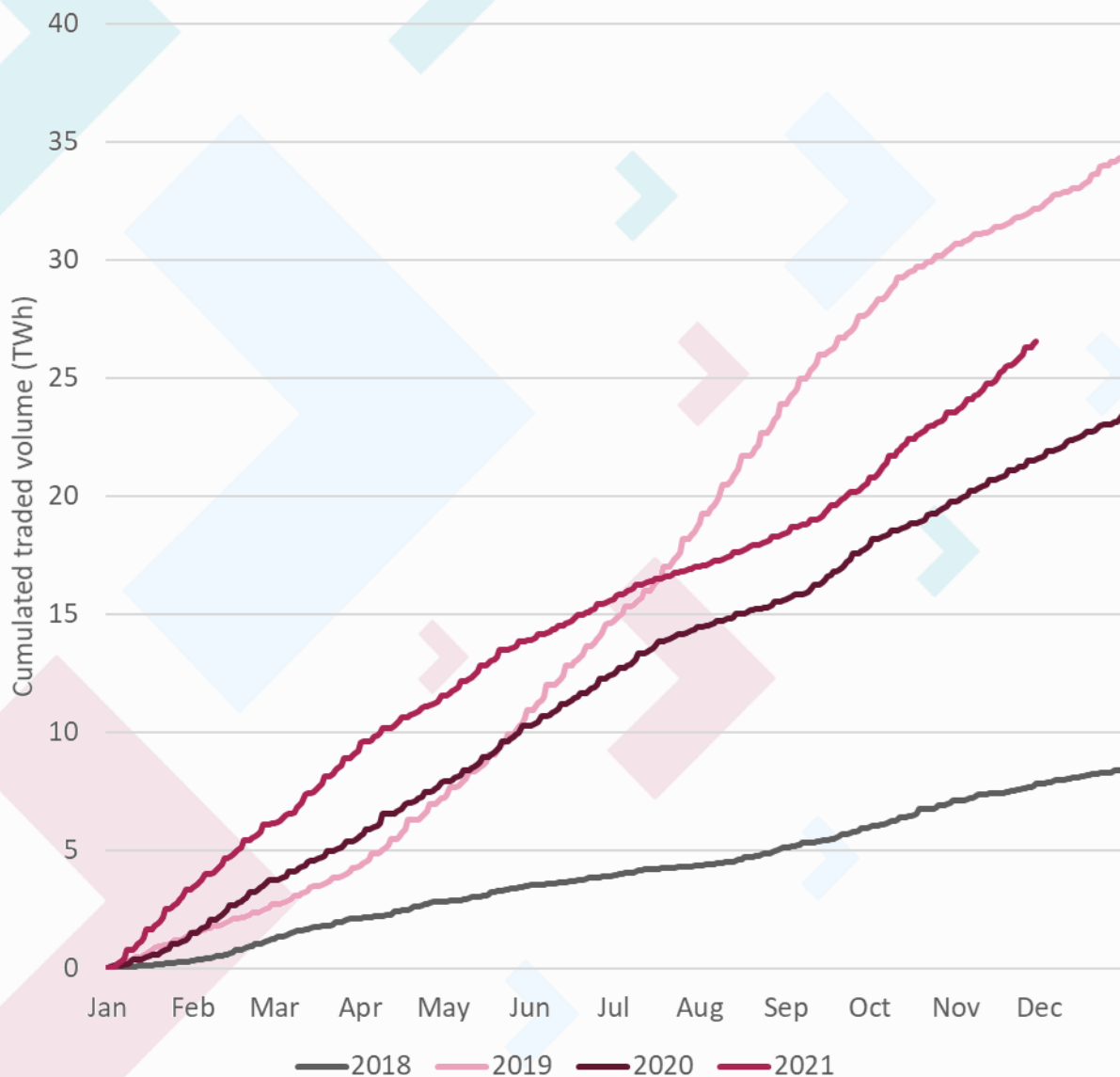
Source: HUDEX



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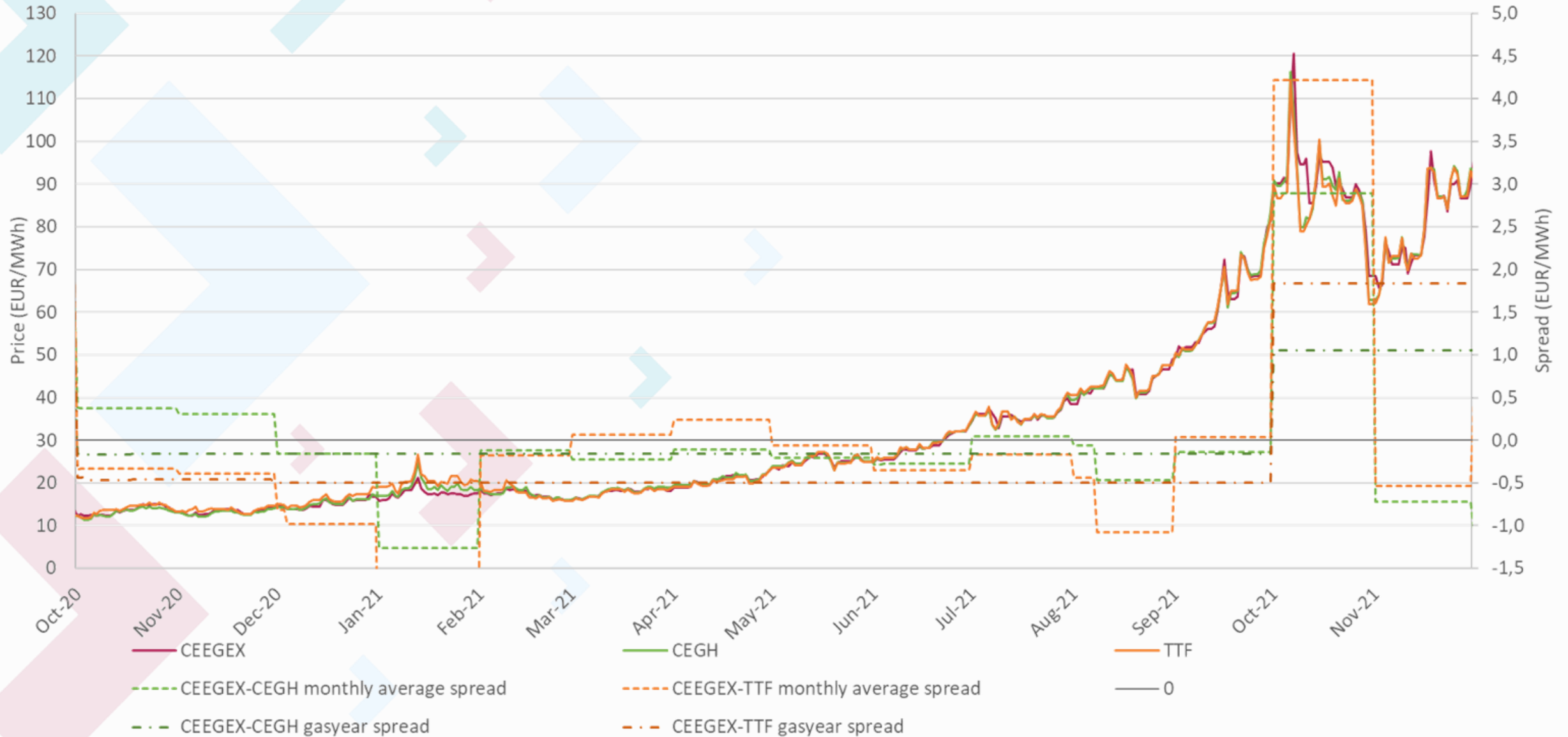
# CEEGEX and HUDEX Natural Gas cumulative annual volumes

