



# European Gas Markets: Winter is coming....what about LNG?!

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# LSEG

REFINITIV®



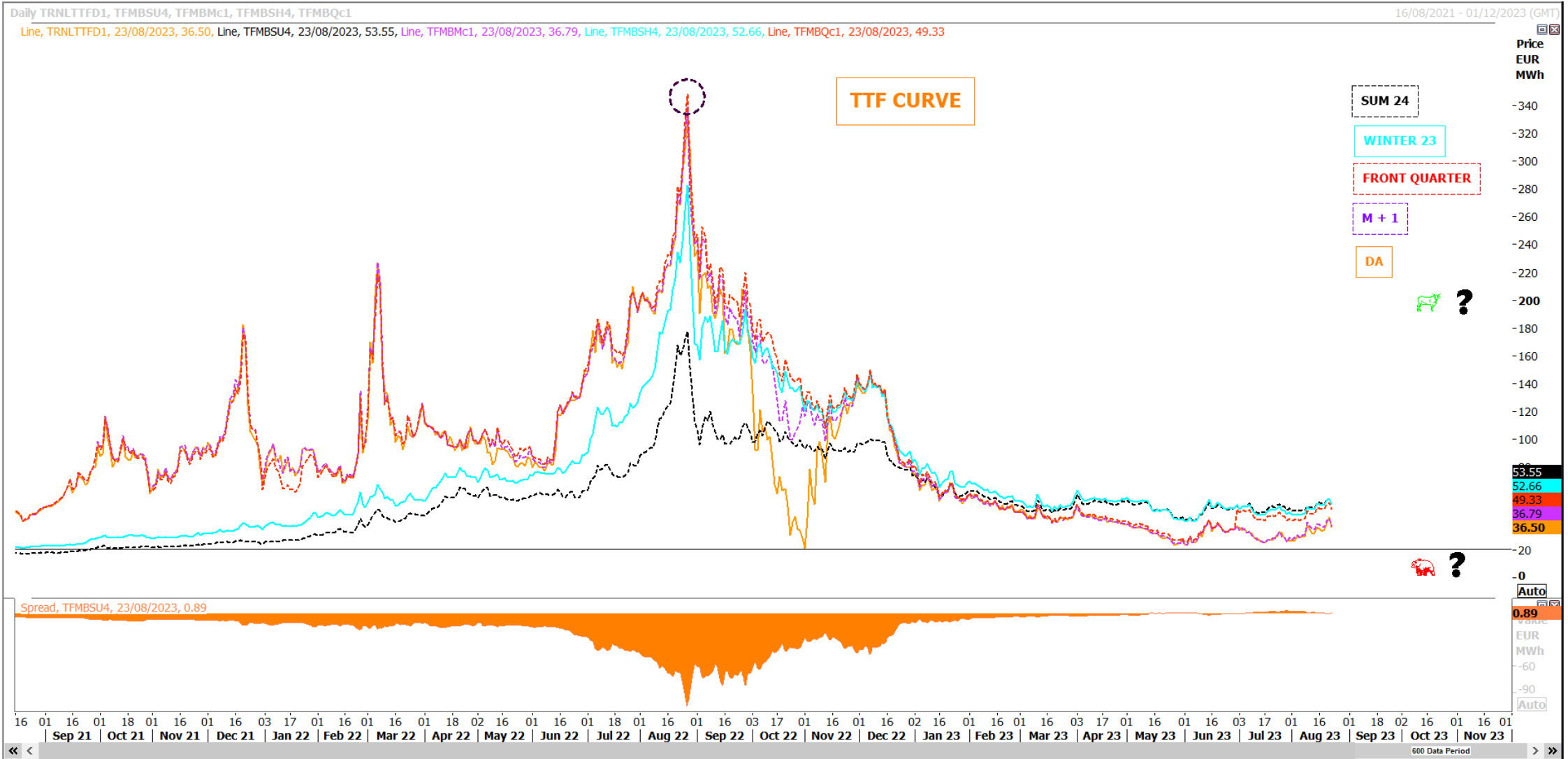
An LSEG Business



## Price Action

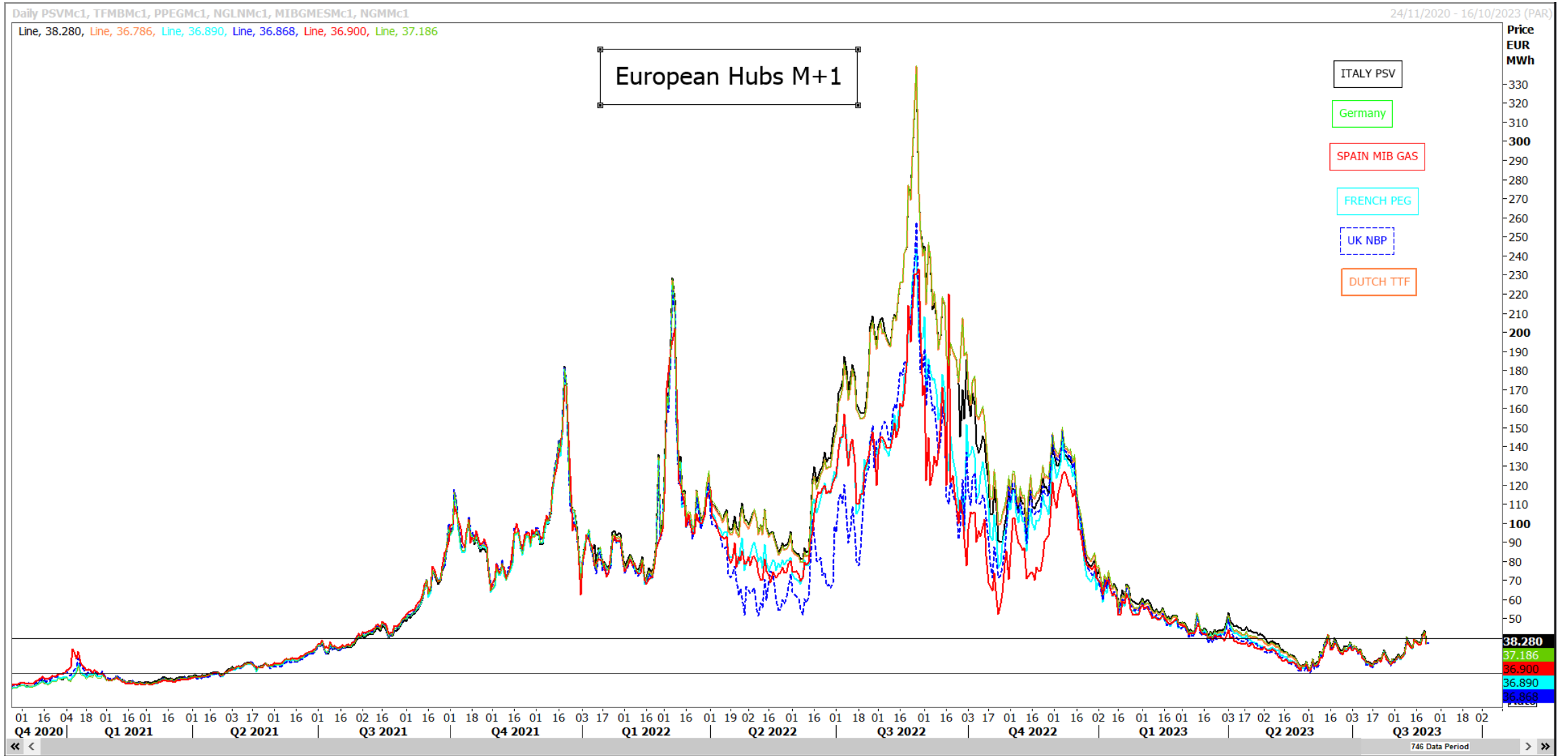


# TTF CURVE

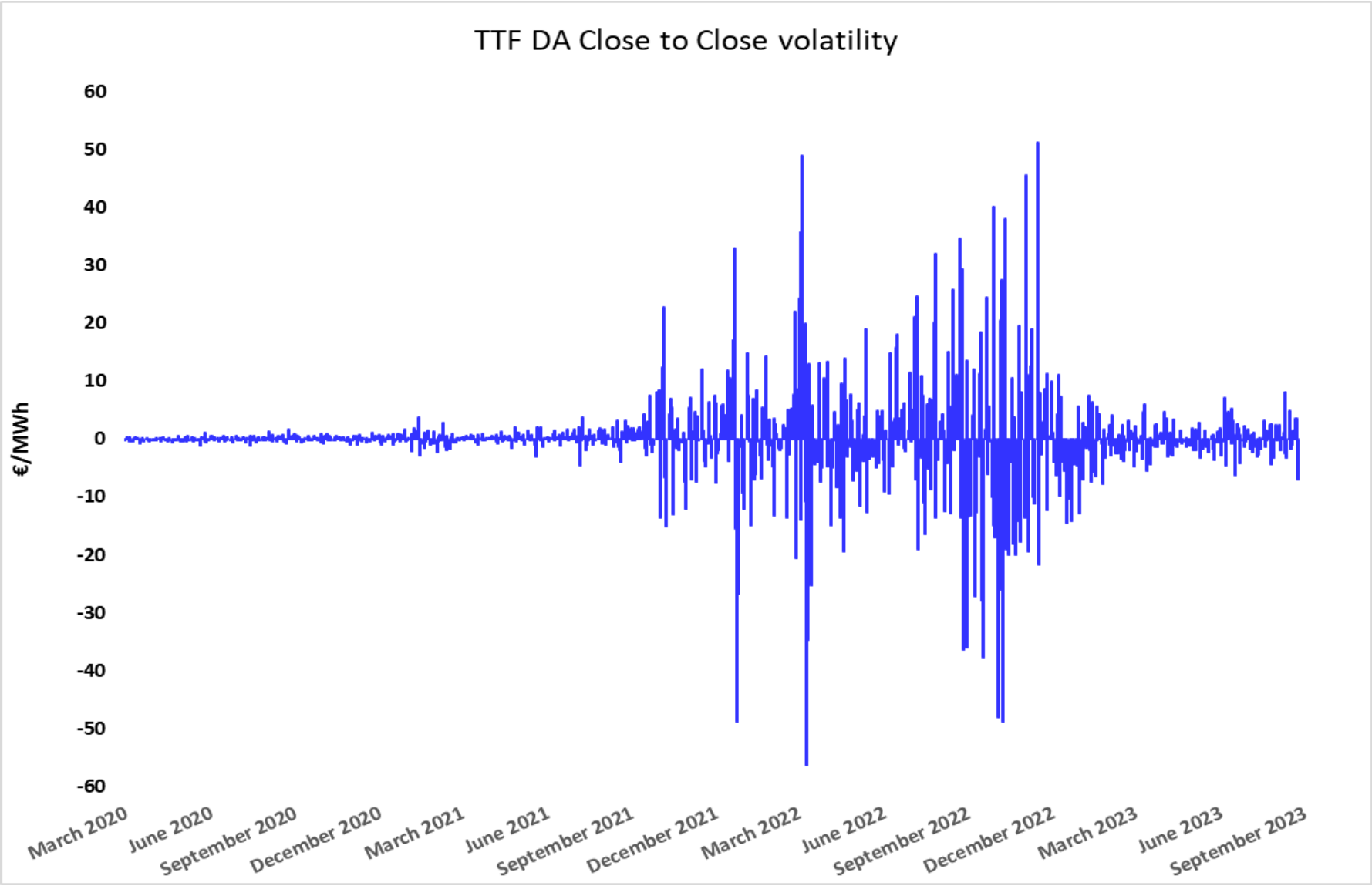


TTF DA averaging €33.93/MWh this summer v **€140.63/MWh** at same juncture in SUM22.