Sources: CEEGEX, HUDEX



# Spot prices and spreads

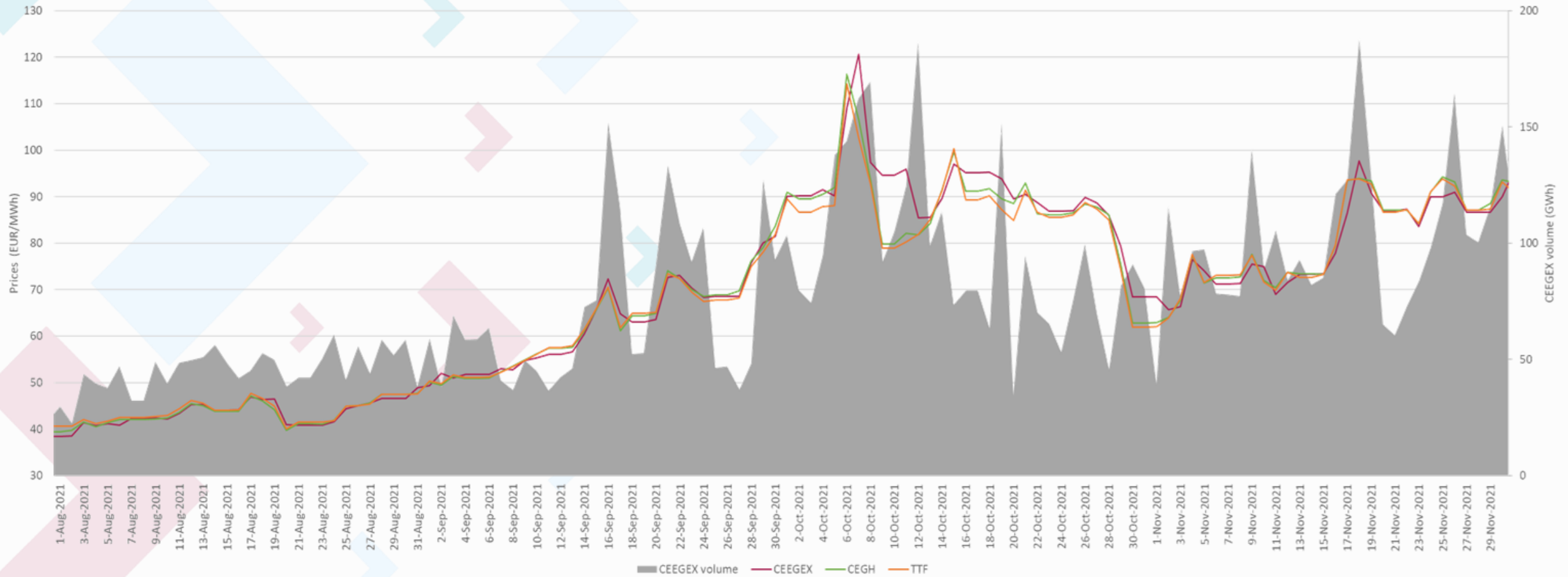
Source: EEX, CEEGEX



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# Spot prices and CEEGEX volume

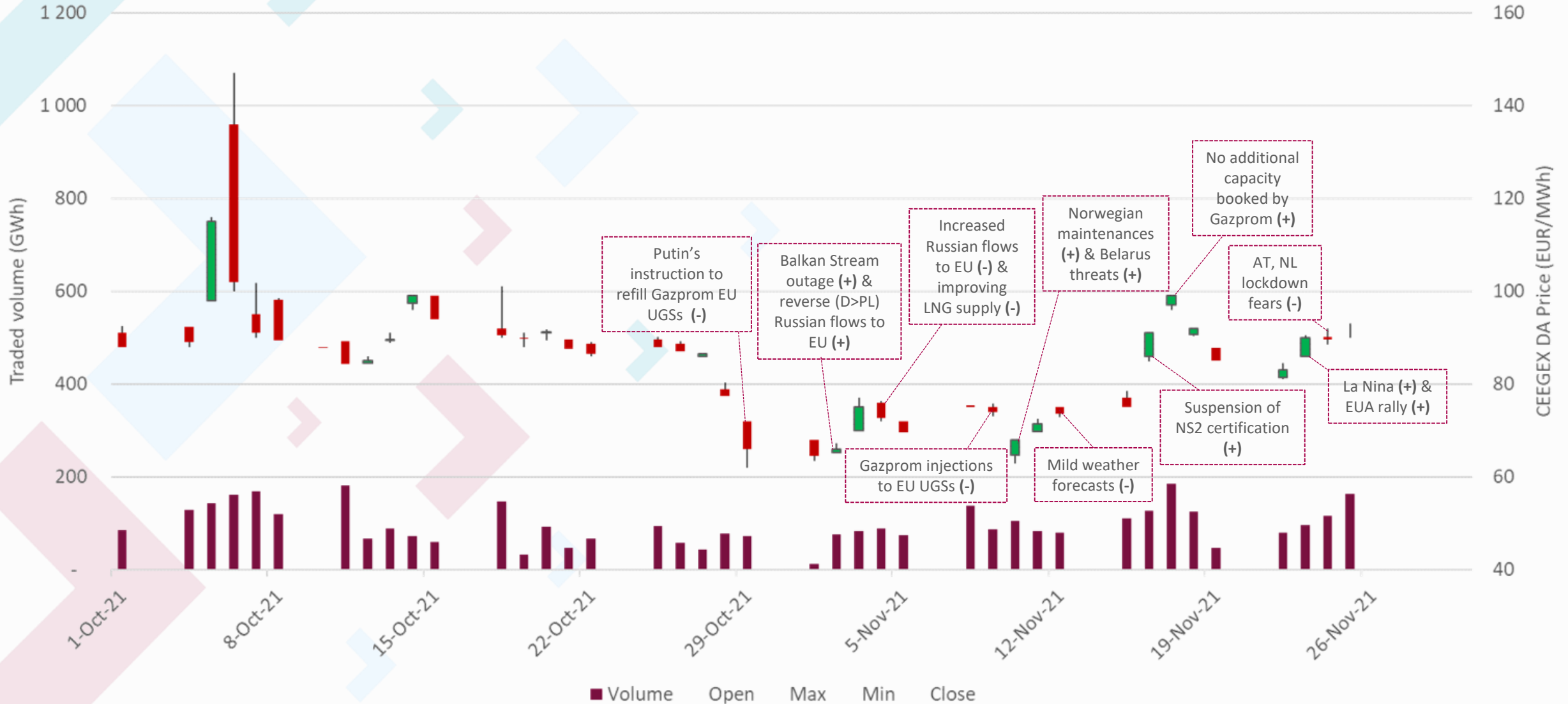
Source: EEX, CEEGEX



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# Japanese candles

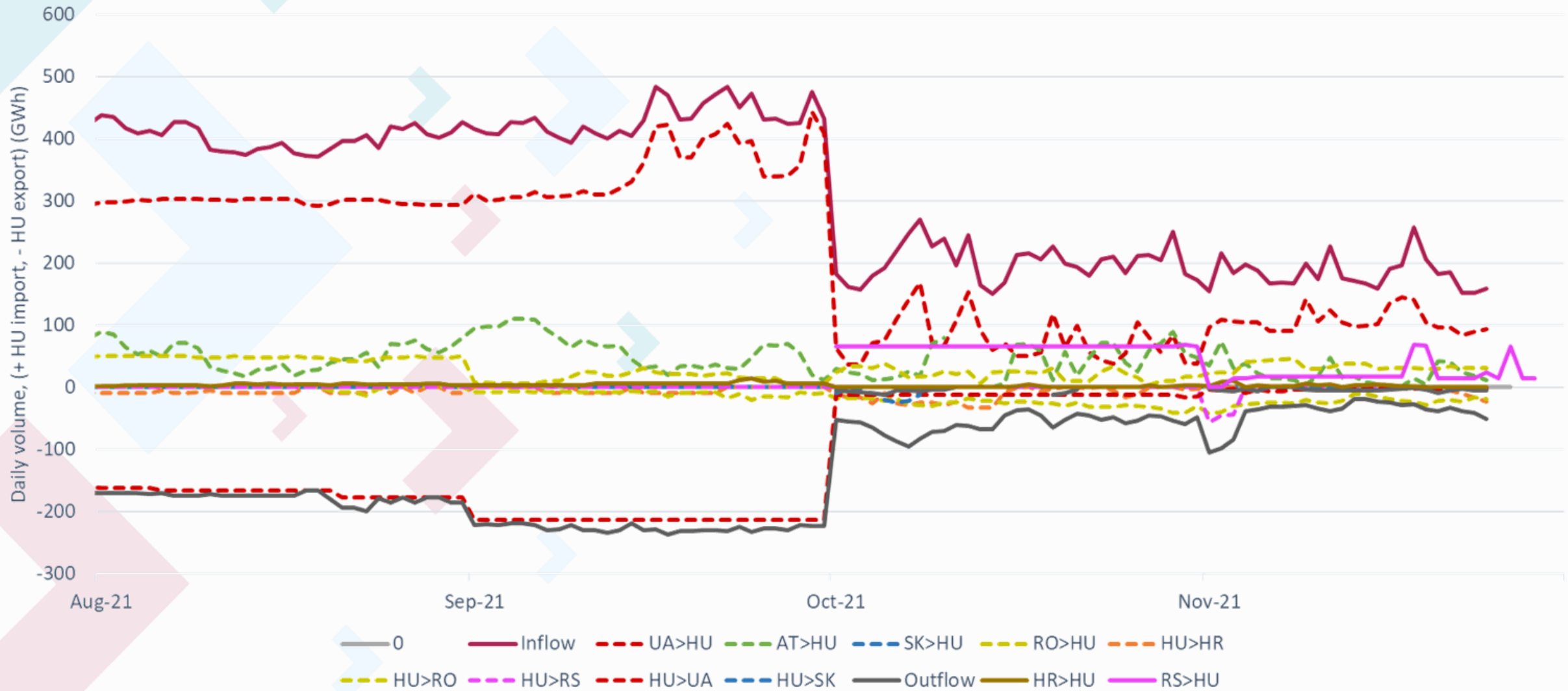
Source: CEEGEX, Argus, Euractiv, ICIS, Montel, Platts, Portfolio, Reuters