# European Hub Movement

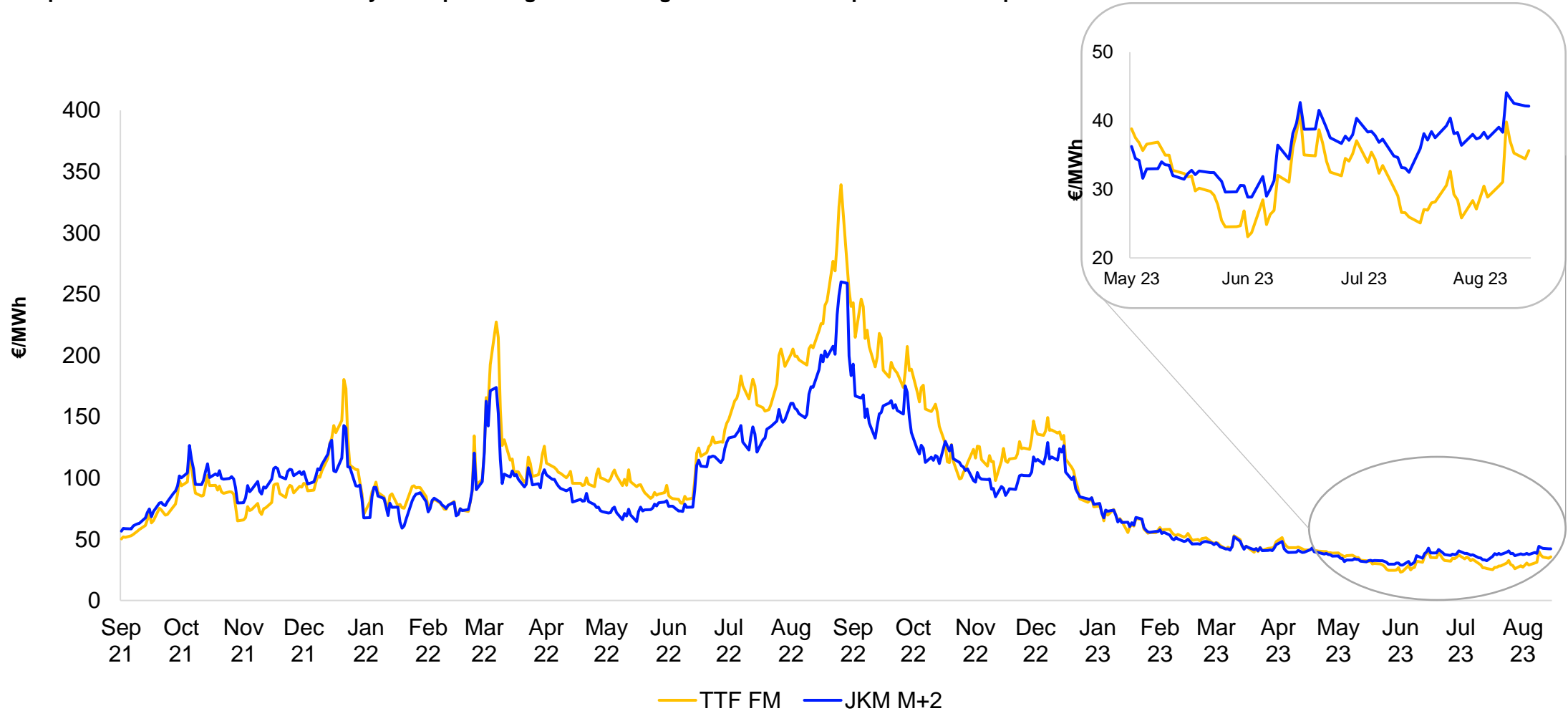


# Volatility



# European and Asian LNG Competition

LNG imports have been disincentivized by lower prices signals as storage filled. When Europe needed LNG prices reacted.

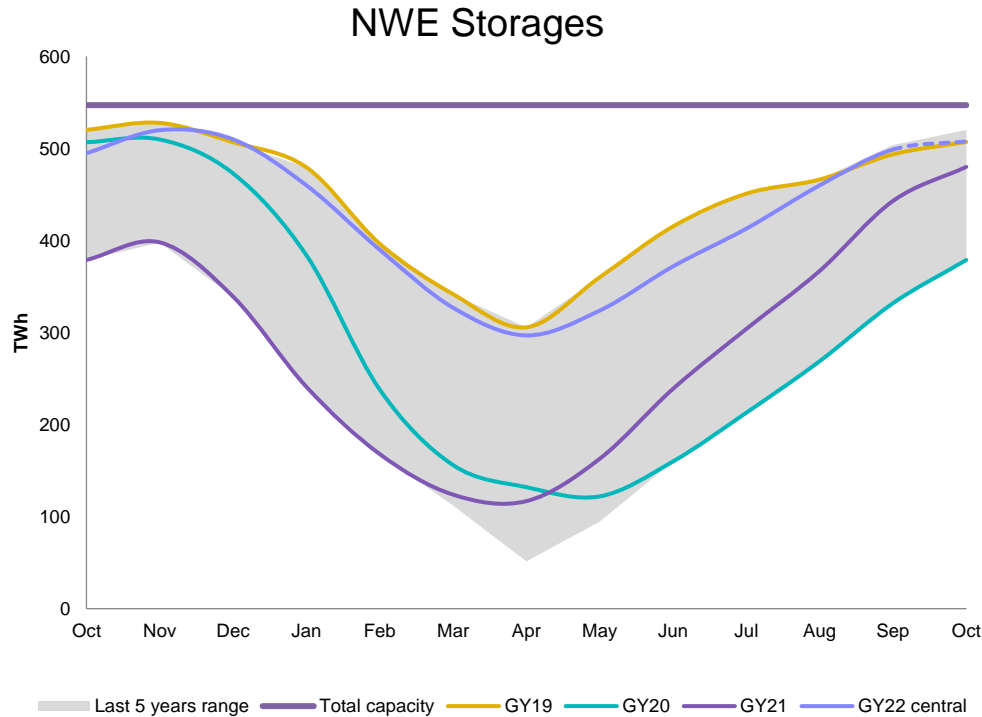




## Looking at the fundamentals

# Storages (NWE)

NWE storage inventory	Jul-23 A	Aug-23 F	Sep-23 F	end Aug 5-y avg	end Sep 5-y-avg	Sep-22 A
End of month, TWh	460	499	508	433	472	494

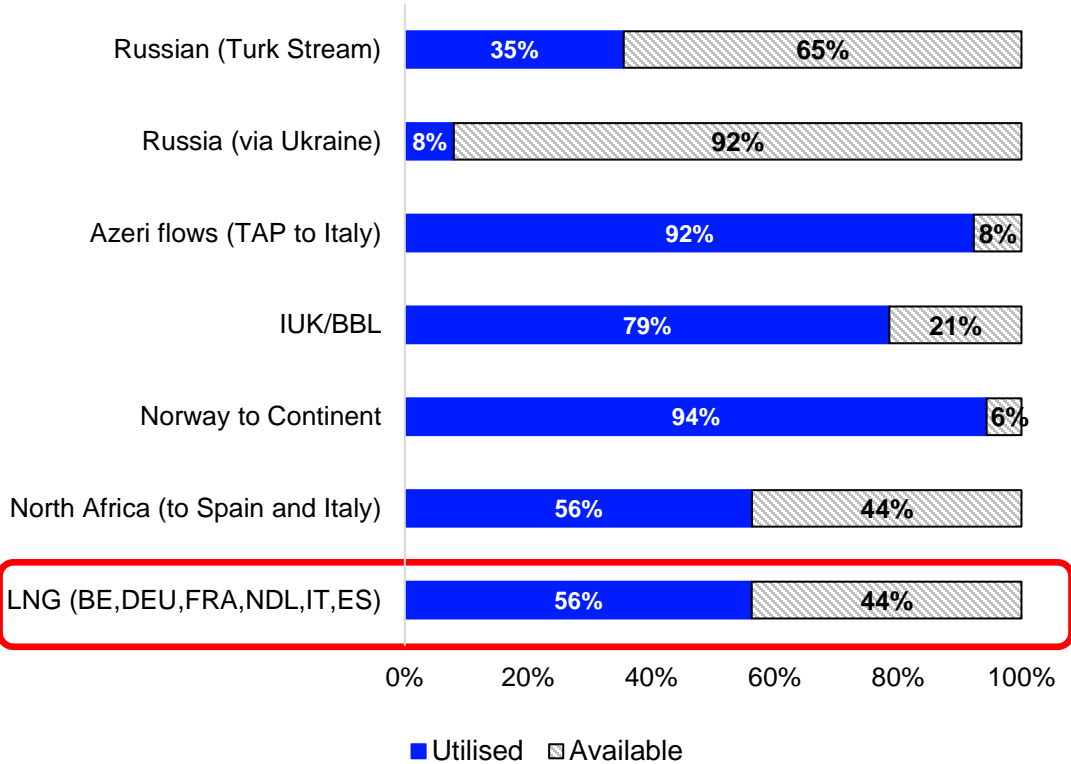


- On the last days of July NWE aggregated storage inventory surpassed the previous historical record of 2020
- GIE data reports EU's aggregate storage fullness at **91%**, including 93% in Germany, 86% in France, 94% in Netherlands and 89% in Belgium. This is well ahead of mandated deadline set for November 1<sup>st</sup> at 90%.
- The heavy Norwegian maintenance and stronger seasonal demand should slow down injections in September. Our balance suggests implied net injections to drop to 1027GWh/d from 1751GWh/d in August.
- Our forecast also suggests that injection path next month should be slower than 1582GWh/d last September when market participants were rushing to fill up storages ahead of the first winter with heavily reduced Russian supply. Heavier Norwegian maintenances and lower Groningen production this September also contributes to slower injections.
- Despite the potential for injections to slow down our base case scenario ( assuming no Australian LNG disruption) suggests NWE storages to enter winter season at 508TWh and corresponds with an aggregated fullness of 94%. The previous record was 520TWh in 2019.
- The impact of the Australian strike on LNG arrivals to NWE in September , if any, is the main uncertainty to our forecast. Although the start of the strike might coincide with the heaviest shutdown on NCS which will make market nervous, we do not see an immediate strong risk for NWE inventory unless the strike is prolonged into several months. The sensitivity scenario of our balance with only 50% of LNG arrivals assumed in the base case scenario ( 91mcm/d instead of 182mcm/d) indicates that NWE storages would be at 90% fullness by 1 October.