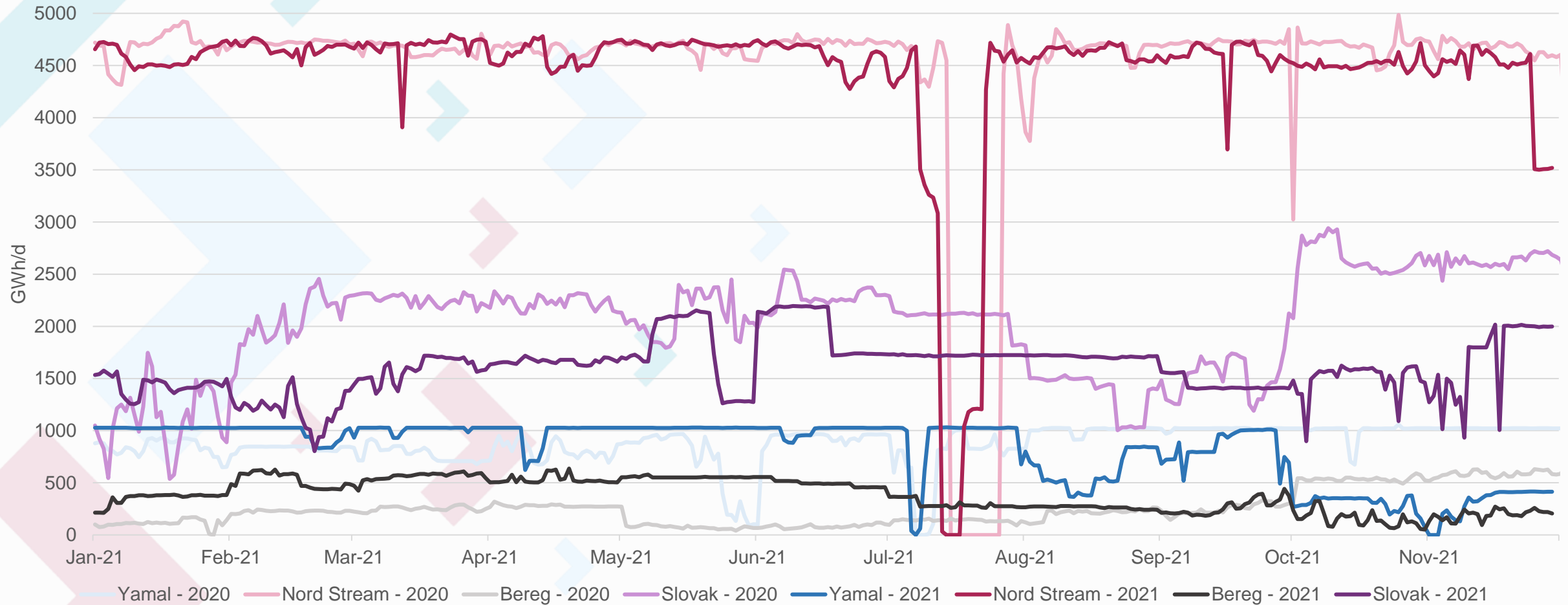
# Cross border point allocations

Source: RBP



# Gazprom pipeline allocations

Source: Entso-g



**The Gazproms export significantly decreased** in case of three of the most important European pipeline in the second half of 2021 in contrast of 2020 – Yamal, Bereg and Slovak.

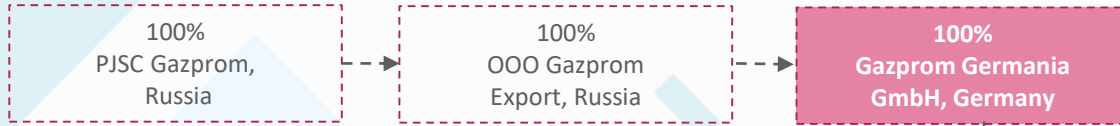
# Gazprom EU storages

Source: Gazprom

\*December 2020 data

\*\*including short-term storage contracts

Gazprom has strengthened its position in Europe via **Gazprom Germania**.



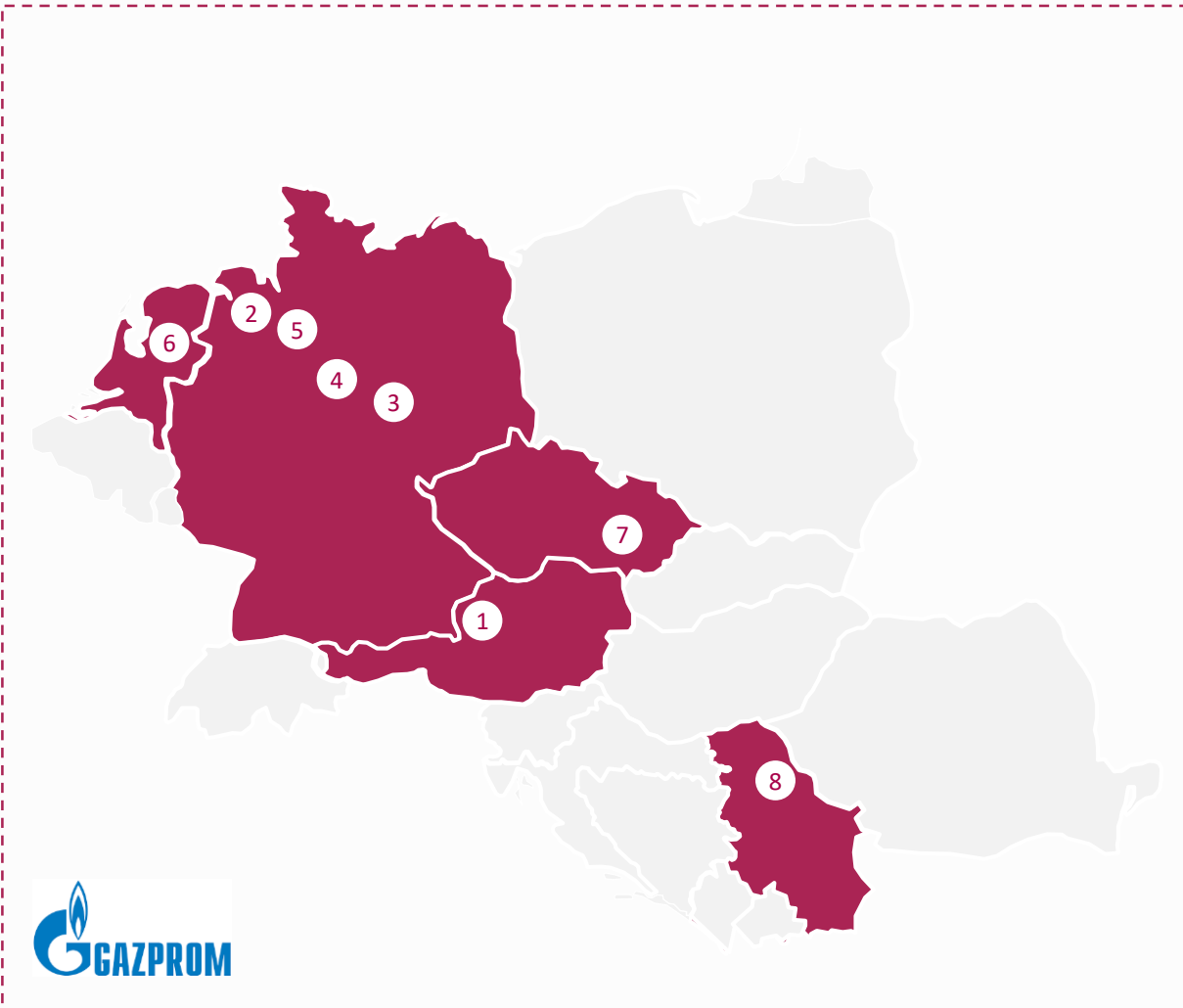
Country	UGS	Gazprom ownership	Active capacity (bcm)*	Gazprom's active capacity (bcm)**	
EU	① AT	Haidach	55.5%	3.10	2.40
	② ③ ④ ⑤ D	Jemgum	83.3%	0.90	0.80
		Katharina	50.0%	0.52	0.52
		Rehden	100.0%	4.24	4.24
		Etzel	33.0%	1.00	0.30
	⑥ NL	Bergemeer	41.0%	4.60	2.85
	⑦ CZ	Damborice	50.0%	0.37	0.37
Non-EU	⑧ RS	Banatski Dvor	51.0%	0.55	0.28

Based on **Gazprom's** underground gas storage (UGS) system development **strategy**:

- facilities are located close to **pipelines**
- and are built in cooperation with **local partners**
- by 2019 Gazprom's storage capacity in Europe surpassed **~11 bcm**

Aggregated active volumes of the 8 storage sites: **15.3 bcm (100%)**

Gazprom Group's aggregated active volumes in European storages: **11.8 bcm (77%)**



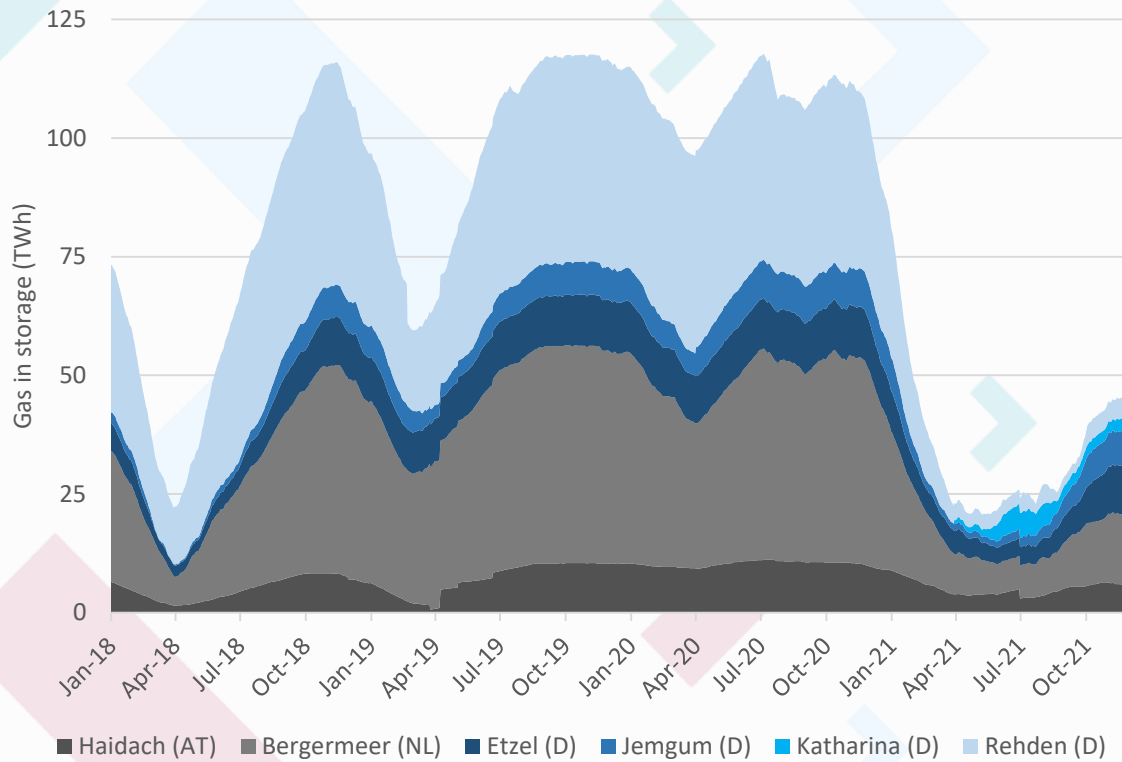
# Storage levels in facilities with Gazprom cooperation

Source: AGSI, ICIS

\*October 2021 data

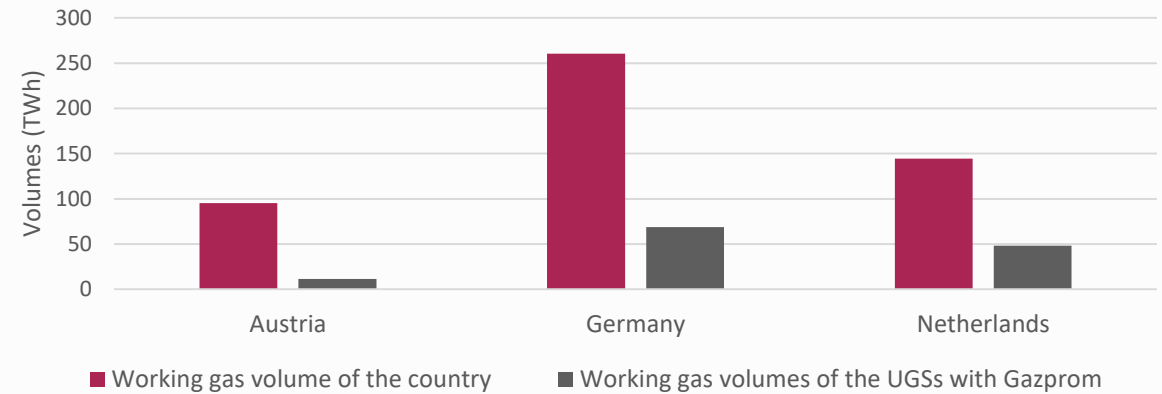
\*\*UGSs with Gazprom cooperation

By the end of October Russian president ordered Gazprom to start injections into its EU storage sites **from 8 November**, once injections into Russian domestic storage sites were completed. **Injections into EU facilities remained moderated** in most of November.