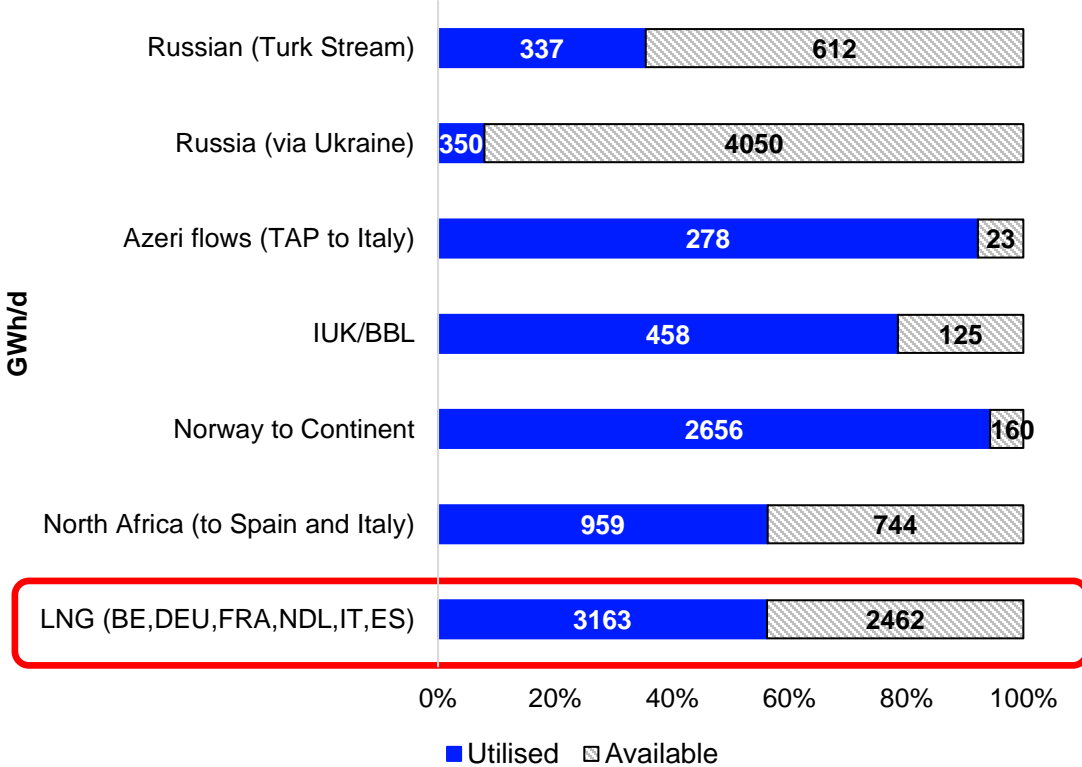


# Utilization of European Import Infrastructure (LNG and pipelines)

Import capacity utilisation rate in Jan-Aug 23



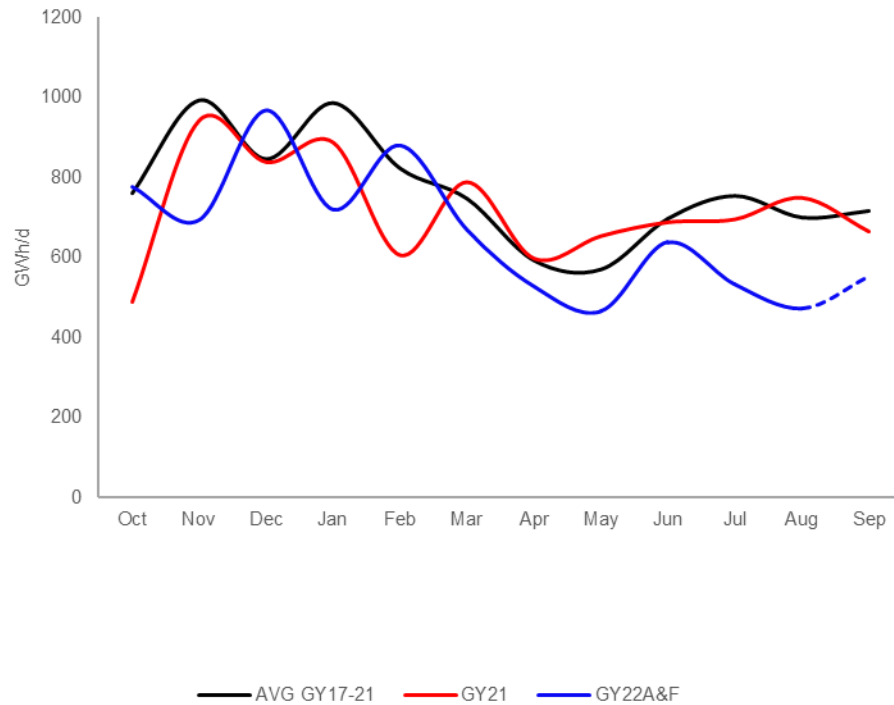
Import capacity utilisation rate in Jan-Aug 23



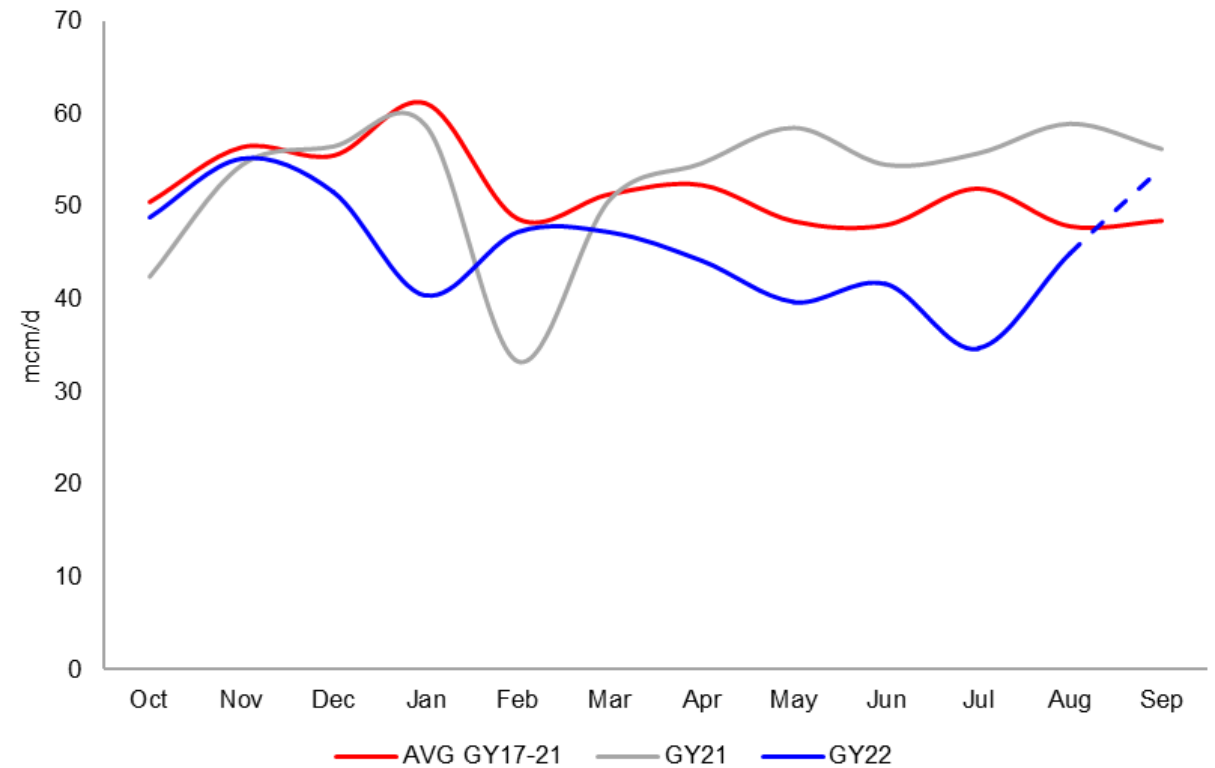
# Gas for power demand

We use Refinitiv Power team's Forward model for gas for power consumption forecast. Gas for power demand has been weaker due to increased renewable capacity and softer demand in the power sector despite the loss of German nuclear and lower Belgian nuclear output. GAS for power lower even when prices dipped below the CSP price and notwithstanding lignite switching which was also a relatively new phenomenon. Refinitiv Power Team forecast indicates that nuclear availability in France in September is expected at 38.3TWh, compared to 36.7TWh in August and well above the 27.3TWh last year. Hydro levels have also improved after the recent spell of heavy precipitation.

Total Gas for power demand (DEU, BEL, FRA, NDL)

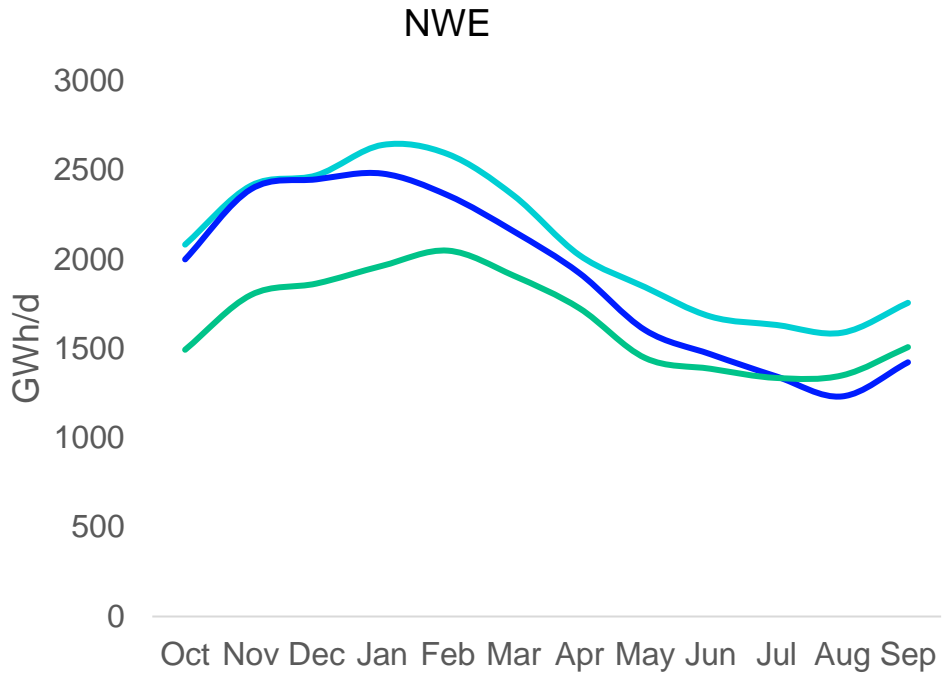


UK gas for power

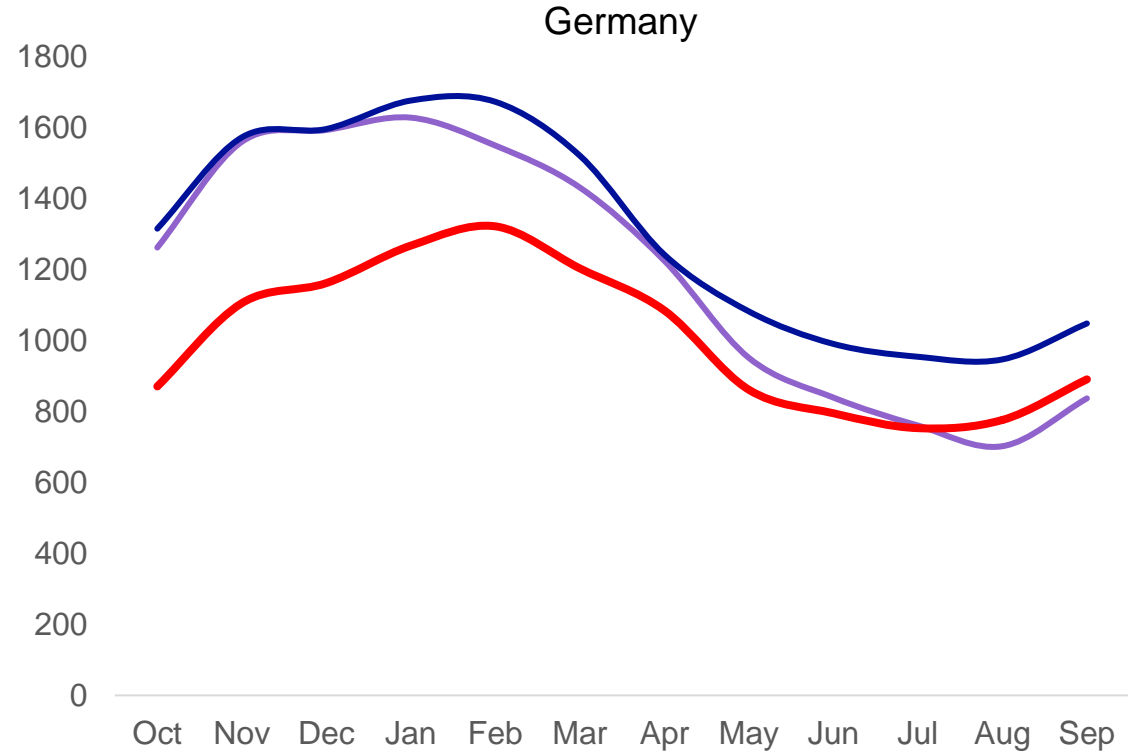


# Industrial Consumption:

Refinitiv European gas research recently added a page with a synthetic modelled split of German RLM actual consumption data (Recorded Load Metering) into industrial and gas for power demand. German industrial consumption accounts for roughly half of the total NWE industrial consumption. High prices, shuttering in of production and offshoring all impacting.