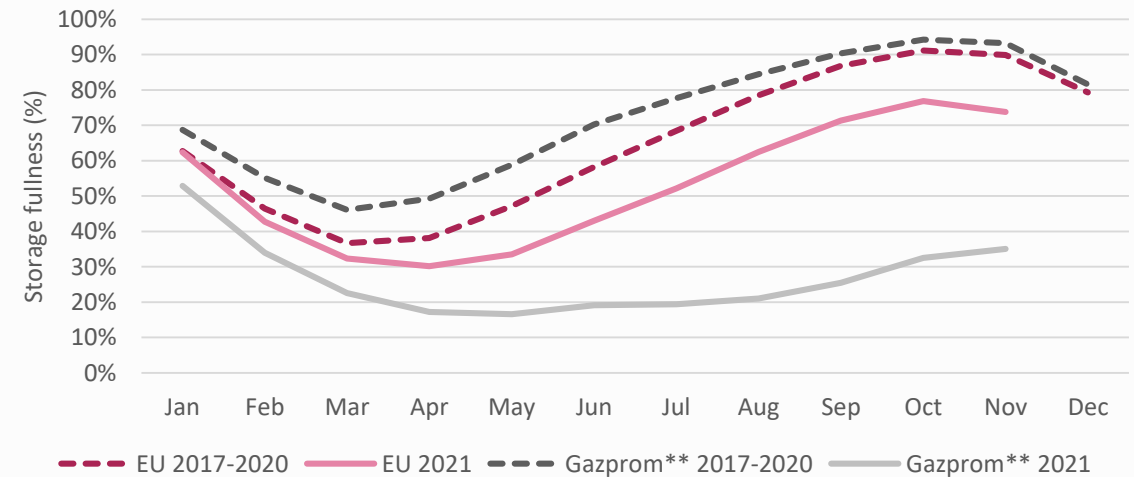


This year only **limited amount of additional transmission capacity** was booked on main gas routes to Germany. If Gazprom would refill its Northwest European stocks slowly, overall **storage levels** in Austria, the Netherlands and Germany are **expected to remain depleted**. As a consequence, **heightened volatility might remain present** on European markets as gas prices react fiercely to any news relating to supply disruptions.

Working gas volumes of UGS's with Gazprom cooperation in relation to the country's aggregate working gas volumes are the following: in **Austria 12%**, in **Germany 26%**, while in **the Netherlands 33%** of the country's gas volumes are stored in facilities where Gazprom has full or shared ownership.\*



Average storage levels in EU were at **multi-year lows** at the start of winter withdrawals.



# Ukraine might face an energy crisis

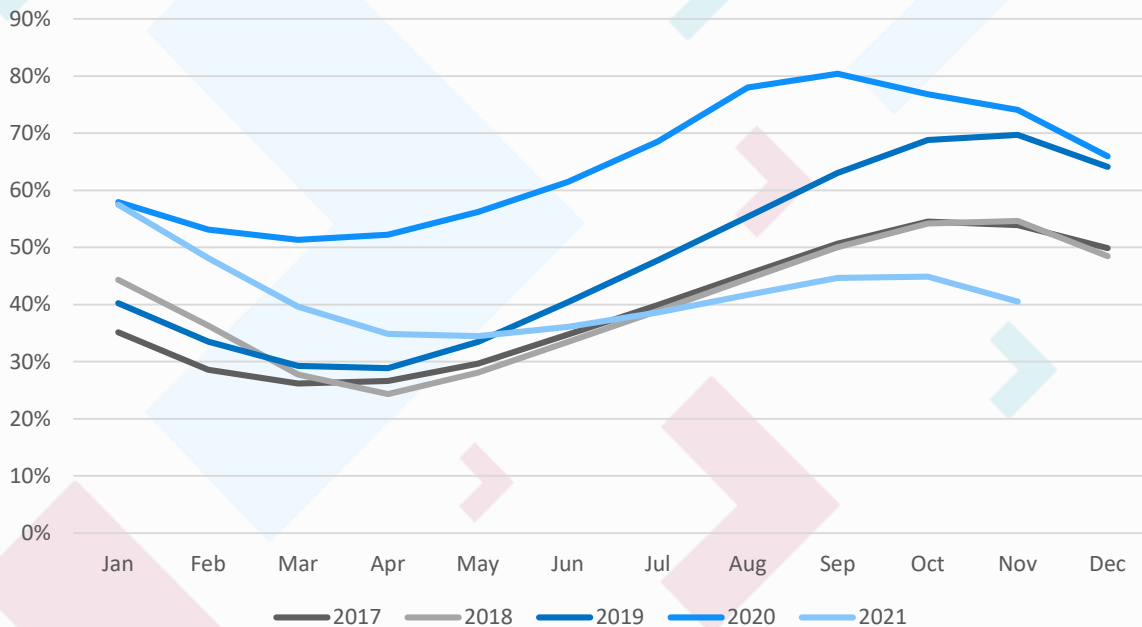
Source: TSOUA, Energy Community, ICIS, Atlantic Council, EVIG, IEA, EIA, Oxford Energy

\*2018 data

\*\*including non-resident customers

Ukraine's gas stocks were around **45% full at the start of the heating season** (~145 TWh). The country's yearly gas consumption is around 290 TWh/year. Domestic natural gas production covers 70% of total consumption, the rest 30% comes from import.

Ukrainian gas storage levels (%)



Ukraine has an extensive natural gas transit and transmission system and owns one of the largest natural gas underground storage facilities in Europe, with 327 TWh working gas capacity .\*\*

Ukraine is integrated to EU gas markets as a result of the **Third energy Package's** advanced level of the implementation. Thus, the number of **non-resident EU customers** increased from 7 to 107 in 2020 compared to 2019, their gas reserves also grew to ~32 TWh.

## Storage System Operator of Ukraine. Overview



12

UKRAINIAN UGSs\*

THIRD-LARGEST

OVER THE WORLD AFTER USA AND RUSSIA

30.95 BCM

TOTAL STORAGE CAPACITY

80%

OF STORAGE CAPACITY CLOSE TO EU

BILCHE - VOLYTSKO-UHERSKE-17050

\*bcm

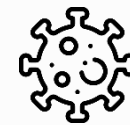
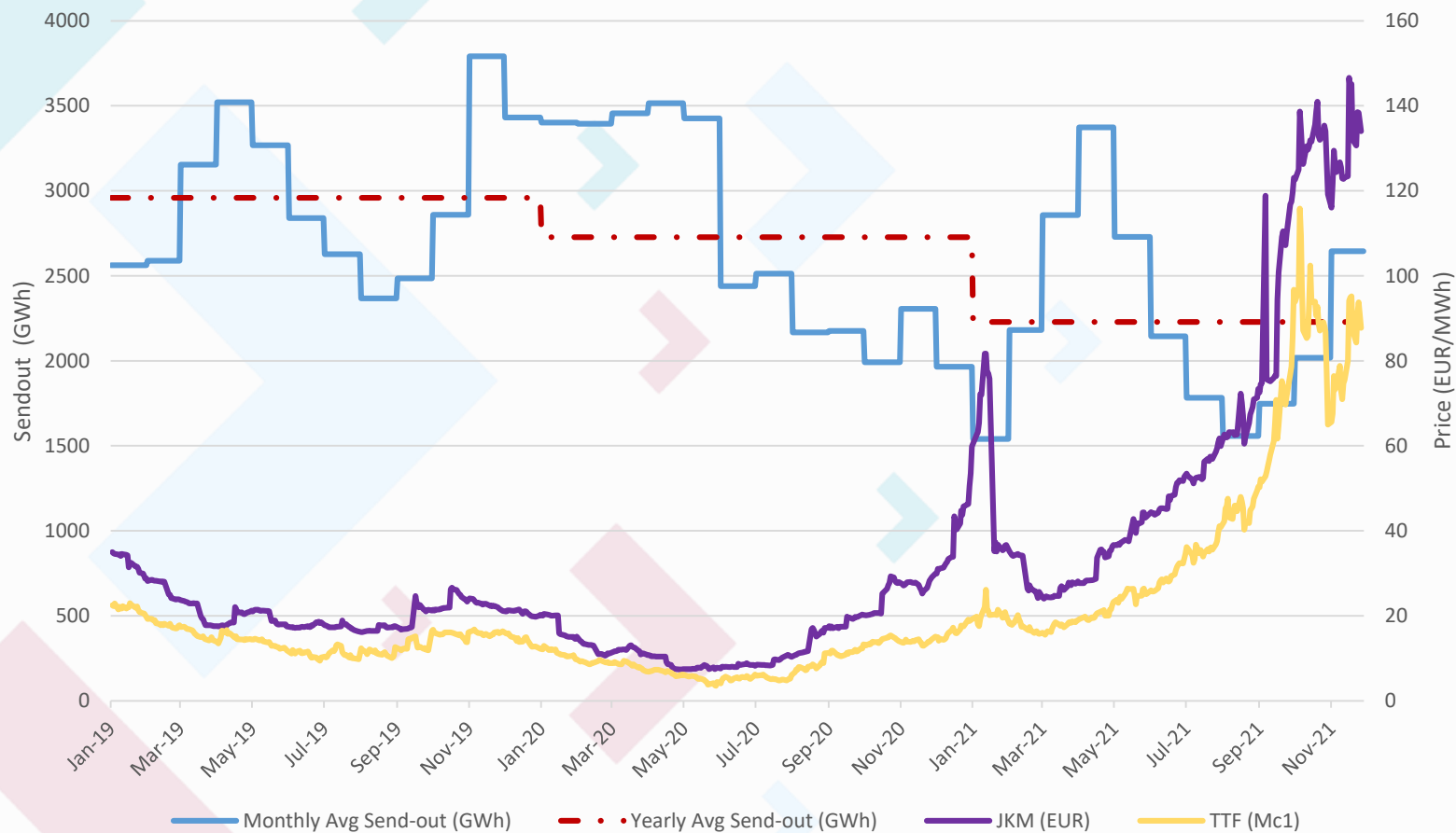


\*excluding Glibovske UGS which is not under administration of SSOU

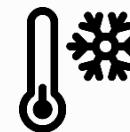
- Ukraine's energy security is at risk as the country's **nuclear generation** might not be able to cover winter demand, while Russia stopped **coal export** to Ukraine on 1 November, **electricity imports** from Russia and Belarus have also stopped, while Russian **gas transit** via Ukraine significantly fell this year.
- Coal (30%) and gas (28%) constitute a significant portion of the Ukrainian energy mix besides nuclear (24%)\* and its economy is **energy-intensive** to a high extent.
- By the end of October Ukraine offered a new long-term gas deal to Russia (50% discount for volumes over 40 bcm/y). Gazprom did not comment the proposal, but Russian president argued the Ukrainian route is more expensive than **Nord Stream 2**.
- Some analysts expect Russia to stop gas deliveries through Ukraine already before the expiry of the current transit contract (2024) and to redirect gas to Nord Stream 2 as soon as possible. The current situation could lead to **political instability and deepen Ukraine's dependence on Russia**. EU leaders pledged support to Ukraine in October.