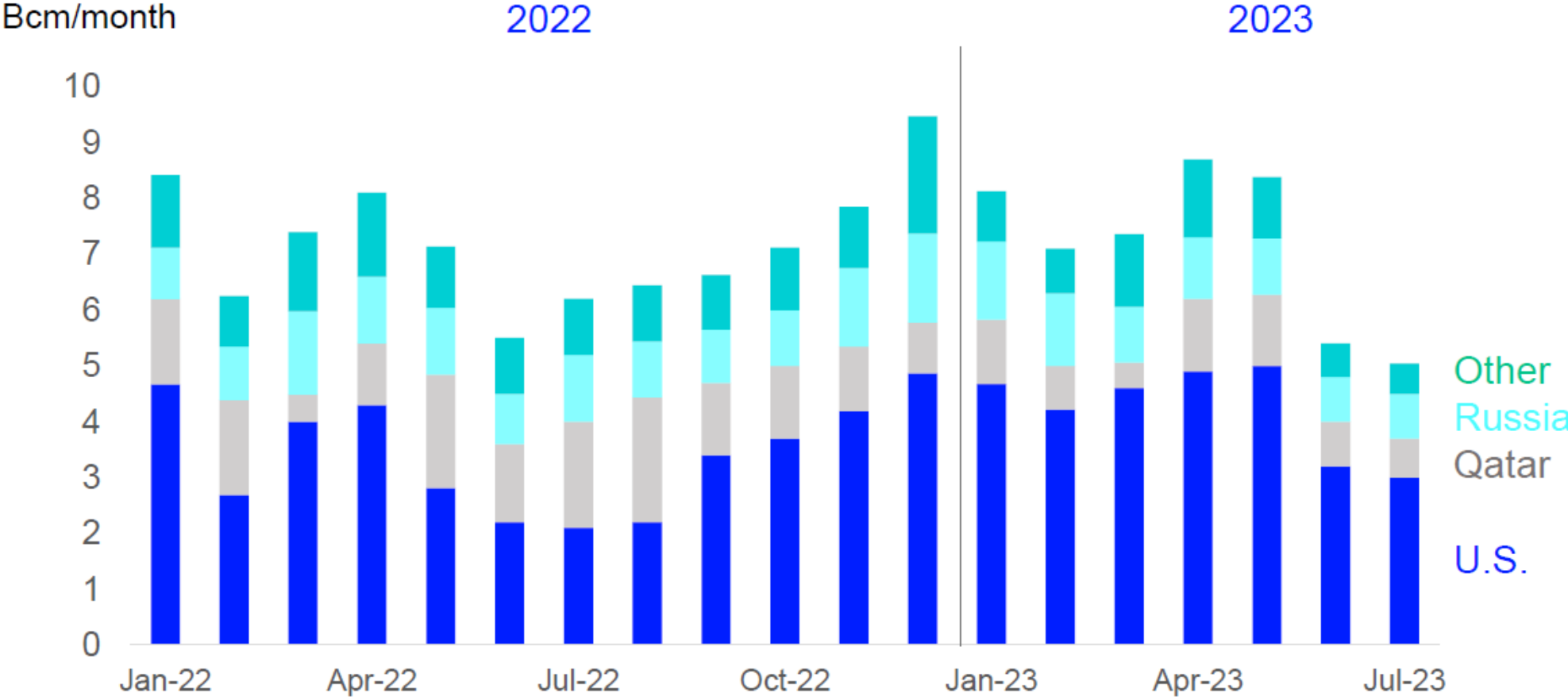


— AVG GY17-21 — GY21 — GY22 A&F



— GY21 — GY22 — AVG GY17-21

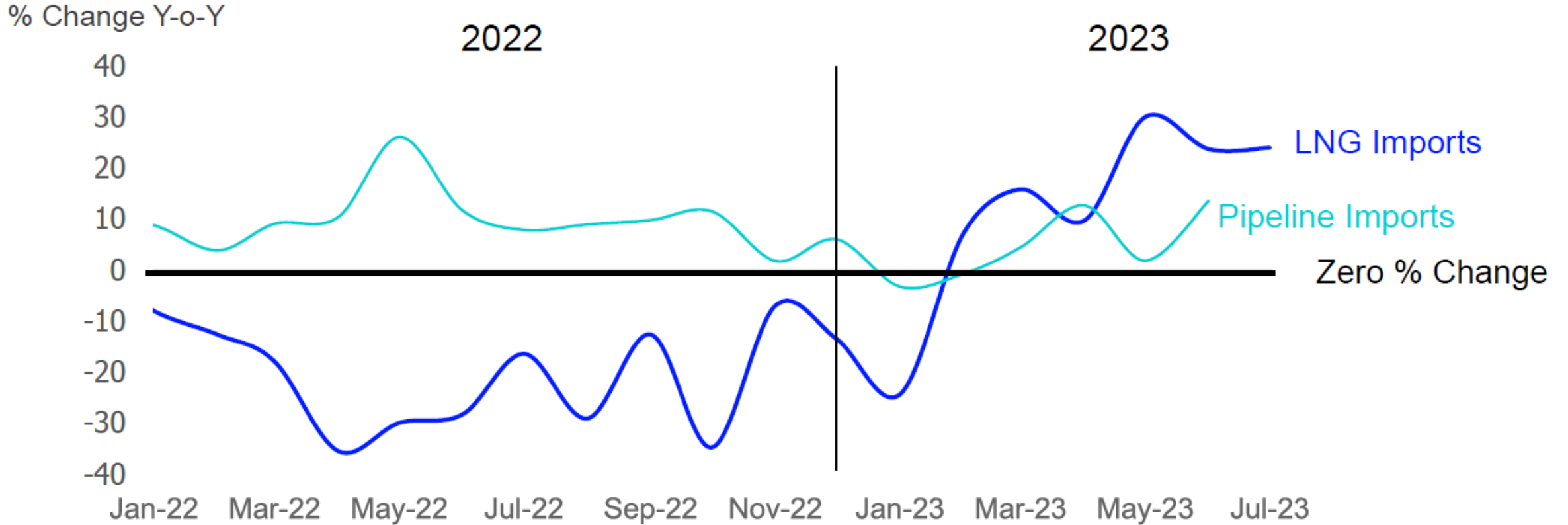
# Cargo arrivals to NW Europe thus far



Source: Refinitiv, TSO

# Chinese LNG imports:

YTD up by 9.3%/4.3bcm, 8.6bcm lower than the same period in 2021



Source: Chinese Customs, Refinitiv Flows data



## Macro outlook

# European macro situation remains in the doldrums and should continue to be a drag on demand.

## HCOB Eurozone Composite PMI Output Index

sa, >50 = growth since previous month



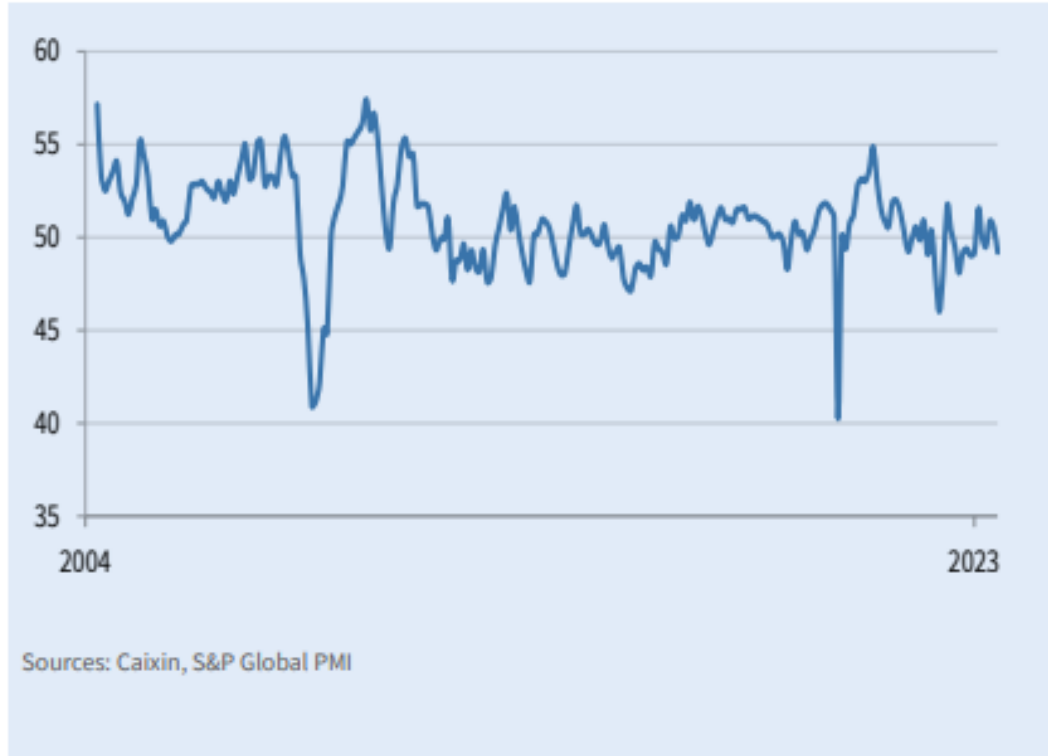
Source: HCOB, S&P Global PMI.

- Eurozone economy shrinks in July as manufacturing downturn worsens
- and service sector comes close to stalling
- Key findings:
- HCOB Eurozone Composite PMI Output Index at 48.6 (Jun: 49.9). 8-month low.
- HCOB Eurozone Services PMI Business Activity Index at 50.9 (Jun: 52.0). 6-month low.
- The fastest decrease in business activity across the euro area since November last year.
- Once again, the manufacturing sector represented a considerable drag on the eurozone's economic performance in July, with production volumes declining at a rapid and accelerated rate.

# Ditto for China

## China General Manufacturing PMI

sa, >50 = improvement since previous month



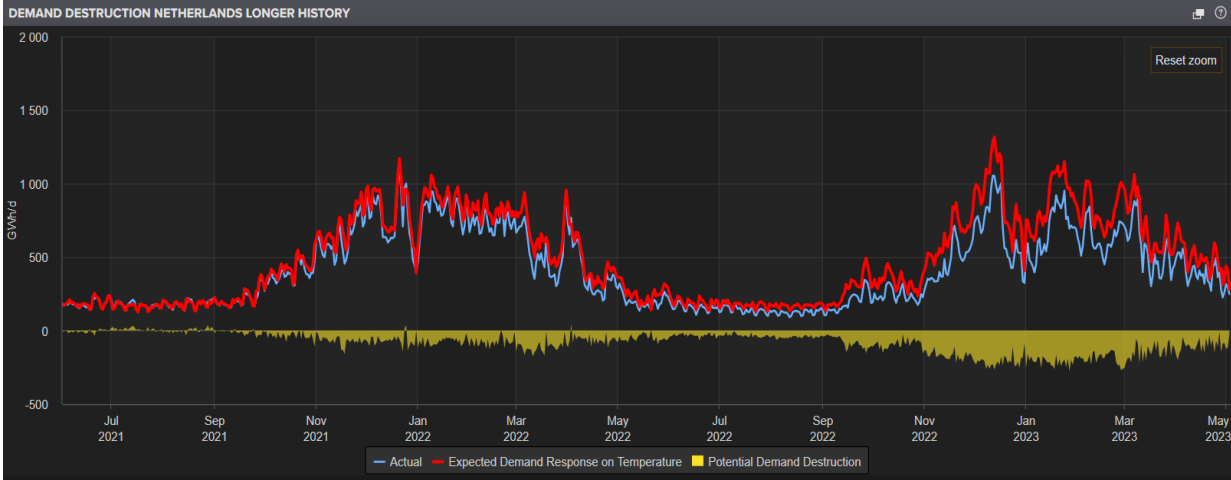
- **New export business contracted at the fastest pace since September 2022.**
- **Muted foreign demand was a key factor weighing on total sales, with new export orders down noticeably in July.**
- **Softer demand conditions led manufacturers to cut production for the first time since January**
- **China's economic recovery in the first quarter exceeded expectations, but the momentum weakened in the second.**
- **Despite data for industrial production and investment in June showing some signs of recovery, macroeconomic growth remained sluggish, and considerable downward pressure on the economy persists.**





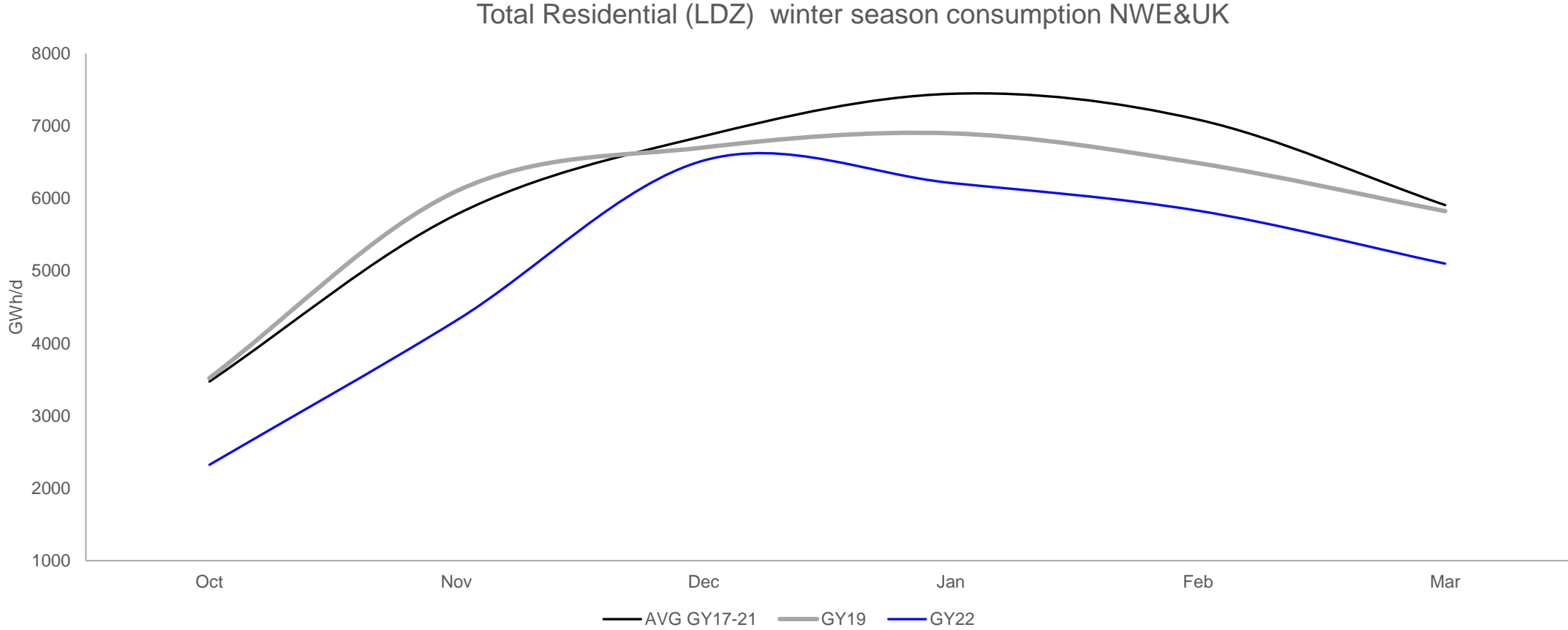
**WIN 22 v WIN 23**

# LDZ demand destruction was substantial..

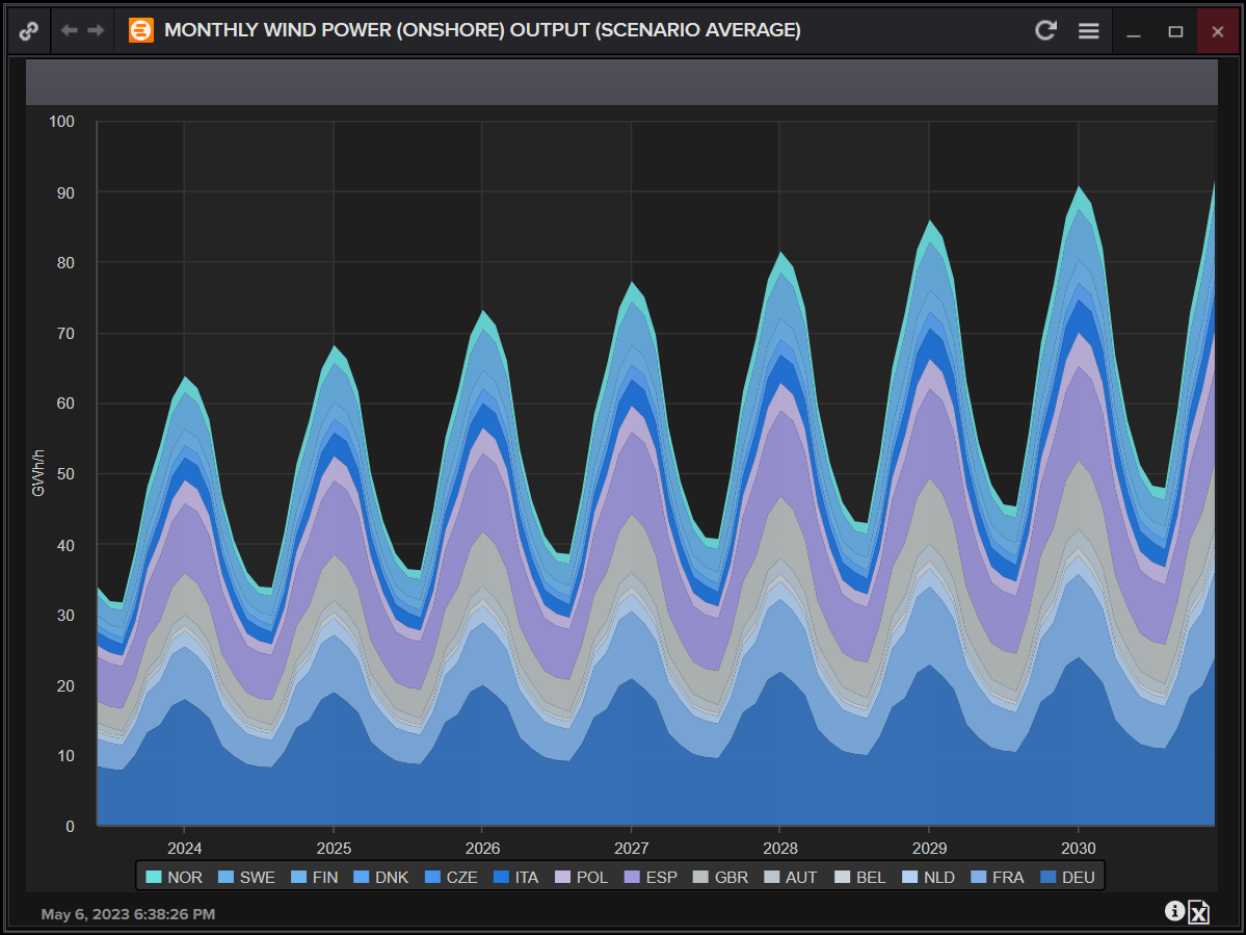
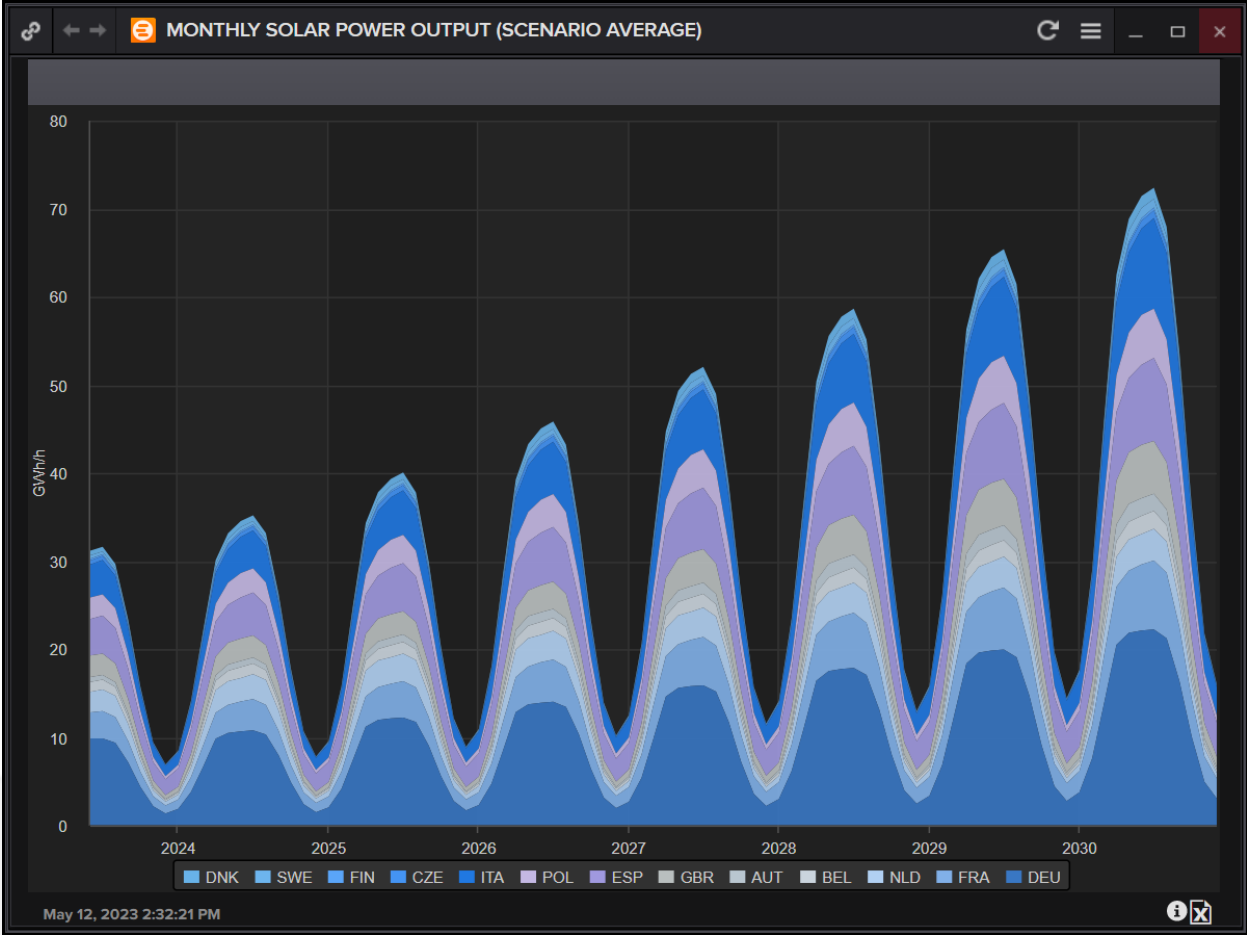


# Demand destruction on top of the milder weather

LDZ demand in WIN22 was historically the lowest. 17% lower than the 5 year average and 15% down from WIN19 which was comparably mild.