# European LNG shortage and the global prices

Source: ALSI



2020 – fall in production caused by the pandemic



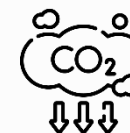
2021 January – Cold weather in Asia



2021 – Recovery from the pandemic



2021 – Unplanned and postponed maintenance

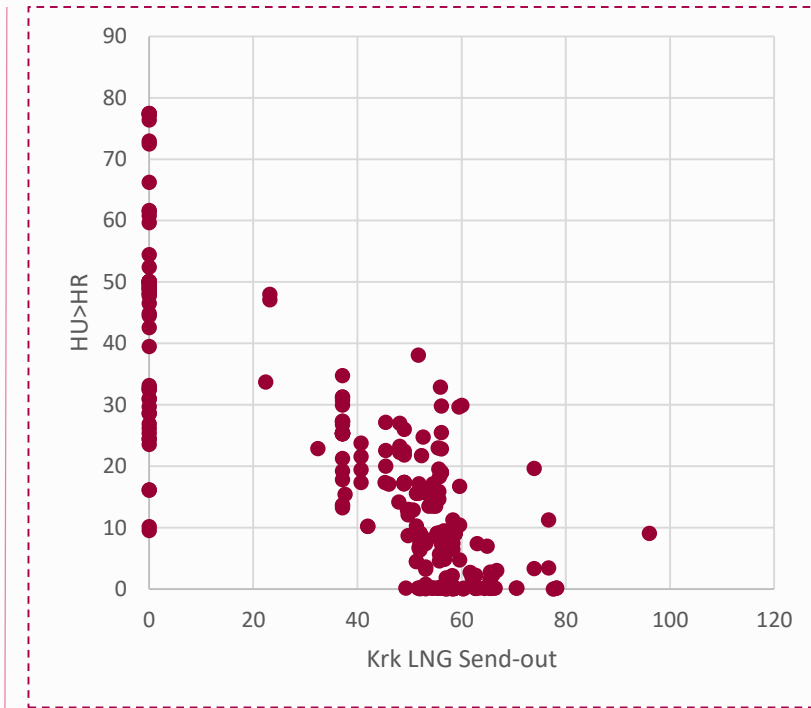
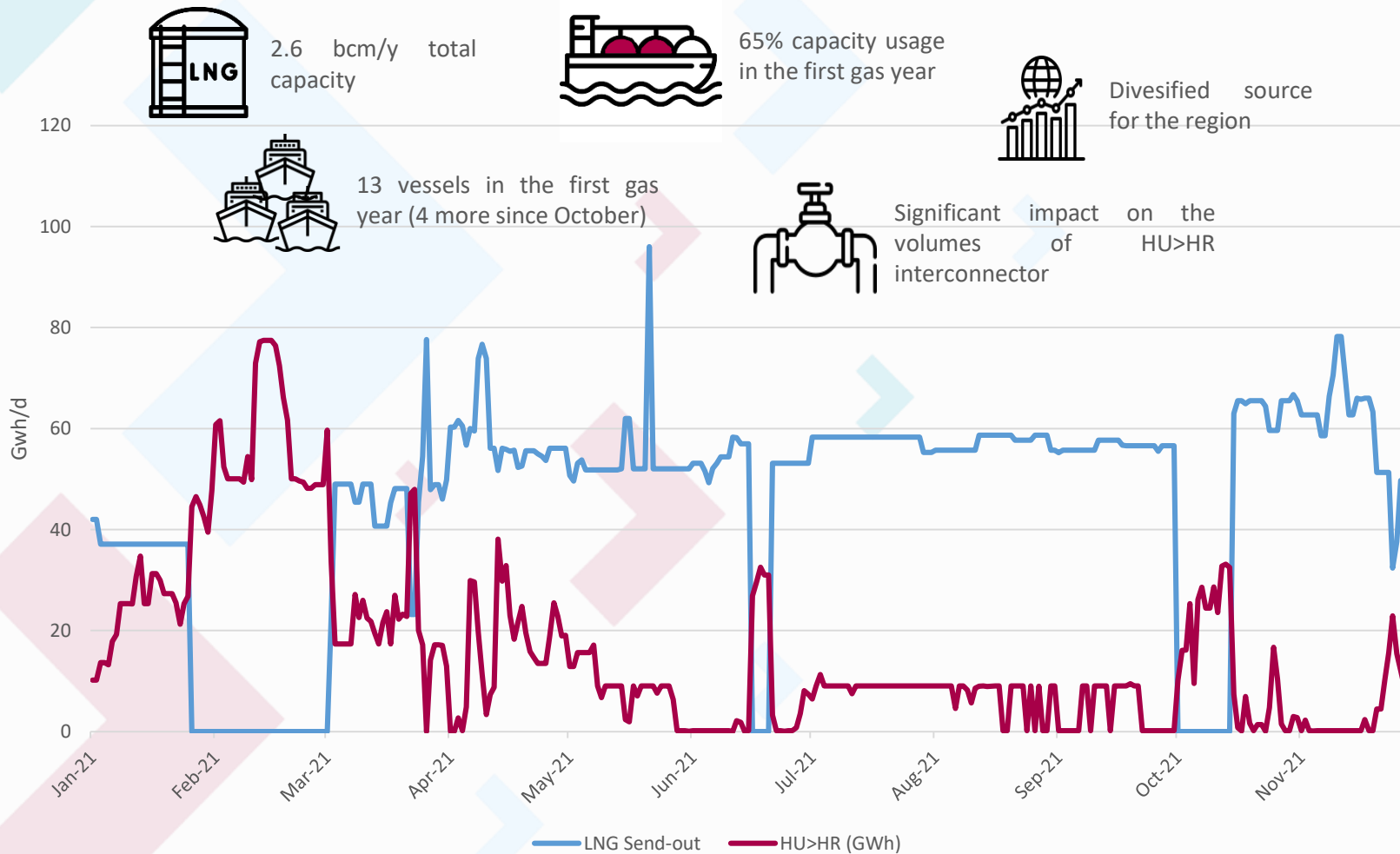


China – coal-to-gas transition

European LNG import declined in 2020 due to the economic downturn caused by the COVID-19 pandemic. However, during the recovery period, this level has not been able to increase in Europe, due to the lower price compared to the Asian markets. Prices in Asia were kept high in January 2021 by extremely cold weather and later by the increase in industrial production. This was strength on the supply side by several major maintenances postponed from 2020 due the pandemic. In the autumn, the LNG sendout started to increase again due to bullish European prices.

# First gas year of the Krk LNG terminal

Source: ALSI, RBP



Strong negative correlation between the physical flow of HU>HR and the Krk LNG send-out. The volumes of Krk appear on the regional markets. The new source helps to diversify the energy supply of the region however the total 2.6 bcm/y capacity is not sufficient to compete with the mostly Russian pipeline gas.