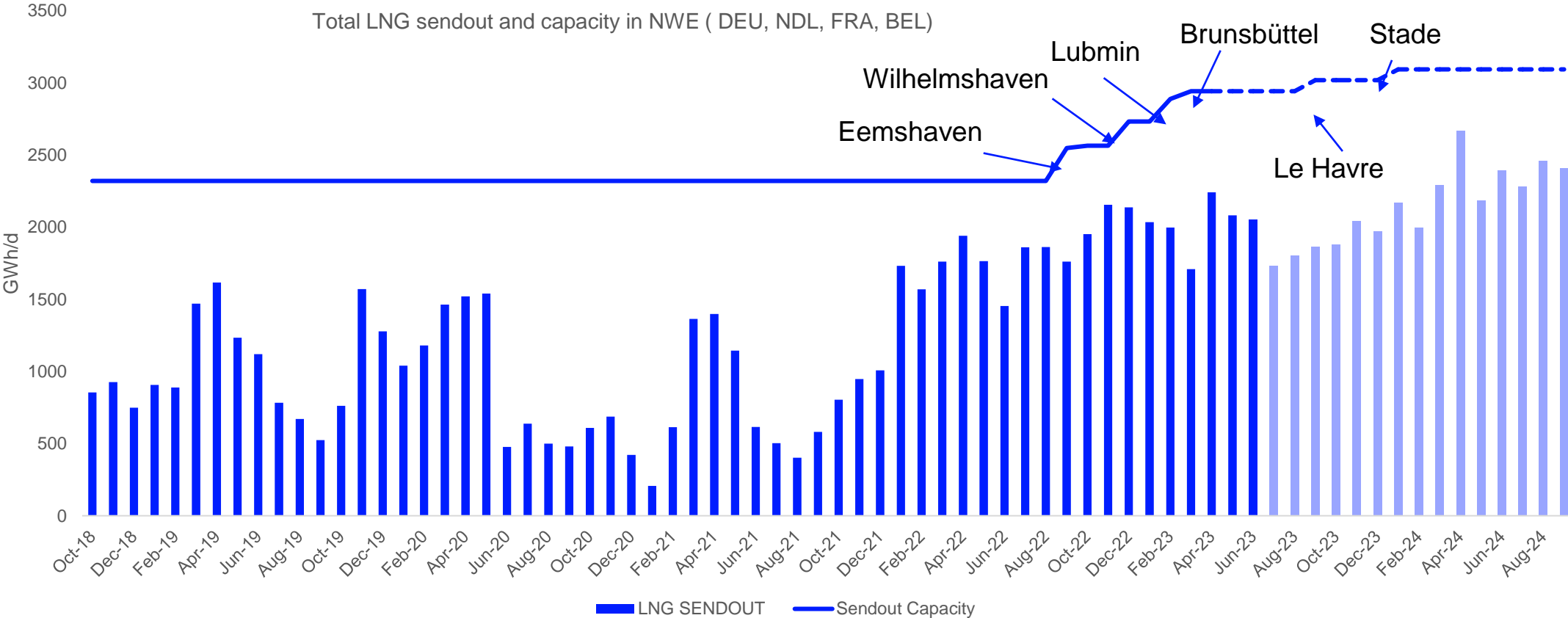


# Renewable capacity increases

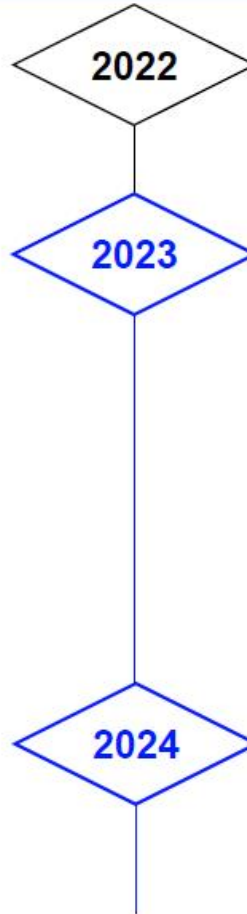
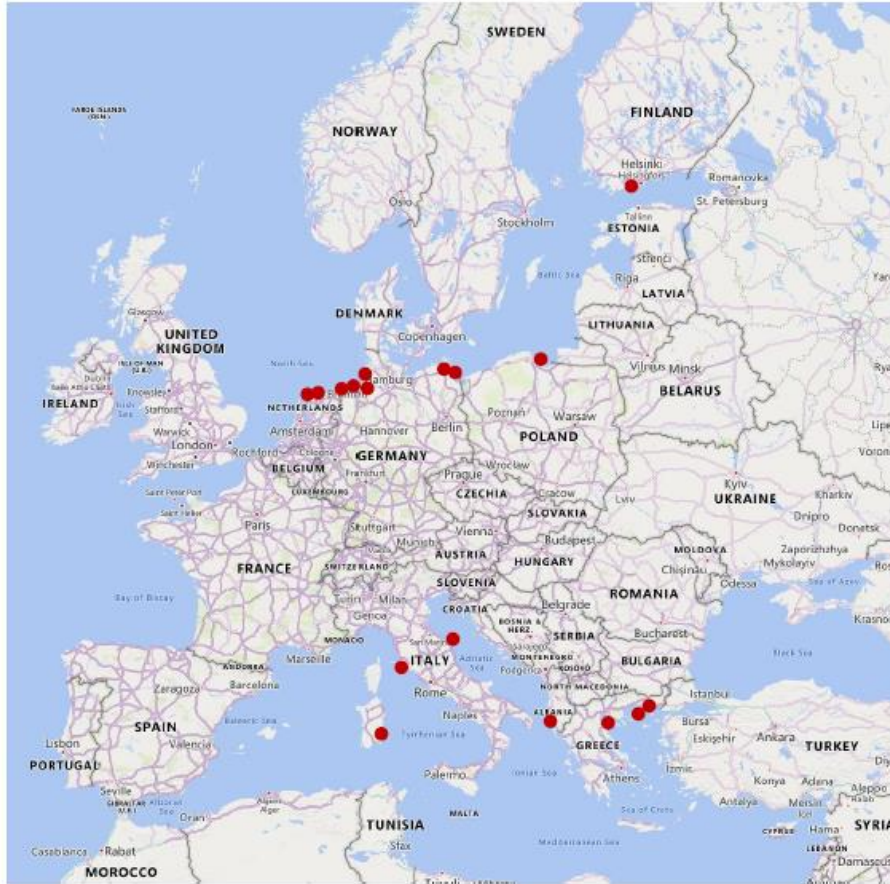


# LNG imports offset almost half of Russian supply drop

NWE&UK imported 50bcm of LNG during WIN22, this is 16bcm up winter or winter. New four FSRUs brought at a record speed, increasing sendout capacity by 680GWh/d. Chinese LNG imports were slow to recover.

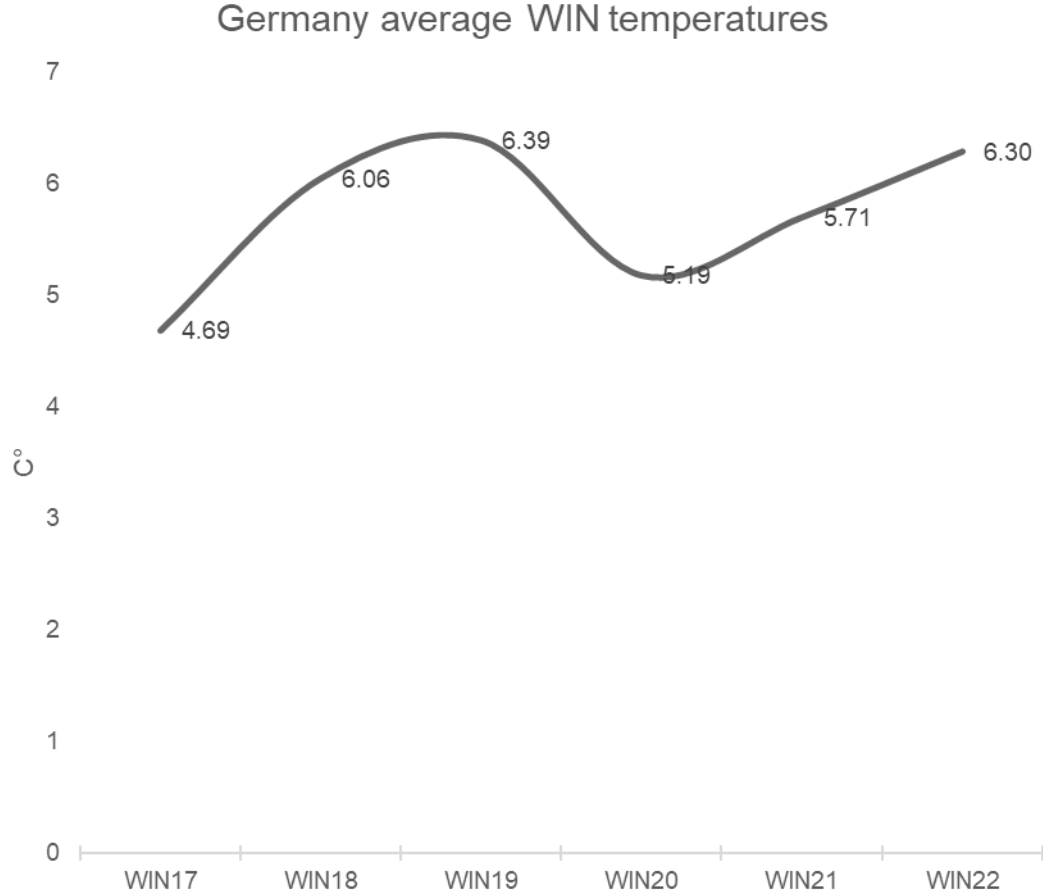
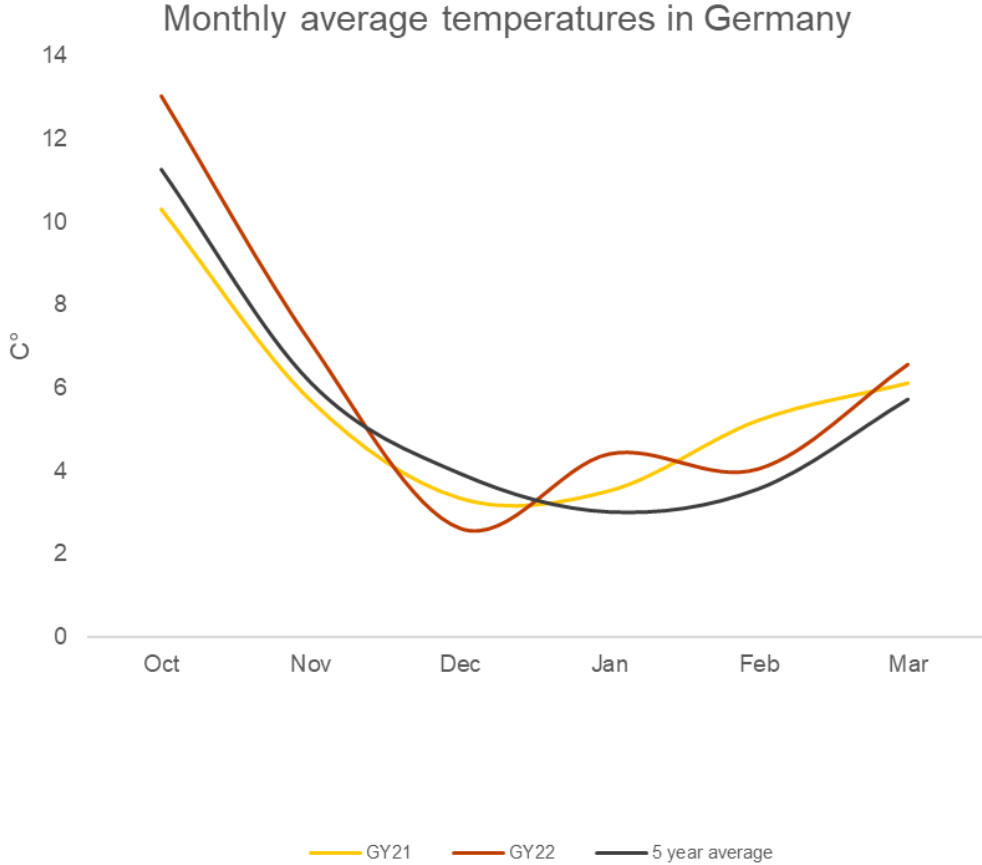


# LNG CAPACITY INCREASES

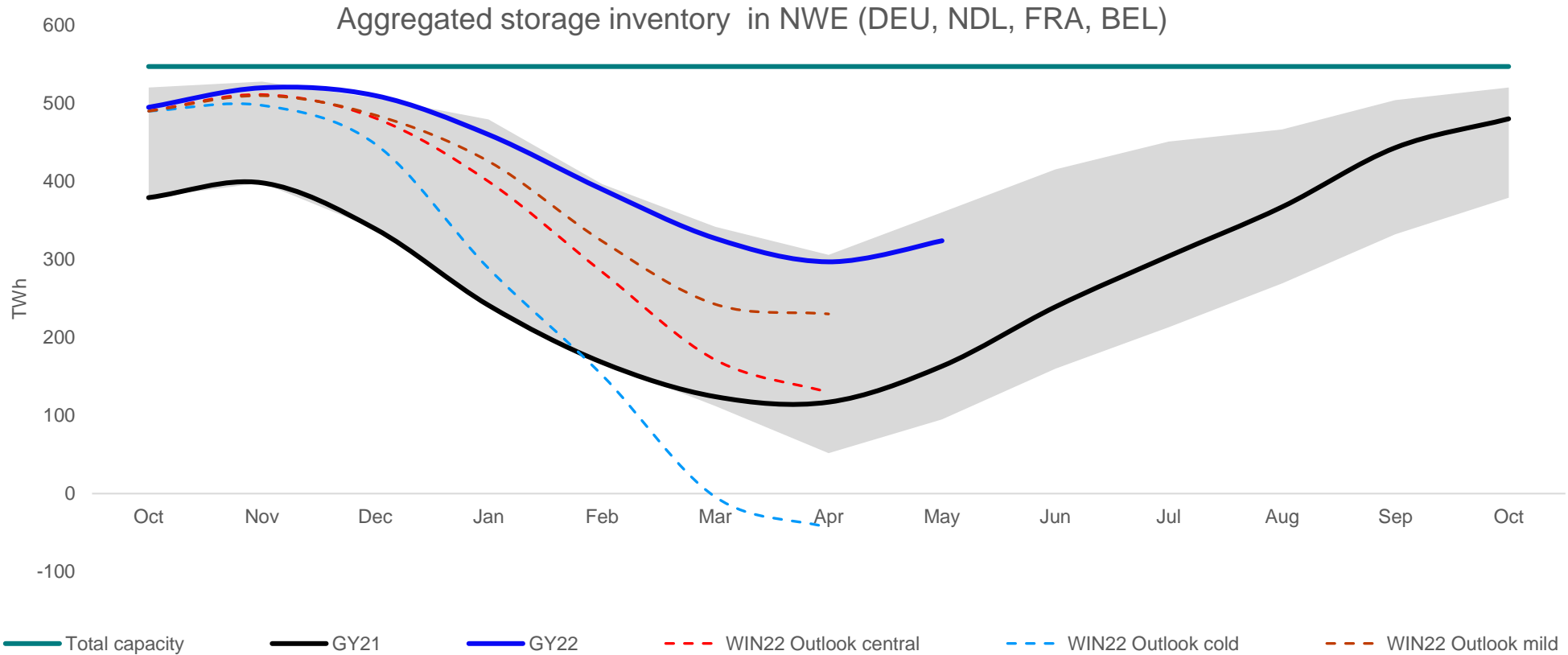


<u>Location</u>		<u>Capacity (bcm/yr)</u>
2022	Netherlands Eemshaven	4
	Netherlands Eemshaven	4
	Germany Wilhelmshaven	5
	Finland Inkoo	5
2023	Germany Lubmin	5
	Germany Brunsbuttel	3.5
	Italy Piombino	5
	Germany Wilhelmshaven	5
	Germany Stade	7.5
	Germany Lubmin	7.5
	France Le Havre	4.3
	Greece Alexandroupolis	5.5
	Albania Vlora	2.5
2024	Italy Adriatic	5
	Italy Sardinia	5
	Greece Thracian	6

**Temperatures above the five-year average in some of the most intense heating demand periods in WIN 22 facilitated a big fall in domestic consumption.**



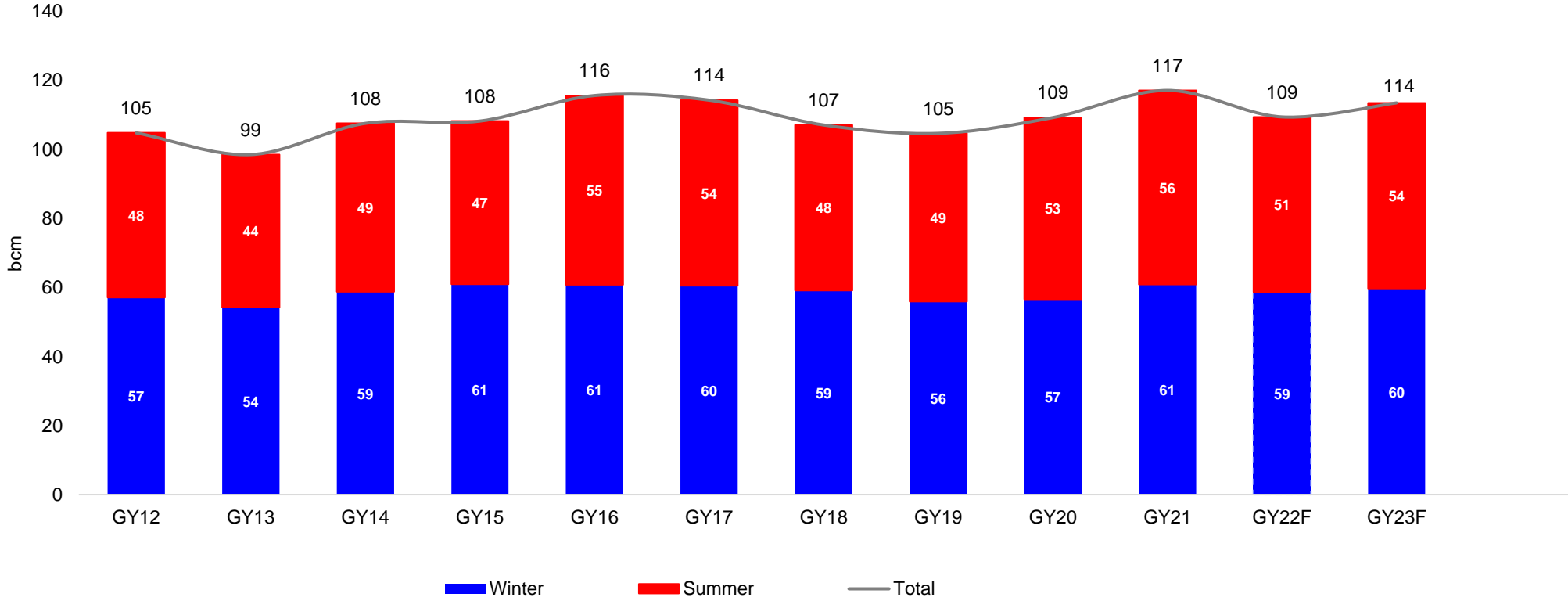
# Our outlook ahead of last winter





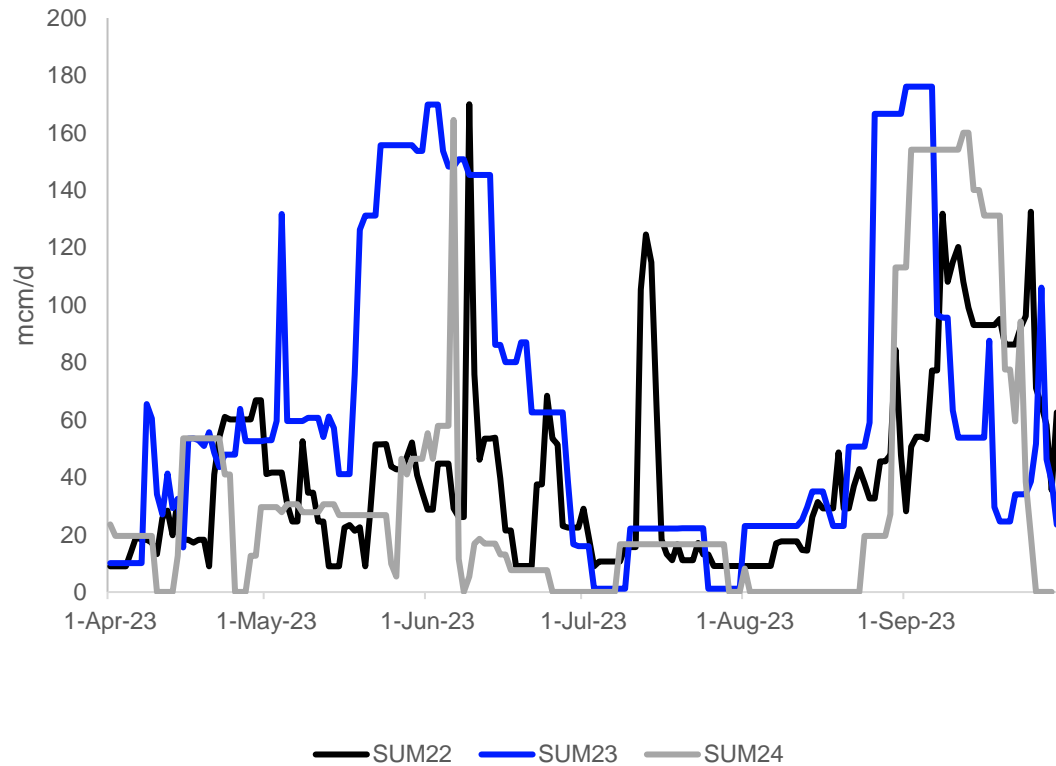
# Norweigan Production

Norway reached record-high production last year, maximising production flexibility. Norwegian production adjusted lower in WIN22 amid lower flexible production from Oseberg and continued maturation. Heavy maintenance has impact SUM23 supply.

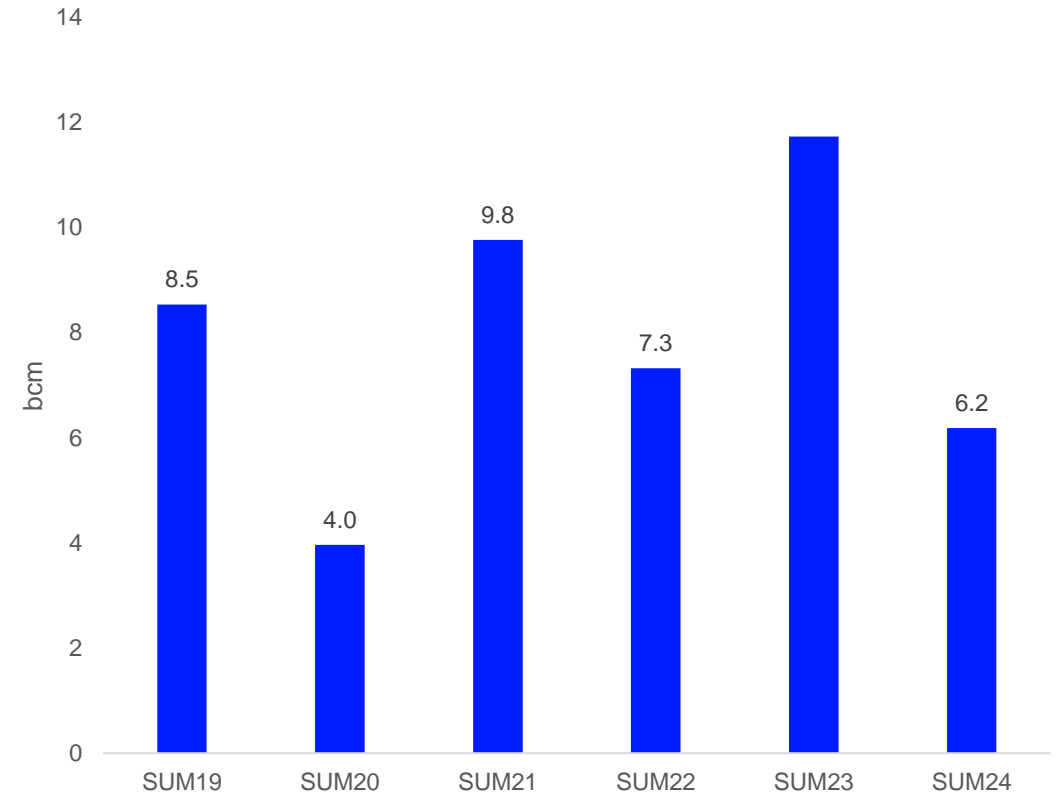


# Heavy maintenance in Norway continues right up until the start of WIN23.

NCS maintenance aggregated summer impact on fields and processing plants



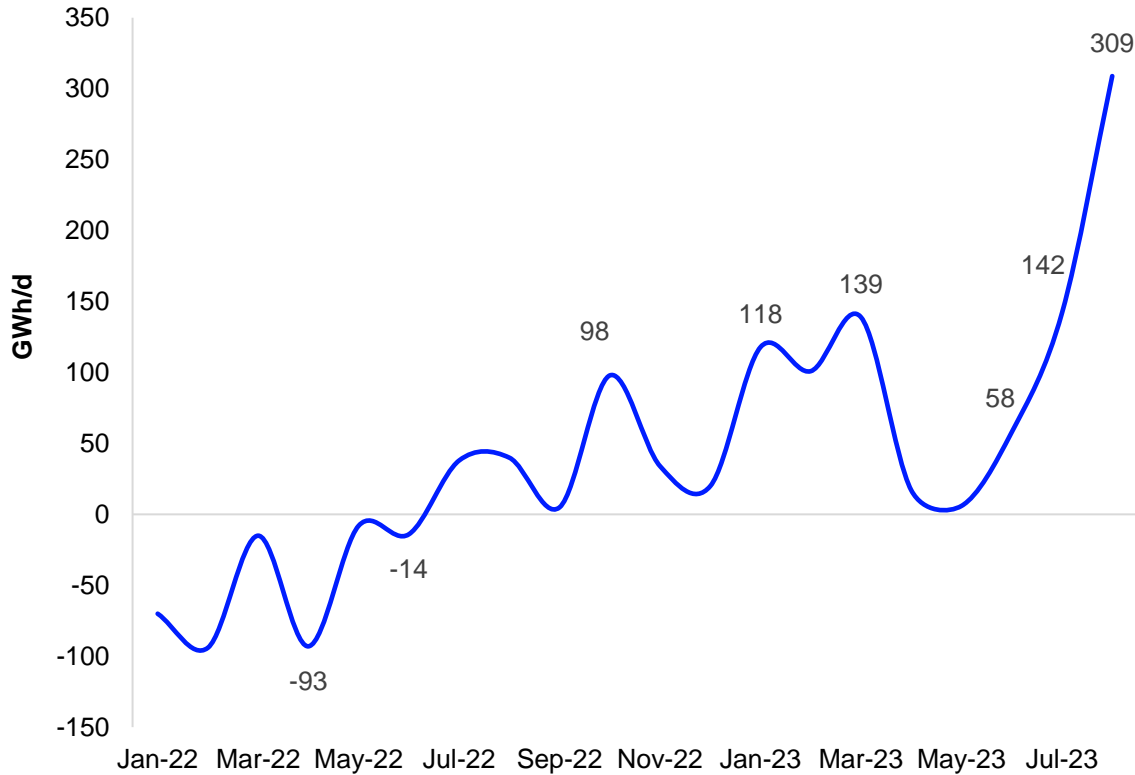
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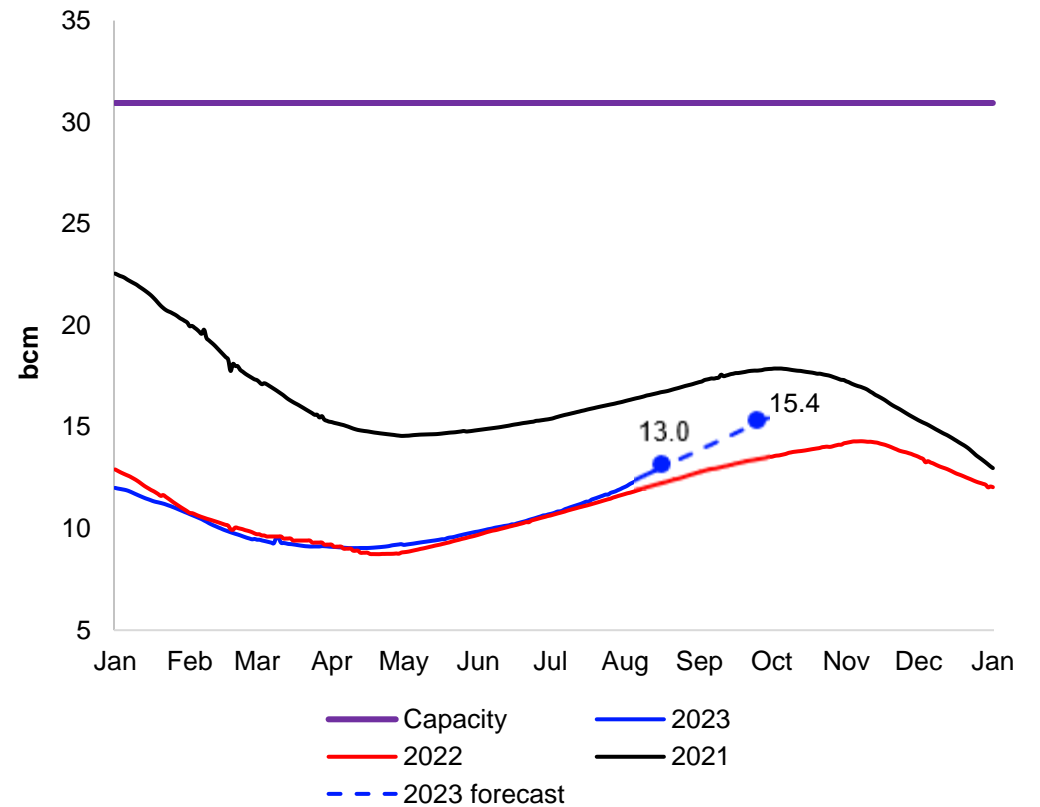
# Ukraine: European export to Ukrainian storages:

UKRAINIAN storage has been utilized of late, but conflict risk is dampening traders' appetite. LNG floating storage may return...inelasticity means more volatility!

Ukrainian gas import/export

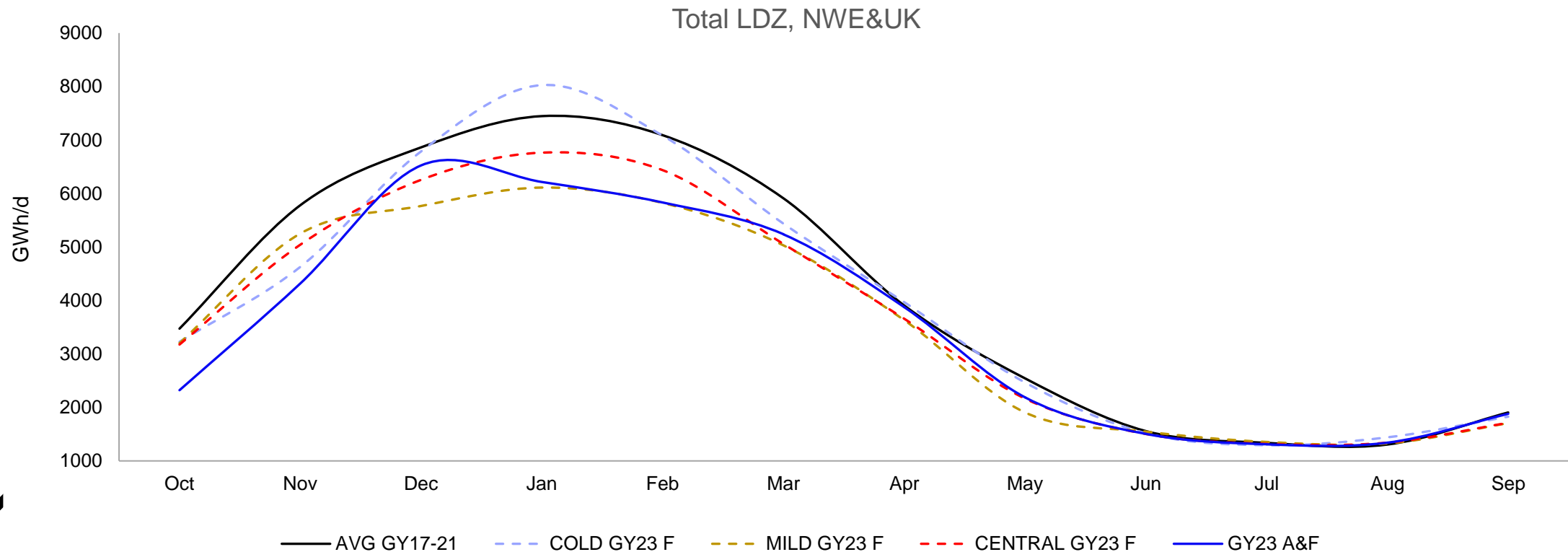


Ukrainian storages



# Will strong levels of demand destruction remain in play next winter?

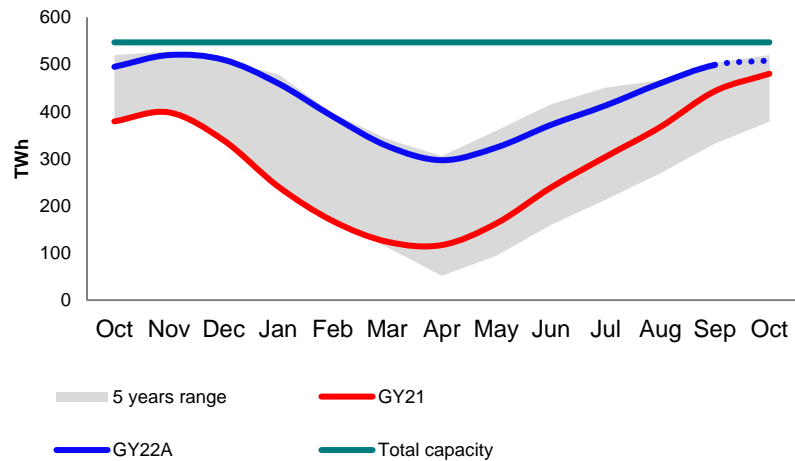
Consumer behaviour towards energy consumption has evolved, conversely lower prices can simulate an incremental increase in demand. We use 20 weather scenarios to run LDZ scenarios from our consumption model. Reduction factor applied to the winter seasons to capture potential demand destruction but at a slower pace than WIN22, no factor applied for the summer seasons. Current WIN23 scenario: 10% lower than 5-year average and a moderate increase on WIN 23





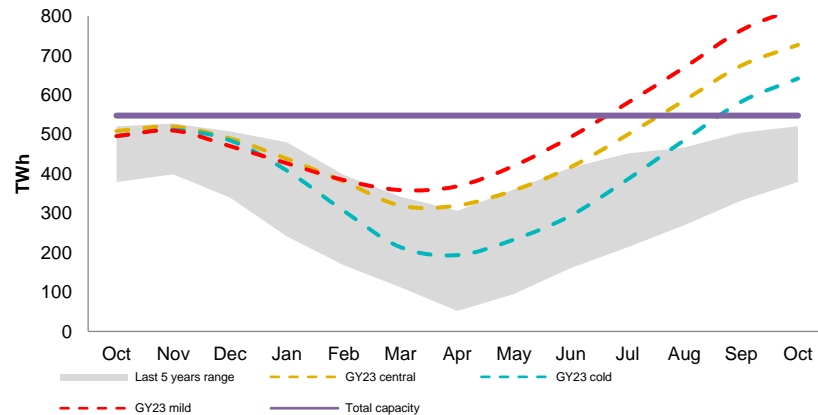
# Storage Conclusion: Looking beyond September

GY22: Aggregated storage forecast



- With September ending we will start looking into the winter season. Our updated Medium Term Outlook publication will come in the second half of September with more updated view on demand destruction, LDZ scenarios, and LNG arrivals. Webinar will take place on 26<sup>th</sup> of September, and the publication of the report will come prior this.
- For this report we continue to utilise LDZ scenarios from our [Medium Outlook](#) published at the end of March. Gas for power scenarios utilizes the Refinitiv Power team Forward model, run on 21 August.
- Our updated view for the balance outlook for GY23 remains to be bearish under the outcome of mild and normal weather. However, as ahead of each winter the risk remains in play of storage inventories ending the heating season closer to the bottom of the 5-year range as in the event of our cold scenario.

GY23: Aggregated storage forecast per scenario



# The latest winter weather outlook

## Refinitiv Weather Research view.

### SEAS5 (ECMWF):

- The new EC seasonal run suggests the continuation of divided weather between cool/wet central Europe and warm/dry south in August. It depicts abnormal warmth in September- with hot conditions in the southwest. Mild warmth is likely to dominate in early Autumn, with some risks of anomalous warmth/dryness in the very northern regions.

### CFSv2 (NOAA):

- The latest CFS forecast is like the ECMWF for the October-November period. However, is less anomalous for September, suggesting moderate temperatures across the southwest Mediterranean region with frequent rains.

### FINAL FORECAST

- While the weather in August is likely to be more moderate than EC Seasonal shows, the chance for warm/dry September is high. Mild warmth is still the most probable scenario for October-November. If this verifies, that will also increase the probability of high rainfall activity in the Mediterranean region but relatively dry conditions in Scandinavia during the autumn.





# Conclusion

- The combination of mild weather, demand destruction, policy measures and adherence, and a flurry of LNG supply attracted by the high TTF/NBP prices helped Europe navigate WIN22.
- European gas markets underwent a transition from undersupplied and concerned, to healthy supplied as well as a reconfiguration of supply with the loss of significant Russian volumes. This resulted in LNG becoming the new baseload supply for Europe. European remains fragile and will continue to be susceptible to near time swings like the 25% upswing observed two weeks ago on the back of Australian LNG concerns and 15% fall yesterday.
- The tighter supply gets or any potential interruptions to supply will inevitably result in such swings as nervousness exacerbates ahead of and through this coming winter, this will ensure volatility remains and Asia V Europe competition could return! COLD winters in Atlantic and Pacific basin will only add to the expected volatility.
- Energy infrastructure concerns remain a risk, NATO established a Critical Undersea Infrastructure Protection Cell to improve cooperation with the industry.
- Continuation of demand destruction remains crucial to navigate through WIN23 that and the long-awaited return of Chinese demand are the elephants in the room and are key to storage evolution over WIN 23 and into SUM 24 and we still believe risk remains firmly in play for WIN 23.
- Without baseload Russian supply and reduced nuclear power generation capacity, European gas markets remain vulnerable to price spikes and enhanced volatility with supply and weather conditions in both the Atlantic and Pacific amongst the issues that will continue to drive that volatility. Global gas supply will remain tight in 2023 with a raft of uncertainties in play.
- Economic headwinds remain in play in both China and the Eurozone which should continue to be a drag on industrial demand.